NOS. 271A18 and 401A18

SUPREME COURT OF NORTH CAROLINA

****

STATE OF NORTH CAROLINA ex rel. UTILITIES COMMISSION; DUKE ENERGY PROGRESS, LLC, Applicant;	)	
Appellees,	)	
v.	)	From the North Carolina Utilities Commission
ATTORNEY GENERAL JOSHUA H. STEIN, Intervenor; SIERRA CLUB, Intervenor;	)	
Appellants,	)	
PUBLIC STAFF – NORTH CAROLINA UTILITIES COMMISSION, Intervenor;	)	
Cross-Appellant.	)	

and

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v.	)	
ATTORNEY GENERAL JOSHUA H. STEIN, Intervenor; SIERRA CLUB, Intervenor; NORTH CAROLINA SUSTAINABLE ENERGY ASSOCIATION, Intervenor; NORTH CAROLINA JUSTICE CENTER, NORTH CAROLINA HOUSING COALITION, NATURAL RESOURCES DEFENSE COUNCIL, and SOUTHERN ALLIANCE FOR CLEAN ENERGY, Intervenors;	)	From the North Carolina Utilities Commission
Appellants,	)	
PUBLIC STAFF – NORTH CAROLINA UTILITIES COMMISSION, Intervenor;	)	
Cross-Appellant.	)	

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BRIEF OF INTERVENOR-CROSS-APPELLANT PUBLIC STAFF NORTH CAROLINA UTILITIES COMMISSION

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PUBLIC STAFF – NORTH CAROLINA UTILITIES COMMISSION, Intervenor;	)	
Cross-Appellant.	)	

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BRIEF OF INTERVENOR-CROSS-APPELLANT PUBLIC STAFF NORTH CAROLINA UTILITIES COMMISSION

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ISSUES PRESENTED

A. DID THE COMMISSION ERR BY CONCLUDING THAT COAL ASH COSTS ARE "USED AND USEFUL" AND ENTITLED TO RATE BASE TREATMENT?

B. DID THE COMMISSION ERR BY FAILING TO WEIGH SUBSTANTIAL EVIDENCE OF ENVIRONMENTAL VIOLATIONS?

C. DID THE COMMISSION ERR BY CONCLUDING THAT CAMA WOULD HAVE REQUIRED GROUNDWATER EXTRACTION AND TREATMENT REGARDLESS OF ENVIRONMENTAL VIOLATIONS?

STATEMENT OF THE CASE

On 21 December 2015, Duke Energy Progress, LLC ("DEP"), and Duke Energy Carolinas, LLC ("DEC"), (jointly, "Companies" and separately, "Company") made an informational filing entitled "Explanation of Accounting Treatment Related to Coal Ash Basin Obligations" in Docket Nos. E-2, Sub 1103, and E-7, Sub 1110. (DEP R pp 3-11; DEC R pp 3-11). On 30 December 2016, the Companies jointly filed a Petition for an Accounting Order in those same dockets, requesting approval to defer to a regulatory asset account certain costs estimated for the cleanup of coal combustion residuals[1] as required by state and federal law. (DEP R pp 14-29; DEC R pp 14-29).

On 1 June 2017, DEP filed an application in Docket No. E-2, Sub 1142, for a general rate increase pursuant to N.C. Gen. Stat. §§ 62-133 and 62-134. (DEP R p 109-397). On 20 June 2017, the North Carolina Utilities Commission ("Commission") issued its "Order Establishing General Rate Case and Suspending Rates." (DEP R p 398). This was

[1] Coal combustion residuals ("CCR") or Coal Combustion Products ("CCP") include fly ash, bottom ash, and other by-products from combustion of coal in coal-fired electric generation plants. Hereafter, "coal combustion residuals" shall be referred to as "coal ash" or "ash."

followed by an order issued on 22 June 2017 to establish hearing dates, testimony filing deadlines, and a public notice requirement. (DEP R pp 401-11). By order of 10 July 2017, the Commission consolidated the general rate case (Docket No. E-2, Sub 1142) with the earlier DEP petition (Docket No. E-2, Sub 1103) that requested deferral accounting for coal ash costs. (DEP R pp 421-23).

On 22 November 2017, DEP and the Public Staff – North Carolina Utilities Commission ("Public Staff") filed an Agreement and Stipulation of Partial Settlement that resolved some of their disputed issues in the rate case. (DEP R pp 447-67). DEP subsequently filed agreements that settled some or all issues in dispute between it and several of the other parties. (DEP R pp 468-75).

The Commission conducted hearings in September and October of 2017 across the service territory of DEP to receive testimony from members of the public regarding DEP's proposed rate increase. The Commission held an evidentiary hearing in Raleigh from 27 November 2017 through 7 December 2017 to receive evidence from the expert witnesses of the parties to the DEP rate case. Following the filing of various post-hearing exhibits, briefs, and proposed orders, the

Commission issued its "Order Accepting Stipulation, Deciding Contested Issues and Granting Partial Rate Increase" ("DEP Order") on 23 February 2018. (DEP R pp 477-754). In response to a motion by the Public Staff, the Commission issued an "Order on Motion for Clarification" on 17 April 2018. (DEP R pp 949-53).

On 14 March 2018, the Commission granted all parties an extension of time until 25 April 2018 in which to file notices of appeal and exceptions to the DEP Order. (DEP R pp 936-37). The North Carolina Attorney General ("Attorney General") filed Notice of Appeal on 25 April 2018. (DEP R pp 954-66). The Sierra Club likewise filed a Notice of Appeal on 25 April 2018. (DEP R pp 967-70). Pursuant to N.C. Gen. Stat. § 62-90, the Public Staff filed a Notice of Cross Appeal on 15 May 2018. (DEP R pp 971-79).

The DEP record on appeal was settled by stipulation on 10 August 2018 (DEP R pp 1058-66), and was filed and docketed in the North Carolina Supreme Court ("Court") on 24 August 2018.

By order of 10 July 2017, the Commission consolidated DEC's petition (Docket No. E-7, Sub 1110) for deferral of coal ash and certain other costs with DEC's yet-to-be-filed general rate case. (DEC R pp 108-

110). On 25 August 2017, DEC filed an application for a general rate increase pursuant to N.C. Gen. Stat. §§ 62-133 and 62-134 , as well as a request for an accounting order to establish regulatory assets for various cost deferrals, and a request to consolidate dockets. (DEC R pp 112-342). On 19 September 2017, the North Carolina Utilities Commission ("Commission") issued its "Order Establishing General Rate Case and Suspending Rates." (DEC R pp 343-44). This was followed by the issuance of an order on 13 October 2017 to establish hearing dates, testimony filing deadlines, and a public notice requirement. (DEC R pp 345-54). These procedural orders were amended and supplemented by subsequent orders.

On 28 February 2018, DEC filed partial settlement agreements with the Public Staff (DEC R pp 672-90), and with certain other parties (DEC R pp 666-71).

The Commission conducted hearings in January of 2018 across the service territory of DEC to receive testimony from members of the public regarding DEC's proposed rate increase. The Commission held an evidentiary hearing in Raleigh from 5 March 2018 through 22 March 2018 to receive evidence from the expert witnesses of the parties to the

DEC rate case. Following the filing of various post-hearing exhibits, briefs, and proposed orders, the Commission issued its "Order Accepting Stipulation, Deciding Contested Issues and Requiring Revenue Reduction" ("DEC Order") on 22 June 2018. (DEC R pp 825-1226).

The Attorney General filed a Notice of Appeal on 20 July 2018. (DEC R pp 1357-71). The North Carolina Sustainable Energy Association ("NCSEA"), Sierra Club, and as a group the North Carolina Justice Center, North Carolina Housing Coalition, Natural Resources Defense Council, and Southern Alliance for Clean Energy (collectively, "Justice Center"), filed notices of appeal on 23 July 2018. (DEC R pp 1372-84). Pursuant to N.C. Gen. Stat. § 62-90, the Public Staff filed a Notice of Cross Appeal on 8 August 2018. (DEC R pp 1398-1401).

On 12 September 2018, the Court allowed the Joint Motion to Hold Case in Abeyance in the appeal of the DEP Order. The effect of this order was to hold appeal of the Commission's decision in the DEP general rate case in abeyance until the Commission's later decision in the DEC general rate case could be docketed at the Court, and the parties could file a motion to consolidate the two appeals.

The DEC record on appeal was settled by stipulation on 7 November 2018 (DEC R pp 1407-16), and was filed and docketed at the Court on the same day.

By order of 29 November 2018, the Court allowed consolidation of the two appeals in the Court's docket numbers 271A18 (for DEP) and 401A18 (for DEC), and further allowed an extended briefing schedule of 120 days for appellant briefs, 120 days for appellee briefs, and then 45 days for reply briefs. On 18 March 2019 the Court granted the Attorney General's motion to further extend the deadline for filing appellants' briefs to 26 April 2019.

STATEMENT OF THE GROUNDS FOR APPELLATE REVIEW

N.C. Gen. Stat. § 62-90 allows any aggrieved party to a proceeding before the Commission to appeal from a final order of the Commission. N.C. Gen. Stat. § 7A-29(b) provides that appeal as of right lies directly to the North Carolina Supreme Court from the Commission's final order in a general rate case. The Public Staff was a party in the DEP and DEC

general rate case proceedings before the Commission and is appealing from the final orders in those cases.

STATEMENT OF THE FACTS

A major issue in the DEP and DEC rate cases was whether, and how, costs related to disposal of coal ash should be recovered in rates. The Public Staff's cross appeals are limited to the parts of the DEP and DEC Orders that authorize the Companies to charge customers for the large majority of coal ash costs, along with a return on those costs. Accordingly, this Statement of Facts focuses on the coal ash cost recovery issue.

A. Duke Energy Progress

DEP initially applied for an increase of $477,495,000 (or 14.9% increase) in annual revenues from North Carolina retail operations. (DEP R p 491). The Company subsequently revised its rate increase request to $419,537,000, and then revised it again to $425.6 million. (Id.).

The Public Staff filed testimony recommending a $2,783,000 increase, before temporarily reducing rates by another $79,842,000 per year through a two-year Excess Deferred Income Taxes rider ("EDIT Rider"). (DEP Doc. Ex. 1402). The EDIT Rider returns to ratepayers

certain funds previously collected in rates by DEP for tax expense, which are in excess of the Company's actual tax expense. The Public Staff recommendation was subsequently revised to a $142,356,000 increase to incorporate the effects of the partial settlement between DEP and the Public Staff. However, that increase would be further reduced in the first four years by an annual EDIT Rider of $42,577,000. (DEP Doc. Ex. 1463).

The Commission approved the partial settlement between the Public Staff and DEP. (DEP R pp 491-95). Other issues were litigated by DEP and the Public Staff, as well as by other parties. Among the Public Staff's major recommended adjustments to DEP's rate request were removal from DEP's requested revenue requirement of (1) approximately $129.6 million per year for estimated future coal ash remediation costs, and (2) approximately $54.8 million per year for recovery of deferred past coal ash costs. The Public Staff recommended the latter adjustment be achieved through recovery of the deferred past coal ash costs by a long-term amortization without a return, which would result in a 50%-50% equitable sharing of the past coal ash costs that were not otherwise disallowed. (DEP R pp 644-45; DEP Doc. Ex. 1378).

The DEP Order authorized an increase in annual revenues from base rates of $193,978,000 (DEP R pp 923, 927), which is roughly 46% of DEP's final request. This is a 6% overall increase. However, during the first four years, the overall increase approximates 4.7% due to the temporary rider decrement for EDIT. (Id.). For the Residential class of customers, there is roughly a 7.3% increase in base rates (6.2% during the EDIT decrement period). (DEP R p 768).

At the hearing, the Public Staff presented evidence on coal ash costs in support of its positions that (1) certain coal ash costs should be disallowed entirely from recovery in rates because they were the direct result of environmental violations committed by DEP and would not have been incurred to comply with new coal ash laws and regulations but for those violations, and (2) coal ash costs not otherwise disallowed should be equitably shared between ratepayers and shareholders. Public Staff witnesses Garrett and Moore also recommended disallowances based on the unreasonableness of certain costs to remediate coal ash basins; the Commission's rejection of those recommendations is not part of this appeal.

Since the 1950s, DEP has collected ash at its coal-fired power plants, mixed it with water, and sluiced the mixture to earthen basins (also called impoundments or ponds) for disposal. (DEP R p 624). The ash settles to the bottom of the basins where it has accumulated in large quantities over time – over 52 million tons of ash at 19 basins across DEP's eight coal-fired plants.[2] (See DEP Doc. Ex. 508-09). Chemical "constituents" of coal ash[3], including heavy metals, have leached from the ash basins into groundwater, and have also discharged from the basins

[2] Additional evidence indicated that together DEC and DEP had over 150 million tons of coal ash at their North Carolina sites. (DEC T 7 p 18).

[3] The Joint Factual Statement signed by DEC and DEP as part of their guilty plea to federal criminal charges states in part:

> Coal ash contains various heavy metals and potentially hazardous constituents, including arsenic, barium, cadmium, chromium, lead, manganese, mercury, nitrates, sulfates, selenium, and thallium. Coal ash has not been defined, itself, as a "hazardous substance" or "hazardous waste" under federal law, although some constituents of coal ash may be hazardous in sufficient quantities or concentrations.

(DEC Doc. Ex. 781). The Joint Factual Statement also has a helpful summary of the history of DEC and DEP ash disposal, and the federal laws and regulations governing that disposal, including the North Carolina-administered National Pollutant Discharge Elimination System ("NPDES") permitting system applicable to discharges from ash basins to surface waters. (DEC Doc. Ex. 781-86).

into nearby surface waters. (See DEP T 18 pp 241, 254-56, 266-67, 289-90).

DEP witnesses testified that the coal ash costs included in the Company's rate request were incurred to comply with new laws and regulations designed to mitigate the risks of contamination from ash basins. (See DEP R pp 623-30; DEP T 13 p 368). Specifically, DEP's ash basins must be assessed for environmental problems, dewatered, and permanently closed either by excavating the ash and moving it to a lined facility, or capping it in place with an impermeable cover, or using the ash for "beneficial" purposes such as concrete production.

The new laws and regulations that require these actions are (1) the United States Environmental Protection Agency ("EPA") rule entitled Hazardous and Solid Waste Management System - Disposal of Coal Combustion Residuals from Electric Utilities, 80 Fed. Reg. 21301 (April 17, 2015) ("CCR Rule"); and (2) the North Carolina Coal Ash Management Act, Session Law 2014-122, along with subsequent amending legislation known as the Mountain Energy Act, Session Law 2015-110, and the Drinking Water Protection/Coal Ash Cleanup Act, Session Law 2016-95 (collectively, "CAMA"). (See DEP T 18 pp 242-43,

248-49; DEP Doc. Ex. 1102). The Company maintained that its coal ash costs were "reasonable" within the meaning of N.C. Gen. Stat. § 62-133(b) because they were mostly[4] incurred to comply with the new legal requirements of CAMA and the CCR Rule, and therefore should be recovered in rates. (See, e.g., DEP R p 625).

While CAMA and the CCR Rule brought new requirements for closure of DEP's ash basins, those ash basins had already been subject to state and federal environmental laws and regulations for decades, including corrective action requirements for groundwater contamination. There are three main categories of state and federal environmental requirements that have applied to DEP's ash basins in one form or another for decades:

(1) limits on discharges to surface waters of the state (e.g., N.C. Gen. Stat. § 143-215.1, first codified in 1951 and subsequently amended);

[4] A consent agreement with South Carolina environmental regulators to remove coal ash from the Robinson plant was not mandated by CAMA or the CCR Rule, but DEP argued this too was a "compliance" cost. (See DEP R pp 624-25). DEC also had a consent agreement, not mandated by CAMA or the CCR Rule, that lead to coal ash cleanup costs for its W.S. Lee plant in South Carolina. (See DEC R pp 1036-37, 1141).

(2) dam safety (the Dam Safety Law of 1967, codified at N.C. Gen. Stat. §§ 143-215.23-215.37); and

(3) limits on contamination of groundwater (15A N.C. Admin. Code 2L, first promulgated in 1979 ("2L Rule")).

To protect the state's surface waters, liquid may lawfully be discharged from ash basins to surface waters (i.e., nearby rivers and lakes) only in accordance with N.C. Gen. Stat. § 143-215.1 and with conditions prescribed in NPDES permits issued to DEP by environmental regulators.[5] Dam safety regulations also serve to protect surface waters. 15A N.C. Admin. Code 02K .0103-.0302.

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[5] The NPDES permitting system and its relationship to federal and state water quality regulations is described in the "Joint Factual Statement" appended to the Memorandum of Plea Agreement in the federal criminal case against DEP and DEC regarding their coal ash management. (DEP Doc. Ex. 818-20). Audits commissioned by the federal Court Appointed Monitor also describe these legal requirements:

> The Clean Water Act (CWA) prohibits the discharge of any pollutant into the waters of the United States except in compliance with a permit issued pursuant to the CWA by the Environmental Protection Agency (EPA) or a state with an approved program. 33 U.S.C. §§ 131l(a) and 1342. NCDEQ implements an approved NPDES program in North Carolina under 15A NCAC 2H.0100 et seq. Additionally, under N.C.G.S.A. § 143-215.l(a), unauthorized discharges are a violation.

To protect groundwater, state regulations limit the concentration of coal ash constituents allowed to leach from the ash basins into groundwater. (See 2L Rule at parts .0102(3), .0103(b)(2), and .0106(d) and (e)). Groundwater is not static; it flows from under the ash basins to offsite locations. (See DEP Doc. Ex. 865-66, 1123). The regulatory limits on groundwater contamination from coal ash apply at each coal electric generation plant's "compliance boundary." See 2L Rule at parts .0102(3), .0103(b)(2), and .0106(d) and (e). Thus, "exceedances" of regulatory limits on the concentration of listed chemical "constituents" of coal ash are prohibited at the point where groundwater flows outside the compliance boundary for the coal-fired power plant and impacts water quality for neighboring areas. (Id.; see also DEP T 18 pp 244-46).

If groundwater exceedances occur up gradient (i.e., regulated chemicals are present in wells hydraulically upstream of the ash basin) they are presumed to be naturally occurring "background levels." However, exceedances that occur down gradient but not up gradient of an ash basin indicate contamination from coal ash. (See DEC T 26 pp 698-99; DEP T 18 pp 250-56; DEP Doc. Ex. 433, 473-77).

(DEP Doc. Ex. 3677).

Before CAMA and the CCR Rule became law in 2014 and 2015, respectively, DEP coal ash basins had caused groundwater and surface water contamination to exceed limits set in state and federal laws. (See DEP R pp 682-83; DEP T 18 p 242; DEP Doc. Ex. 757-870, 1120). Then in 2008 there was a catastrophic failure of a dam at an ash impoundment for the Kingston Fossil Plant owned by the Tennessee Valley Authority. (DEP T 18 p 242). In 2010 the EPA submitted its proposed CCR Rule in response to this event and other incidents of coal ash contamination. (See DEP Doc. Ex. 354-505).

On 2 February 2014 a stormwater pipe collapsed under an ash basin at DEC's Dan River plant, releasing up to 39,000 tons of coal ash into the Dan River. This event, as well as other coal ash violations at DEP and DEC plant sites, prompted enactment of CAMA later that year. (See DEP T 18 pp 242-43; DEP Doc. Ex. 811-12, 839-55, 857-58, 865-66). The Federal CCR Rule also was finalized after the Dan River spill, with publication of the final version on 15 April 2015, to be effective in October of 2015. (See DEP Doc. Ex. 3273-74).

CAMA requires comprehensive assessments of groundwater and discharges at ash basins, corrective action, and the closure of all DEP and

DEC ash basins in North Carolina on a strict timeline.[6] N.C. Gen. Stat. §§ 130A-309.211-.214. The Kingston and Dan River events involved sudden, catastrophic contaminations of surface waters. However, the ensuing CAMA law and CCR Rule also addressed the less visible problem of groundwater contamination caused by ash basins (see N.C. Gen. Stat. § 130A-309.210 et. seq. and 40 C.F.R. §§ 257.3-4, 257.90-257.100). Groundwater contamination has flowed from ash basins to areas outside the compliance boundary at every DEP and DEC coal-fired plant in North Carolina (see DEP Doc. Ex. 1123; DEC Doc. Ex. 2043).

Likewise, the CCR Rule specifies that listed substances may not exceed a "maximum contaminant level" ("MCL") beyond the "waste boundary." (40 C.F.R. § 257-3-4). The CCR Rule requires groundwater monitoring of existing ash basins to have begun no later than 17 October

[6] Session Law 2014-122, Section 3.(b) provides that ash basins at DEP's Sutton and Asheville plants, and DEC's Dan River and Riverbend plants, must be closed by 1 August 2019. The Asheville plant subsequently received an extension on the closure deadline to 1 August 2022. 2015 N.C. Sess. Laws 110, Section 2.(a). The H.F. Lee, Cape Fear, and Weatherspoon plants must be closed by 1 August 2028. 2016 N.C. Sess. Laws 95, Section 3.(a). The other DEP and DEC ash basins in North Carolina must be closed by 31 December 2024 (intermediate priority), or 31 December 2029 (low priority). N.C. Gen. Stat. § 130A-309.214.

2017; reports of the monitoring results were to have begun no later than 31 January 2018. 40 C.F.R. § 257.90(b) and (e).

CAMA, the CCR Rule, and certain coal ash-related environmental events that preceded these new laws prompted significant expenditures by DEP and DEC to correct environmental problems impacting both surface waters and groundwater at their coal ash impoundments.[7] DEP sought recovery of $241.9 million in its rate case for coal ash cleanup costs incurred just from 1 January 2015 through 1 August 2017. (DEP R p 622). DEC sought $566.8 million in its rate case for coal ash cleanup costs incurred from 1 January 2015 through 31 December 2017. (DEC R pp 1032-33).

However, even without CAMA and the CCR Rule, the Companies would have incurred costs for "corrective action" to clean up exceedances of groundwater contamination limits pursuant to 15A N.C. Admin. Code 02L .0106, to the extent required by regulatory authorities or courts.

[7] In January of 2014, just days before the Dan River coal ash accident, Duke Energy estimated it would need $610 million to close all the DEC ash basins with the cap in place method, and $430 million for DEP. (DEC Doc. Ex. 759). In their rate cases, DEC and DEP estimated closure under CAMA and the CCR Rule would require an Asset Retirement Obligation amount of $2.6 billion for DEC and $2.5 billion for DEP. (DEC R p 1222 and DEP R p 617).

They were also responsible for the costs of remediation and penalties from unlawful surface water discharges, as illustrated by their plea agreements in the federal criminal case under the Clean Water Act. (DEP Doc. Ex. 757-807; DEC Doc. Ex. 2108-61). DEP and DEC exposure to liability for contamination caused by their ash basins is further reflected in their letters to, and standstill agreements with, their insurers, starting in 1996, wherein DEP and DEC provided notice of anticipated possible damage claims due to coal-ash related environmental harm. (See, e.g., DEP Doc. Ex. 273-78, 284-95, 291-95; DEC Doc. Ex. 596, 600-02, 641-45).

CAMA and the CCR Rule required a more rigorous preventive approach to coal ash contamination than previously planned by DEC and DEP. CAMA reflects a legislative judgment that the only effective solution is to mandate dewatering and closure of all DEP and DEC ash basins in North Carolina. (See N.C. Gen. Stat. § 130A-309.214; see also 2016 N.C. Sess. Laws 95; 2015 N.C. Sess. Laws 100; 2014 N.C. Sess. Laws 122).

DEP and DEC asserted that the amount they sought through rate recovery is primarily for CAMA and CCR Rule compliance. (DEP T 16 pp 104-05, 136-40; DEP Doc. Ex. 567, DEC T 14 pp 100-01, 131-34; DEC Doc.

Ex. 3574-75). This amount also includes work to remediate ash basin environmental concerns that arose well before CAMA and the CCR Rule – cleanup costs that Public Staff witness Lucas testified would have been incurred even without CAMA and the CCR Rule. (DEP T 18 p 284-85; DEP T 19 p 48). DEP estimated its total corrective action and closure costs under CAMA and the CCR Rule would be around $2.5 billion. (DEP R p 617).

Before CAMA was enacted and the CCR Rule was finalized, DEP was named in lawsuits filed by environmental organizations and the North Carolina Department of Environmental Quality ("DEQ").[8] (DEP Doc. Ex. 1120; DEP T 18 pp 257-67). Those lawsuits alleged environmental violations caused by leakage of contaminants from DEP's coal ash basins, including unauthorized discharges from ash basins to surface waters in violation of N.C. Gen. Stat. § 143-215.1 and exceedances of regulated chemicals in groundwater beyond the compliance boundaries of the coal plants in violation of the 2L Rule. The

[8] DEQ was previously known as the Department of Environment and Natural Resources, or DENR. For convenience, the agency will be referred to as "DEQ" in this brief regardless of its name at the applicable times.

lawsuits alleged violations at every DEP coal-fired power plant in North Carolina. (Id.). The alleged violations preceded the coal ash spill at the Dan River plant and continued thereafter.

DEP also pleaded guilty to federal criminal negligence under the Clean Water Act for discharges in violation of its NPDES permits at its Asheville, Cape Fear, and H.F. Lee plants. These coal-ash related violations occurred before the enactment of CAMA and the CCR Rule. (DEP T 18 pp 266-67; DEP Doc. Ex. 757-904).

In its rate case, DEP witnesses testified that the Company had always complied with applicable environmental regulations: "Since the 1920s, DE Progress has disposed of CCRs in compliance with then current regulations and industry practices." (DEP T 16 p 103; see also DEP T 16 pp 118-19, 142; DEP T 21 p 62; DEC T 14 p 99; DEC T 24 pp 227, 245).

In contrast, Public Staff witness Lucas testified that DEP had violated N.C. Gen. Stat. § 143-215.1 by allowing unauthorized surface water discharges from ash basins ("seeps"), and had violated the 2L Rule extensively with exceedances of groundwater limits for toxic chemicals migrating from ash basins. (DEP T 18 pp 282-85, 288-90; DEP T 19 pp

41-49; DEP Doc. Ex. 1123). The Company argued that the existence of lawsuits and settlements concerning alleged environmental violations did not prove there were violations. (DEP T 20 p 154). Public Staff witness Lucas testified that the existence of violations was established independently of the lawsuit allegations.[9] The independent evidence of environmental violations from DEP's coal ash basins includes (1) over 2,800 groundwater violations shown by data from DEP's own groundwater monitoring wells, as reported to DEQ; (2) DEP's admission of unpermitted seeps in the Joint Factual Statement[10] appended to DEP's guilty plea in federal court; and (3) findings in the independent

[9] Witness Lucas also cited the existence of lawsuits and settlements as evidence of violations. The Commission ruled in the DEP Order that the existence of lawsuits and settlements did not constitute valid evidence of violations. The Public Staff does not challenge that ruling. Instead, the Public Staff's appeal relies on factual evidence of DEP and DEC coal ash-related environmental violations that is separate from the mere existence of lawsuits and settlements.

[10] The Joint Factual Statement submitted in the DEP case as part of Kerin Sierra Club Cross Exhibit 2 was an unsigned draft version. It stated there were 403 seeps that DEP and DEC had identified in permit modification applications in 2014, meaning the seeps were not authorized in NPDES permits and the companies were seeking to amend the permits to make the seeps lawful. The final version of the Joint Factual Statement revised the number of such seeps to 200. (DEC Doc. Ex. 816).

environmental audits performed for the court-appointed monitor as a condition of federal probation. (DEP T 19 pp 44-47).

Public Staff witness Lucas further testified that costs of extraction wells and water treatment at the Sutton plant would not have been incurred under CAMA or the CCR Rule but for the groundwater violations of DEP, and therefore the associated costs should be disallowed entirely from rate recovery. (DEP R pp 641-42; DEP T 18 pp 278-80).

Apart from the costs of extraction wells and water treatment, many of the coal ash costs incurred by DEP are the result of the closure requirements of CAMA and the CCR Rule, and especially the strict closure deadlines of CAMA. Public Staff witness Lucas testified that DEP would still have had to remedy its coal ash-related violations if CAMA and the CCR Rule had not been enacted, but that it was possible some of the remedies would have been different from closing the ash basins. He indicated that the cost (and therefore an amount to recommend for disallowance) of corrective actions in the absence of CAMA and the CCR Rule would have been speculative. (DEP T 19 pp 48-49; see also T 18 pp 339-40). Accordingly, as a result of their position that DEP had culpability for its non-compliance with environmental regulations

governing coal ash disposal, and due to the unusual nature and large amount of these costs that will not produce any additional electricity, Public Staff witnesses proposed that the costs to close the ash basins under CAMA and the CCR Rule, and thereby remediate environmental contamination emanating from the basins, should be shared between ratepayers and DEP shareholders, rather than paid entirely by ratepayers as proposed by DEP. (DEP T 18 pp 274, 285, 308-15). They noted that CAMA and CCR Rule "compliance" involves "corrective action" to mitigate existing contamination as well as preventing future contamination of groundwater and surface waters. (DEP R pp 642-45, DEP T 18 pp 282-85).

DEP proposed to recover its coal ash costs in two different ways: one approach for costs incurred in the years leading up to its general rate case, and another approach for estimated future costs. (DEP R p 622). First, DEP proposed to recover from its North Carolina retail customers $241.9 million of coal ash costs incurred prior to the rate case hearing. (Id.). Those costs were incurred between 1 January 2015 and 31 August 2017 (id.), but instead of being written off to expense when incurred, DEP requested that all costs required by CAMA and the CCR Rule be deferred

to a regulatory asset. (DEP R pp 14-27). The requested deferral accounting treatment would allow the Company to request, and other parties to challenge, recovery of those coal ash costs in future general rate cases. Absent a deferral, the Company would have a significant decline in its return on equity for coal ash costs already incurred, and over the long term "may have to write off billions of dollars of costs for accounting purposes." (DEP R p 27). If recovery of those costs were allowed by the Commission in the next general rate case, DEP would include in rates an expense for amortization of the regulatory asset.

DEP's request to defer coal ash costs to a regulatory asset was supported by the Public Staff, subject to review in the rate case of the reasonableness of the costs and the fairness of sharing the costs between ratepayers and shareholders. (DEP R pp 81-89). The Commission ultimately approved the deferral (DEP R p 620).

The DEP Order acknowledges that deferral of costs creates an exception to the usual legal prohibition against retroactive ratemaking. (DEP R p 620). As the Commission further noted in its DEC Order,

> The point of a deferral is that the costs to be deferred are of a magnitude that they need to be taken out of the normal ratemaking accounting process and set to one

> side for later inclusion in rates, lest the Company lose its ability to recover them.

(DEC R p 1114). However, deferral of these past coal ash costs for regulatory accounting purposes did not include a determination of whether the costs were prudently and reasonably incurred, or whether equitable sharing was appropriate versus allowing a return on the unamortized balance of deferred costs. Those questions were left for consideration in the rate case.

In the rate case, DEP requested that the past coal ash costs, which were deferred to a regulatory asset, be recovered in rates as an amortization expense over five years, along with the Company's authorized overall rate of return applied to the unamortized balance. (DEP R p 622). DEP's proposed amortization of the $241.9 million over five years, plus a return on the unamortized balance, would result in an annual amount of $60.9 million charged to North Carolina retail ratepayers. (DEP Doc. Ex. 1378).

Second, DEP proposed to recover in rates an additional amount to pay for its anticipated future coal ash expenses. (DEP R p 622). This "run rate" for future coal ash costs would be trued up in future rate cases so that the Company would not over- or under-recover its actual coal ash

expenditures. (Id.). The run rate would allow recovery of future coal ash costs in the same timeframe that they were incurred, rather than the other options of (1) deferring them for potential recovery in future rate cases, or (2) writing them off as expenses when incurred, without a further increase in rates.

The Company's proposed run rate for future coal ash costs would have resulted in an additional annual amount charged to North Carolina retail ratepayers of $129.6 million.[11] (See DEP Doc. Ex. 1378). When amortization of past coal ash costs is added to the run rate for future coal ash costs and to certain legal costs for coal ash environmental litigation, the total rate increase requested in the present case by DEP, solely attributable to coal ash costs, was approximately $190.5 million per year. (Id.).

In contrast, the Public Staff recommended that DEP be allowed to recover only approximately $6 million per year for coal ash costs. (Id.). The significant difference between the Company's request for recovery of

[11] The requested $129.1 million annual expense for future coal ash costs would have to be grossed up by the inclusion of uncollectibles expense and the regulatory fee to yield a revenue requirement of approximately $129.6 million. (DEP Doc. Ex. 1378).

coal ash cost and the Public Staff's recommendation was the result of (1) disallowances recommended by Public Staff witnesses Garrett, Moore, and Lucas based on unreasonableness of certain coal ash expenditures, (2) the net effect of various accounting adjustments recommended by witness Maness, (3) a recommended amortization period of twenty-eight years (later reduced to twenty-six years based on the rate of return stipulated by DEP and the Public Staff) with no return on the unamortized balance, and (4) a recommendation that future coal ash costs be deferred for review in future rate cases in lieu of recovery of the future costs through a run rate. (See DEP T 18 pp 298-99).

The purpose of the Public Staff's recommended longer amortization period, with no return on the unamortized balance, was to effectuate a 50%-50% "equitable sharing" of the past coal ash costs between ratepayers and investors. (DEP R p 644). This would amount to a sharing of costs because, although DEP investors would ultimately recover from ratepayers their funds advanced to pay for coal ash costs, investors would have lost the time value of money (i.e., no return) during that extended recovery period. (See DEP T 18 pp 314-15).

The Commission accepted several of the Public Staff's recommendations regarding coal ash cost recovery in the DEP Order. Acceptance of the Public Staff's recommendation to deny the run rate was the largest coal ash cost adjustment in the DEP Order. However, this reduction to DEP's request only postpones consideration of recovery of future coal ash costs to future rate cases rather than disallowing those costs. (See DEP R p 685). All but $9.5 million of the disallowances proposed by witnesses Garrett, Moore, and Lucas for unreasonable costs were rejected in the DEP Order. (DEP R pp 658-66). The DEP Order also rejected the proposal of Public Staff witnesses Lucas and Maness for a 50%-50% equitable sharing of coal ash costs between the Company and its customers. (DEP R pp 667-78).

The DEP Order did impose a one-time $30 million mismanagement penalty based on DEP's guilty plea to criminal negligence for certain coal ash management deficiencies. (DEP R pp 678-85). The $30 million one-time mismanagement penalty imposed by the DEP Order, along with a $9.5 million disallowance of discrete coal ash costs (DEP R pp 497-98), mathematically means shareholders will pay 1.6% of the estimated $2.5 billion in coal ash costs. Absent any prudence disallowances by the

Commission in future cases, the result of the DEP Order is that consumers will have to pay for the remaining 98.4% of coal ash costs, or $2.46 billion.

B. Duke Energy Carolinas

DEC initially applied for an increase of approximately $611 million (or a 12.8% increase) in annual revenues from North Carolina retail operations. (DEC R p 836). The Company subsequently revised its requested rate increase to $700,645,000. (Id.). After incorporating its stipulation of partial settlement with the Public Staff, DEC requested an annual revenue increase of $372,527,000. (DEC R p 1151).

Following the partial settlement with DEC, the Public Staff recommended a rate decrease of $385,697,000 in annual revenues from North Carolina retail customers, including a $60.1 million per year EDIT Rider reduction for the first four years. (DEC R p 1151; DEC Doc. Ex. 363).

The Commission approved the partial settlement between the Public Staff and DEC. (DEC R pp 837-42). Other issues, including cost recovery for the cleanup of coal ash, were litigated by DEC and the Public Staff, as well as other parties. DEC requested rate recovery of $566.8

million on a North Carolina retail basis for coal ash costs incurred from 1 January 2015 through 31 December 2017, through deferral of those costs to a regulatory asset and amortization over five years with a return on the unamortized balance. (DEC R 1032-33; DEC Doc. Ex. 5376). This would have resulted in a $139 million per year increase in DEC's revenue requirement. (DEC Doc. Ex. 5376). DEC also sought an ongoing annual "run rate" expense recovery of approximately $201 million, on a North Carolina retail basis, for anticipated future coal ash costs, with a true-up in future rate cases to actual costs. (Id.).

In contrast, the Public Staff recommended adjustments to DEC's rate request that would remove from DEC's requested revenue requirement (1) the $201 million per year "run rate" for estimated future coal ash remediation costs, and (2) $120.4 million per year for recovery of deferred past coal ash costs. (DEC Doc. Ex. 5376). The Public Staff recommended the latter adjustment be achieved through recovery of the deferred past coal ash costs by a long-term amortization without return, which would result in a 51%-49% equitable sharing between

shareholders and ratepayers for the $470,652,000[12] of deferred past coal ash costs not otherwise disallowed. (Id.). The ratemaking impact of the Public Staff recommendation would have been an annual revenue requirement for coal ash cost recovery of $18,944,000 per year for twenty-five years, versus the DEC request for $341,972,000 per year for five years. (Id.).

The DEC Order authorized a decrease in annual revenues from base rates of $12,760,000. (DEC R p 1248). However, during the first four years, there is an additional decrease of $60.1 million per year due to the temporary rider decrement for EDIT. (Id.). A major portion of the decrease was due to the reduction in DEC's federal income tax rate and other aspects of the Tax Cuts and Jobs Act of 2017, which was flowed through to ratepayers in the amount of approximately $211 million per year lower revenue requirement. (See DEC Doc. Ex. 362, line 29, column c).

[12] DEC requested a five-year amortization, with a return, of $566,755,000 of past coal ash costs. The difference between that number and the Public Staff's $470,652,000 reflects Public Staff recommendations for disallowance of certain costs on the basis of imprudence. (Id.).

Similar to the DEP case, DEC witnesses testified that coal ash costs were "reasonable" within the meaning of N.C. Gen. Stat. § 62-133(b) because they were mostly[13] incurred to comply with the new legal requirements of CAMA and the CCR Rule, and therefore should be recovered in rates. (See DEC T 14 pp 99-101, 127, 133-34; DEC R pp1036-37).

The Public Staff presented evidence on coal ash costs in support of its position that (1) certain coal ash costs should be disallowed from recovery in rates because they were the direct result of environmental violations committed by DEC, and (2) coal ash costs not otherwise disallowed should be equitably shared between ratepayers and shareholders. (DEC T 26 pp 726-42; DEC T 22 pp 65-66, 70-85; DEC R pp 1057-58). Public Staff witnesses Garrett and Moore also recommended disallowances based on the unreasonableness of certain costs to remediate coal ash ponds; the Commission's rejection of those recommendations is not part of this appeal.

[13] A consent agreement with South Carolina environmental regulators to remove coal ash from the W.S. Lee plant was not mandated by CAMA or the CCR Rule, but DEC argued this too was a "compliance" cost. (See DEC R pp 1038, 1065; see also the dissent of Commissioner Clodfelter at R pp 1165-66).

Regarding DEC's environmental compliance record for coal ash impacts on surface water and groundwater, Public Staff witness Junis testified that the Company had violated N.C. Gen. Stat. § 143-215.1 by allowing unauthorized seeps, and had violated the 2L Rule extensively with exceedances of groundwater limits for toxic chemicals from ash basins. (DEC T 26 pp 739-40; DEC Doc. Ex. 2043). As a result of the many environmental violations caused by DEC's coal ash management, and due to the unusual nature and large amount of these costs that will not produce any additional electricity, Public Staff witnesses proposed that the costs to comply with CAMA and the CCR Rule, which involves "corrective action" to mitigate current contamination and prevent future contamination of groundwater and surface water, should be shared between ratepayers and DEC shareholders. (DEC R pp 1058-60; DEC T 18 pp 738-42; DEC T 22 pp 70-84).

DEC witnesses asserted that coal ash cleanup costs should be recovered entirely from ratepayers because they were reasonably incurred to comply with CAMA and CCR Rule. (See DEC T 14 pp 100-01, 131-34; DEC Doc. Ex. 3574-75). They testified that the Company's coal ash management practices had been consistent with the applicable laws,

regulations, and permit requirements over time. (DEC T 14 pp 102, 114). The coal ash costs included work to remediate ash basin environmental impacts that arose before CAMA and the CCR Rule – cleanup costs that Public Staff witness Junis testified would have been incurred even without CAMA and the CCR Rule because they were necessary to correct violations of North Carolina's long-established 2L Rule. (DEC T 26 pp 731-34, 753).

Like DEP, DEC was named in lawsuits filed by environmental organizations and DEQ before CAMA and the CCR Rule were enacted. (DEC Doc. Ex. 1993; DEC T 22, pp 703-17). Those lawsuits alleged environmental violations caused by leakage of contaminants from DEC's coal ash basins, including unauthorized discharges from ash basins to surface waters (in violation of N.C. Gen. Stat. § 143-215.1) and exceedances of regulated chemicals in groundwater beyond the compliance boundaries of the coal plants (in violation of the 2L Rule). The lawsuits alleged violations at every DEC coal-fired power plant in North Carolina. (Id.). The alleged violations preceded the coal ash spill at the Dan River plant and continued thereafter. DEC also pleaded guilty to federal criminal charges in connection with negligent coal ash

management at its Dan River and Riverbend plants for Federal Clean Water Act violations that existed before the enactment of CAMA and the CCR Rule. (DEC Doc. Ex. 2108-2161; DEC T 22 pp 716-17).

Public Staff witness Junis testified that the existence of coal ash-related environmental violations was established independently of the lawsuit allegations. According to his testimony, the independent evidence of environmental violations from DEC's coal ash basins is confirmed by (1) 3,091 groundwater violations shown by data from DEC's own groundwater monitoring wells, as reported to DEQ; (2) DEC's admission of unpermitted seeps in the Joint Factual Statement appended to DEC's guilty plea in federal court; and (3) findings in the environmental audits performed for the court-appointed monitor as a condition of federal probation. (DEC T 26, pp 700, 718, 739-40; DEC R p 1058; DEC Doc. Ex. 816, 2043-45).

In the rate case, DEC proposed to recover its coal ash costs in two different ways: one approach for costs incurred in the years leading up to its general rate case, and another approach for estimated future costs. (DEC R pp 1032-33). First, DEC proposed to recover from its North Carolina retail customers $566.8 million of coal ash costs incurred

between 1 January 2015 and 31 December 2017. (Id.). Instead of writing those costs off to expense when incurred, DEC requested they be deferred, for regulatory accounting purposes, to a regulatory asset. (DEC R p 27). This accounting treatment would allow the Company to request, and other parties to challenge, recovery of these coal ash costs in its next general rate case. If recovery of these costs were allowed by the Commission in the next general rate case, DEC would include in rates an expense for amortization of the regulatory asset. DEC's deferral request was supported by the Public Staff (DEC R pp 86-87), and ultimately approved by the Commission (DEC R p 1031). The deferral decision by itself did not include a determination of whether the costs were prudently and reasonably incurred, or whether equitable sharing was appropriate versus allowing a return on the unamortized balance of deferred costs. Those questions were left for consideration in the rate case docket.

In the rate case, DEC requested that the past coal ash costs, which were deferred to a regulatory asset, be recovered in rates as an expense amortized over five years, along with the Company's authorized overall rate of return applied to the unamortized balance. (DEC R pp 1032-33). DEC's proposed amortization of the $566.8 million over five years, plus a

return on the unamortized balance, would result in an annual amount of $139.3 million charged to North Carolina retail ratepayers. (DEC Doc. Ex. 5376).

DEC further proposed to recover in rates an expense amount to pay for its anticipated future coal ash costs – the balance of the estimated $2.6 billion. (DEC R p 1033; DEC Doc. Ex. 3576). This "run rate" for future coal ash costs would be trued up in future rate cases so that the Company would not over- or under-recover its actual coal ash expenditures. (DEC R p 1033). The run rate would allow recovery of future coal ash costs in the same timeframe that they were incurred, rather than the other options of (1) deferring them for potential recovery in future rate cases, or (2) writing them off when incurred, without a further increase in rates.

The Company's proposed run rate for future coal ash costs would have resulted in an additional annual amount charged to North Carolina retail ratepayers of $201.2 million. (DEC Doc. Ex. 5376). When amortization of past coal ash costs is added to the run rate for future coal ash costs and to certain legal costs for coal ash environmental litigation, the total rate increase requested in the present case by DEC, solely

attributable to coal ash costs, was approximately $342 million per year. (DEC Doc. Ex. 5376).

In contrast, the Public Staff recommended that the Company be allowed to recover only approximately $18.9 million per year for coal ash costs. (Id.). The significant difference between the Company's request for recovery of coal ash cost and the Public Staff's recommendation was the result of (1) disallowances recommended by Public Staff witnesses Garrett, Moore, and Junis based on unreasonableness of certain coal ash expenditures, (2) the net effect of various accounting adjustments recommended by witness Maness, (3) witness Maness's recommendation for an amortization period of twenty-seven years (later reduced to twenty-five years based on the rate of return stipulated by DEC and the Public Staff) with no return on the unamortized balance, and (4) witness Maness's recommended denial of the "run rate" for recovery of estimated future coal ash costs. (See T 22 pp 65-66; DEC Doc. Ex. 5376). The purpose of the longer amortization period, with no return on the unamortized balance, was to effectuate a 49%-51% "equitable sharing" of the coal ash costs between ratepayers and DEC investors. (DEC R p 1096-97). This amounts to a sharing of costs because, although investors would

ultimately recover from ratepayers their funds advanced to pay for coal ash costs, investors would have lost the time value of money (i.e., no return) during that extended recovery period. (See DEC T 18 pp 82-83).

The DEC Order accepted the Public Staff's recommendation to deny the "run rate" proposed by DEC to recover future coal ash costs in current rates. However, this reduction to DEC's request only postpones consideration of recovery of future coal ash costs to future rate cases rather than disallowing those costs. (See DEC R pp 1146-47). The imprudence disallowances proposed by witnesses Garrett, Moore, and Junis for unreasonable costs were all rejected in the DEC Order. (DEC R pp 1118-35). The DEC Order also rejected the proposal of Public Staff witnesses Junis and Maness for a 51%-49% equitable sharing of coal ash costs between the Company and its customers. (DEC R pp 1135-36). The DEC Order states that the Commission rejected equitable sharing of DEC coal ash costs "on the same basis" as it rejected equitable sharing in the DEP Order. (DEC R p 1097).

The DEC Order did impose a one-time $70 million mismanagement penalty based on DEC's guilty plea to criminal negligence for certain coal ash management deficiencies. (DEC R pp 1146-47). The $70 million one-

time mismanagement penalty imposed by the DEC Order mathematically means shareholders will pay 2.7% of the estimated $2.6 billion in coal ash costs. Absent any prudence disallowances by the Commission in future cases, the result of the DEC Order is that consumers will have to pay for the remaining 97.3% of coal ash costs, or $2.53 billion.[14]

ARGUMENT

I. OVERVIEW

The DEP and DEC Orders contain reversible error because of the Commission's conclusion that coal ash costs are "property used and useful"; its shifting rationales that create confusion as to the real basis for its decision to allow recovery of coal ash costs; its misinterpretation of case law with respect to the Commission's authority to deny a return on coal ash costs; and its failure to engage in weighing of certain material evidence. These errors are reversible under N.C. Gen. Stat. §§ 62-94 and 62-79 for the reasons summarized below:

[14] These numbers are consistent with the rounded figures noted in the dissent of Commissioner Brown-Bland. (DEC R p 1222).

(i) The Commission concluded that all coal ash costs are "property used and useful" within the meaning of N.C. Gen. Stat. § 62-133(b)(1), and then later stated that there is no need to determine if coal ash costs are "used and useful," and that it was not deciding if the costs were "used and useful," and then that it was deciding only some costs were "used and useful." These contradictions leave the basis for the Commission's decision unclear.

(ii) The Commission stated that if it were in error in concluding that coal ash costs are "used and useful," then it would reach the same outcome in its discretion. However, the Orders lack sufficient findings for an alternative basis for decision resting on an exercise of discretion. Discretion must be supported by adequate findings under N.C. Gen. Stat. § 62-79(a). "Discretion" is not legally proper as an unsupported hedge to circumvent appellate review in the event that the expressed "used and useful" reasoning of the Commission is rejected.

(iii) Where the record evidence shows the nature of many of the coal ash costs to be operation and maintenance ("O&M")

expenses, such as excavation and transportation costs, the Commission's decision to classify all such costs as "property used and useful" violates N.C. Gen. Stat. § 62-133(b).

(iv) The Commission erred by labeling coal ash costs as "working capital" on the basis of testimony from one Company witness, who relied entirely on the reasoning given by a second Company witness, where the second witness testified that coal ash costs are "utility plant" instead of working capital.

(v) The Orders err by classifying coal ash costs as, or "like," "working capital" when the record evidence shows that coal ash costs do not meet the definition of "working capital."

(vi) The Commission erred by deeming coal ash costs to be "property used and useful" under N.C. Gen. Stat. § 62-133(b)(1) simply because Asset Retirement Obligation ("ARO") accounting created an accounting "asset" related to the costs, or because deferral created a regulatory asset. The accounting labels do not displace the statutory meaning of "property used and useful," which under North Carolina law cannot include coal ash operating expenses.

(vii) The Public Staff proposed an equitable sharing of coal ash costs on the basis that coal ash costs are not entitled to a return as a matter of law. In concluding that coal ash costs are entitled to a return as "used and useful," and thereby rejecting equitable sharing, the Commission misstated the Public Staff's evidence. While the Commission has the authority and duty to weigh the evidence, it may not lawfully reject the Public Staff's position by misstating the evidence for that position.

(viii) The Orders rely exclusively on the prudence and "used and useful" tests of N.C. Gen. Stat. § 62-133(b) for recovery of and a return on the costs of coal ash remediation. This analysis errs by failing to consider "other material facts of record" under N.C. Gen. Stat. § 62-133(d), such as the Companies' culpability for environmental violations.

(ix) The Orders rely on an incorrect analysis of case law to conclude that an equitable sharing of coal ash costs between customers and shareholders would likely not be legally sustainable.

(x) The Orders refuse to even weigh any evidence of environmental violations, other than violations admitted by the Companies or found by other tribunals. In doing so, the Commission erred by failing to evaluate or weigh substantial competent evidence presented at the hearings.

(xi) The Commission erroneously concluded that CAMA would have required the installation of groundwater extraction wells and groundwater treatment at the Sutton and Belews Creek plants even in the absence of any environmental violations, so the costs are not related to environmental violations.

II. STANDARD OF REVIEW

The applicable standard of review is set forth in N.C. Gen. Stat. § 62-94(b):

> So far as necessary to the decision and where presented, the court shall decide all relevant questions of law, interpret constitutional and statutory provisions, and determine the meaning and applicability of the terms of any Commission action. The court may affirm or reverse the decision of the Commission, declare the same null and void, or remand the case for further proceedings; or it may reverse or modify the decision if the substantial rights of the appellants have been prejudiced because

the Commission's findings, inferences, conclusions or decisions are:

(1) In violation of constitutional provisions, or

(2) In excess of statutory authority or jurisdiction of the Commission, or

(3) Made upon unlawful proceedings, or

(4) Affected by other errors of law, or

(5) Unsupported by competent, material and substantial evidence in view of the entire record as submitted, or

(6) Arbitrary or capricious.

As discussed below, the Orders are affected by errors of law, are in some respects unsupported by competent, material and substantial evidence in view of the entire record, and as a result of being unsupported by evidence are in part arbitrary and capricious.

III. THE CONCLUSION THAT COAL ASH COSTS ARE "USED AND USEFUL" AND ENTITLED TO RATE BASE TREATMENT CONSTITUTES REVERSIBLE ERROR

A. "USED AND USEFUL" HAS SPECIFIC STATUTORY MEANING THAT CREATES A LEGAL ENTITLEMENT TO A RETURN ON COSTS

N.C. Gen. Stat. § 62-133(b) establishes the basic public utility ratemaking formula to be used by the Commission.

> This statute requires the Commission to determine the utility's rate base (RB), its reasonable operating expenses (OE), and a fair rate of return on the company's capital investment (RR). These three components are then combined according to a formula which can be expressed as follows:
>
> (RB X RR) + OE = REVENUE REQUIREMENTS

State ex rel. Utilities Com. v. Thornburg, 325 N.C. 463, 467 n.2, 385 S.E.2d 451, 453 (1989) ("Thornburg I").

The statutory meaning of the terms "rate base," "property," "used and useful," "operating expense," and "rate of return" are discussed below because they are relevant to the Commission's decisions on recovery of coal ash costs. The DEP and DEC Orders include coal ash costs in rate base, which means customers must pay not only for the costs, but also a return on the unamortized balance of those costs. (See DEP R p 674; DEC R p 1116).

Rate base is defined in N.C. Gen. Stat. § 62-133(b)(1) as "the reasonable original cost . . . of the public utility's property used and useful . . . less that portion of the cost . . . recovered by depreciation expense." This wording requires several determinations by the Commission.

First, the Commission must determine whether costs are "reasonable." For example, ratepayers should not have to pay for costs to

the extent they were over-priced, inappropriate, or imprudent based on what was known or should have been known at the time the costs were incurred. The costs of unlawful utility activity, whether capital or expense, may also be excluded from rate recovery. See State ex rel. Utilities Com. v. Public Staff, 317 N.C. 26, 40-41, 343 S.E.2d 898, 907-08 (1986). Imprudent or inappropriate costs, including certain costs resulting from unlawful activity, would not be "reasonable" for ratemaking purposes under N.C. Gen. Stat. § 62-133(b)(1).

The applicability of the statutory words "property" and "used and useful" must also be determined by the Commission. "Property" has been described in general terms as "the value of, or investment in, plant and equipment 'used and useful' in providing a particular utility's services." Charles F. Phillips, Jr., The Regulation of Public Utilities 177 (1993). "Property" under N.C. Gen. Stat. § 62-133(b)(1) is different from "operating expenses" under N.C. Gen. Stat. § 62-133(b)(3), and the difference matters because only "property" is entitled to a return. Examples of "property" include brick and mortar buildings, generators and turbines, poles, meters, and conductors such as transmission, distribution, and service wires that carry electricity from generators to

customers. "Property" primarily means "utility plant" that consists of long-lived physical assets used to provide utility service, and it is largely funded by capital investment.

The DEP Order correctly points out that "working capital"[15] also has been judicially accepted as an intangible form of "property" that is part of rate base under N.C. Gen. Stat. § 62-133(b)(1). (DEP R pp 673-74). Thus, "property" that is entitled to a return under N.C. Gen. Stat. § 62-133(b)(4) consists of both utility plant (long-term physical assets) and working capital, but it does not include operating expenses, which fall under N.C. Gen. Stat. § 62-133(b)(3) and have no statutory right to a return.

Once the Commission determines that costs were expended for "property," and were "reasonable," it must further determine if that property is "used and useful." Utility property is not "used" if, for example, it is not in service for the production or delivery of utility

[15] "Working capital" in this context is money provided by investors and used for salaries, materials and supplies, other current expenses and certain other cash outlays which must be paid by the utility until reimbursement is obtained from customers. See State ex rel. Utils. Comm'n v. Virginia Elec. & Power Co., 285 N.C. 398, 414-15, 206 S.E.2d 283, 295-96 (1974) ("VEPCO"). (See also DEC T 12 pp 49-51).

service. See State ex rel. Utils. Comm'n v. Carolina Water Serv., 335 N.C. 493, 507-08, 439 S.E. 127, 135 (1994) ("CWS"). In addition, utility plant is not "useful," for example, to the extent it is excess or overbuilt for the needs of current customers and thus is greater than necessary to provide service even if it is being used. See State ex rel. Utils. Comm'n v. Public Staff, 333 N.C. 195, 204, 424 S.E.2d 133, 138 (1993) ("Carolina Trace"); State ex rel. Utils. Comm'n v. Thornburg, 325 N.C. 484, 496-98, 385 S.E.2d 463, 469-71 (1989) ("Thornburg II").

After the reasonable dollar cost of property that qualifies for rate base is decided, the Commission must decide the fair rate of return to be applied to the rate base. N.C. Gen. Stat. § 62-133(b)(4). Rate of return is sometimes called the utility's "profit," but it is more accurate to describe it as the cost of financing the utility's capital investment. An electric utility may finance its assets by issuing bonds (debt financing) for which it must pay interest, and by issuing stock shares (equity financing) for which it is expected to pay a fair return.[16] The combined return for debt

[16] A utility may also finance its business through retained earnings, and through contributions in aid of construction. These sources of financing are not investor-supplied, and therefore are not added to rate base.

and equity is the weighted average cost of capital, which the Commission establishes for regulatory purposes as the overall authorized rate of return to be used in setting rates. The overall rate of return authorized by the Commission should be set at a level commensurate with the level of investment risk, thereby allowing the utility to compete in capital markets for financing on reasonable terms. (DEP R pp 536-40, 556; DEC R pp 857-61, 880). The ultimate goals of a fair rate of return are to (1) allow the utility to fund safe, reliable, and adequate electric service, and (2) not require ratepayers to pay a higher return than necessary for the utility to compete in capital markets for financing at a rate commensurate with the company's risk. (Id.).

The next major component in the ratemaking formula is the amount of reasonable utility operating expenses pursuant to N.C. Gen. Stat. § 62-133(b)(3). Operating expenses are largely made up of (a) payments for goods or services that are consumed at or close to the time payment is made, (b) the depreciation of used and useful property at a rate corresponding to its useful life, and (c) income tax expense, as opposed to the cost of purchasing or constructing long-lived assets. As one treatise explains at a high level: operating costs include "operating

expenses (wages, salaries, fuel, maintenance, advertising, research and charitable contributions) plus annual charges for depreciation and operating taxes." Phillips, supra, at 177. A DEP witness similarly described operating expenses as "depreciation and amortization expense, operations and maintenance expense ("O&M"), fuel expense, taxes, and other expenses…." (DEP T 6 p 103). Operating expenses are presumed to be recovered through operating revenues at approximately the same time as when the operating expenses are incurred, so there is no need for a return to compensate for opportunity cost or time value of money on such expenses.[17] Accordingly, N.C. Gen. Stat. § 62-133 does not provide for a return on operating expenses.

There is one exceptional ratemaking treatment for operating expenses that is relevant to coal ash costs. Operating expenses that are extraordinary in nature and magnitude may be allowed the extraordinary regulatory treatment of deferral for recovery through

[17] To the extent there is a lag between when an expense is incurred (e.g., at the beginning of each month) and when revenue is received to cover that expense (e.g., at the end of the month), cash working capital makes the utility whole with respect to the time value of investor-supplied funds that pay for the expenses until revenues are received from ratepayers. (See DEC T 12 pp 49-51).

amortization at a later date. The normal presumption is that expenses are deemed to be recovered through revenues received, at then-existing rates, when the expenses are incurred; therefore, rates should not be increased prospectively to recover unusual past expenses.[18] Deferral overrides this presumption and allows an increase in future rates to recover a specific past expense. (See DEC R p 1117).

The extraordinary nature and magnitude of coal ash costs was the basis for DEP's and DEC's deferral petition and the Public Staff's support of that petition. (DEP R pp 14-29, 617). Although N.C. Gen. Stat. § 62-133(b) does not provide for a return on operating expenses, one interpretation of N.C. Gen. Stat. § 62-133(d) is that the Commission has

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[18] For example, the Commission ruled in Dominion North Carolina Power's 2012 rate case:

> DNCP's request for deferral, amortization, and prospective recovery of certain costs associated with Bear Garden was appropriately submitted as an exception to the general rule that "costs incurred in providing service are deemed to have been recovered through rates in effect at the time the service was rendered."

Order Granting General Rate Increase, 21 December 2012, Docket No. E-22, Sub 479, p 13. Accessible at https://starw1.ncuc.net/NCUC/ViewFile.aspx?Id=de821a8e-e3f4-432f-98b6-0b57144f347f

a limited discretion to award a return, or not, on deferred costs, where justified by material facts of record.[19] See Thornburg I, 325 N.C. at 478, 385 S.E.2d at 459. This discretion may arise because ratemaking is not limited just to the formula is encompassed within N.C. Gen. Stat. § 62-133(b); all of N.C. Gen. Stat. § 62-133 is applicable to setting rates for regulated utilities. Notably, N.C. Gen. Stat. § 62-133(d) provides that rates may be adjusted on the basis of factors beyond the formula prescribed by N.C. Gen. Stat. § 62-133(b). See State ex rel. Utilities

[19] However, in Thornburg II the Court ordered $389 million of deferred nuclear abandonment costs to be removed from rate base and treated like other plant cancellation costs, which were amortized as an expense with no return. Thornburg II, 325 N.C. at 497-98, 385 S.E.2d at 470-71. The Court did not give the Commission a choice on whether to award a return on the unamortized balance under N.C. Gen. Stat. § 62-133(d). Similarly, the Court ruled in 1993 that: "There is no statutory authority anywhere within Chapter 62 that permits the Commission to include in rate base any completed plant (as opposed to construction work in progress) that is not "used and useful". . . ." Carolina Trace, 333 N.C. at 202, 424 S.E.2d at 137. Less than a year later, the Court held: "Costs for abandoned property may be recovered as operating expenses through amortization, but a return on the investment may not be recovered by including the unamortized portion of the property in rate base." CWS at 508, 439 S.E.2d at 135. The Public Staff interprets N.C. Gen. Stat. § 62-133(d) as giving the Commission discretion to award or deny a return on unamortized costs notwithstanding those cases because the extent of N.C. Gen. Stat. § 62-133(d) discretion does not appear to have been an issue directly before the Court in those cases.

Comm'n v. Carolina Util. Customers Ass'n, 348 N.C. 452, 458-459, 500 S.E.2d 693, 698-699 (1998) ("CUCA I").

Where coal ash costs are "operating expenses," they may be deferred to a regulatory asset by order of the Commission, instead of being written off to expenses when incurred. The regulatory asset may be recovered as an amortization expense in the utility's next rate case. A return on the unrecovered (unamortized) balance of the deferred expenses may also be recovered in rates, depending on one's interpretation of Commission discretion under N.C. Gen. Stat. § 62-133(d).

On the other hand, if past coal ash costs are not deferred "operating expenses" under N.C. Gen. Stat. § 62-133(b)(3), then they may not be recovered in rates unless they qualify as "property used and useful." If the costs are "property used and useful," they become part of rate base and are entitled to a return under N.C. Gen. Stat. § 62-133(b)(1) and (4). Thus, an erroneous conclusion that coal ash costs are "used and useful" would result in those costs going into rate base and earning a return in violation of law.

In sum, N.C. Gen. Stat. § 62-133(b) draws a distinction between capital investment in "property used and useful" that is statutorily entitled to a return under N.C. Gen. Stat. § 62-133(b)(4), and "operating expenses" for which the statute does not provide a return. As a result, N.C. Gen. Stat. § 62-133(b) requires the Commission to include in rates a return on coal ash costs only if those costs qualify as "property used and useful."[20] In contrast, if coal ash costs are "operating expenses," they would not be entitled as a matter of law to earn a return for ratemaking purposes.

B. THE DEP ORDER CONCLUDES THAT COAL ASH COSTS ARE "USED AND USEFUL" AND THEREFORE ENTITLED TO A RETURN; THE DEC ORDER ADOPTS THE SAME REASONING

DEP and DEC asserted that their coal ash costs were "property used and useful" and therefore should receive a return as rate base. (See,

[20] The legal requirement of a return on costs of "property used and useful," under N.C. Gen. Stat. § 62-133(b)(1) and (4), still leaves the Commission with authority to adjust rates under N.C. Gen. Stat. § 62-133(d) where justified by "other material facts of record." N.C. Gen. Stat. § 62-133(d) is not empty surplusage; if the General Assembly had intended to limit rate-setting only to recovery of a fair rate of return on rate base and operating expenses, there would be no need for N.C. Gen. Stat. § 62-133(d).

e.g., DEP T 20 p 142; DEC T 12 errata pp 156-19 to 156-20; DEC R pp 1041-42). The DEP Order accepts the Company view on this issue. (DEP R pp 667, 674).[21] The DEC Order expressly adopted its reasoning from the DEP Order. (DEC R pp 1033, 1097).

Finding of Fact No. 54 is the first place the DEP Order concludes that coal ash costs are "used and useful":

> 54. On a North Carolina retail jurisdiction basis, the actual coal ash basin closure costs DEP has incurred (netted against the amount already included in the Company's rates following its last rate case) during the period from January 1, 2015, through August 31, 2017, amount to $241,890,000. DEP is entitled to recover these coal ash basin closure costs, less a disallowance of $9.5 million, for a total amount of $232,390,000. The actual coal ash basin closure costs incurred by DEP, less the $9.5 million, are known and measurable, reasonable and prudent, and used and useful in the provision of service to the Company's customers. DEP is entitled to recover these costs through rates. Further, DEP proposes that these costs be amortized over a five-year period and that it earn a return on the unamortized balance. Under normal circumstances, the five-year amortization period proposed by the Company is appropriate and reasonable, and absent any management penalty should be approved, and under normal circumstances the Company is entitled to earn a return on the unamortized balance.

[21] However, the Commission also equivocates on whether coal ash costs are "property used and useful" entitled to a return, versus the return being a discretionary decision. See part III. C. of this brief.

(DEP R pp 497-98) (emphasis added) (footnote omitted). Although this is labeled as a "finding," it actually is a legal conclusion as the Commission is deciding the statutory "used and useful" status of coal ash costs under N.C. Gen. Stat. § 62-133(b)(1).[22]

Following its summary "Findings of Fact," the Order sets forth "Evidence and Conclusions" in support of the findings. Among the detailed "Evidence and Conclusions" sections, the Order states:

> One basis cited by the AGO [Attorney General's Office] for denying a return is the AGO's contention that DEP's CCR [Coal Combustion Residuals, or coal ash] expenditures do not result in used and useful utility plant. The Commission fully addresses the issue later in this Order, and concludes that DEP's CCR expenditures do result in property that is used and useful.

(DEP R p 620) (emphasis added.)

[22] The distinction between findings of fact, conclusions of law, "ultimate" facts, and mixed findings of fact and conclusions of law is not always clear. In certain utility cases the Court has held that a Commission determination is a legal conclusion if it involves application of principles of law. See State ex rel. Utilities Comm'n v. Carolina Util. Customers Ass'n, 348 N.C. 452, 462, 500 S.E.2d 693, 701 (1998); State ex rel. Utilities Com. v. Eddleman, 320 N.C. 344, 351, 358 S.E.2d 339, 345-346 (1987); Rutherford Elec. Mbrshp. Corp. v. Time Warner Entertainment-Advance/Newhouse P'ship, 240 N.C. App. 199, 215, 771 S.E.2d 768, 779 (2015); State ex rel. Utilities Com. v. Mackie, 79 N.C. App. 19, 29-30, 338 S.E.2d 888, 895-96 (1986). Relevant excerpts from these cases are set forth in the Appendix to this brief.

> The Commission finds that the [deferred coal ash] costs are known and measurable, when viewed in isolation and without regard to the broader context of DEP's admission of criminal negligence in the management of its CCR activities, and the cost increases arising from the CAMA schedule, the costs, with noted exceptions, were reasonably and prudently incurred, and are used and useful in the provision of service to customers.
>
> . . . .
>
> In summary, the Commission determines that but for admitted mismanagement and its being a contributing factor to CAMA, its coal ash basin closure costs actually incurred over the period from January 1, 2015 through August 31, 2017 are (a) known and measurable, (b) reasonable and prudent, and (c) used and useful, and, as such, that it is entitled to recover those costs in rates. DEP has further shown that its proposal that these costs be amortized over five years, with a return on the unamortized balance, would have been reasonable.

(DEP R pp 666-67) (emphasis added).

> There are, however, significant distinctions between the 1987 DEP Rate Case/Thornburg I and the present case. First and foremost, this case does not involve "abandoned plant" or cancellation costs. Rather, it involves "reasonable and prudent" and "used and useful" expenditures by the Company, similar to the Commission's determination in the 2016 DNCP Rate Order. As such, the authority the Public Staff relies upon to support its "equitable sharing" concept does not support the exercise of discretion as the Public Staff maintains.

(DEP R p 670) (emphasis added). These quotations show how the DEP Order expressly and repeatedly concluded that DEP's deferred coal ash costs are "property used and useful" within the meaning of N.C. Gen. Stat. § 62-133(b)(1).

If that were a correct conclusion, the deferred coal ash costs would be entitled to a return as a matter of law, pursuant to N.C. Gen. Stat. § 62-133(b)(4).[23] Thus, it is not surprising that the DEP Order concludes -- erroneously -- that the deferred coal ash costs are "entitled" to a return under normal circumstances (i.e., when there is no mismanagement penalty). (DEP R pp 497-98, 622, 667). Under N.C. Gen. Stat. § 62-133(b)(1) and (4), once the Commission concluded that coal ash costs were "used and useful," it had no legal choice but to award a return on those costs under the ratemaking formula of N.C. Gen. Stat. § 62-133(b).

[23] However, even if coal ash costs were "property used and useful" under N.C. Gen. Stat. § 62-133(b), and therefore entitled to a return, the Commission could still adjust rates under N.C. Gen. Stat. § 62-133(d) if justified by "other material facts of record," such as the Companies' culpability for environmental violations caused by their coal ash disposal. The Commission has in effect adopted this concept with its mismanagement penalty (see DEC R p 1104; DEP R p 685), although it erred by not considering environmental violations beyond those identified in the federal plea agreement. See part V of this brief.

After the Public Staff appealed the conclusion in the DEP Order that coal ash costs were "used and useful," the Commission was far more limited in its use of the words "used and useful" in the DEC Order. The DEC Order purported to award a return on coal ash costs as a decision within the Commission's discretion. (DEC R pp 1099-1100). However, at the same time, the DEC Order expressly relied on the same reasoning as the DEP Order, which adopted the Company's "used and useful" argument instead of the Public Staff's proposal: "The same standard applies in this case." (DEC R p 1033). Likewise, "The Commission chose not to accept the 'equitable sharing' concept in the 2018 DEP Case, and does so again, on the same basis." (DEC R p 1097) (emphasis added).

This reliance in the DEC Order on the reasoning from the DEP Order is perfectly understandable: with the coal ash issue being decided in the two rate cases only a few months apart, the Commission was not about to come to different legal conclusions on the same issue. Given that the Commission concluded in the DEP Order that coal ash costs were "used and useful," and the DEC Order expressly adopted the reasoning of the DEP Order, it is apparent that the DEC Order in substance relies on the same erroneous "used and useful" conclusion.

C. THE COMMISSION ERRED BY STATING CONTRADICTORY CONCLUSIONS ON "USED AND USEFUL"

The DEP Order also states: "the Commission determines that the debate between the parties on this issue [whether coal ash costs qualify as "property used and useful"] is not one the Commission is required to resolve." (DEP R p 675; see also DEP R pp 951-52). This part of the DEP Order contradicts the multiple times the Order does resolve the issue by concluding that coal ash costs are "used and useful."

For example, the Commission concluded that its authority to deny a return on deferred costs, as set out in Thornburg I, did not apply to coal ash costs because the abandoned nuclear plan costs in Thornburg I were not "used and useful," whereas the coal ash costs – in the Commission's opinion – are "used and useful." (DEP R p 670). The Commission thus decides in one place that the "used and useful" issue need not be resolved, and that it was acting in its discretion to award a return, while concluding in another place that coal ash costs are "used and useful" so the Commission must reject witness Maness's position that it has any discretion to deny a return. This type of contradiction is reversible error,

for the internal inconsistency means the real basis for the decision is not apparent in the DEP Order.

The DEP Order provides that the DEP deferred coal ash costs, as used and useful property, are "entitled" to a return (DEP R p 674), and also that such costs are "eligible" for a return (DEP R p 675). Seeking to reconcile this apparent contradiction, the Public Staff posited in a Motion for Clarification that "entitled" meant a return on coal ash costs was a legal right, whereas "eligible" could mean that a return was within Commission discretion. (DEP R pp 938-44). The Public Staff's Motion for Clarification asked the Commission to clarify what it meant when it described coal ash costs as both "entitled" to and "eligible" for a return. (Id.).

In its DEP Order on Motion for Clarification, the Commission did not deny that the DEP Order stated coal ash costs were entitled to a return as "property used and useful." Instead, it in effect stated those words did not mean what they said:

> This is a misinterpretation of the Commission's order when viewed in the context of the entirety of the order. The holding of the order is that but for a management penalty, the Commission in its discretion would have allowed amortization of historical deferred CCR costs over five years with full return on the unamortized

> balance, but to implement the penalty, the return is to be reduced by $30 million.
>
> . . . .
>
> In the context of the order taken as a whole, the Commission does not use the word "entitled" in contradistinction with the word "eligible" as the Public Staff reads it, nor, as the Commission stated in its February 23, 2018 order, does the Commission find it necessary to resolve the dispute between DEP and the Public Staff as to whether the deferred CCR costs at issue in this case "may" vs. "must" be added to rate base as a matter of law and earn a return. Such determination is not necessary in establishing rates in this case.

(DEP R pp 951-52) (emphasis in original) (footnote omitted).

The actual "context of the order taken as a whole" is that the Commission has offered contradictory reasons for its decision to award DEP a return on coal ash costs. Having repeatedly concluded that coal ash costs were "used and useful" (e.g., DEP R p 674), the Commission then backtracks by stating that it was not deciding if coal ash costs must be added to rate base as a matter of law. (DEP R pp 675, 951-52). Having repeatedly concluded that coal ash costs were "used and useful," which creates a legal entitlement to a return, the Commission then in substance denies it has decided that coal ash costs are "used and useful" and legally entitled to a return.

A return on "reasonable" coal ash costs is either a legal entitlement, or is legally prohibited, or is a matter within the Commission's discretion. The Public Staff interprets N.C. Gen. Stat. § 62-133(d) as allowing the Commission discretion to award or deny a return on costs that have been deferred to a regulatory asset. In any event, the Commission erred by concluding that coal ash costs are "property used and useful" (entitled to a return) and at the same time concluding that allowing a return is a matter within Commission discretion. These conclusions are mutually exclusive.

The Commission's inconsistency is compounded by its shifting explanation of exercise of its discretion. The DEP Order at one point hedges by stating, "to the extent the Public Staff is correct in its arguments that the Commission has the discretion to accept the Public Staff's equitable sharing remedy, the Commission declines to do so in favor of an alternative remedy addressed below." (DEP R p 669; see also DEP R p 674, n. 29). The "alternative remedy" is a $30 million "cost of service penalty." (See DEP R pp 678-85). There is no logic to this statement, for the cost of service penalty is based on the acts that resulted in the federal criminal plea (id.) rather than the Public Staff's evidence

of separate and more extensive state law violations in support of equitable sharing under N.C. Gen. Stat. § 62-133(d).[24] The "alternative remedy" is no alternative at all, as it remedies a different problem. It represents a failure to address why the Commission would reject the Public Staff's recommended equitable sharing, or some lesser degree of equitable sharing.

At another point the DEP Order presents Commission discretion only as a fallback position in the event that the Court overrules the conclusion that coal ash costs are legally entitled to a return.[25] (DEP R p

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[24] The federal criminal case was based on discharges of coal ash-tainted water to surface waters in violation of the Federal Clean Water Act. (See DEP Doc. Ex. 759-60). In contrast, the Public Staff's equitable sharing position relied heavily on evidence of groundwater contamination caused by coal ash at all seven DEP coal-fired plants in North Carolina, in violation of the North Carolina 2L Rule, as well as other types of violations. (See DEP Doc Ex. 1123).

[25] The DEP Order, at footnote 29, states in pertinent part:

> [T]he Commission, in the event that it is later determined that some portion of the Company's already-incurred coal ash basin closure expense is not "used and useful" within the meaning of G.S. 62-133(b)(1), may nevertheless allow that portion of those costs to be amortized in the same manner as the portion of "used and useful" costs, with the Company earning a return on the unamortized balance. For the reasons stated herein, were the "used and useful" decision the

674 n. 29). This constitutes error for two reasons. First, there are no findings to support the exercise of discretion. The DEP Order just announces it would reach the same result even if it erred in its legal analysis. This is a mechanism to circumvent judicial review; it is not a properly supported exercise of discretion.

Second, it flatly contradicts the subsequent statement in the DEP Order on Motion for Clarification, where the exercise of Commission discretion is presented not as a fallback position, but rather as the Commission's only position:

> The holding of the order is that but for a management penalty, the Commission in its discretion would have allowed amortization of historical deferred CCR costs over five years with full return on the unamortized balance, but to implement the penalty, the return is to be reduced by $30 million.

(DEP R p 951) (emphasis in original). Having rejected an N.C. Gen. Stat. § 62-133(d) equitable sharing of coal ash costs on the flawed legal conclusion that those costs are "used and useful," which would entitle the

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> Commission has reached be found to be in error, the Commission would nevertheless approve the Company's cost recovery proposal in all respects, and would exercise its discretion to achieve that result.

(DEP R p 674, n. 29; emphasis added).

costs to a return under N.C. Gen. Stat. § 62-133(b)(1) and (4), the Commission then attempts to thwart appellate review of its "used and useful" legal conclusion by stating it had not concluded there was an entitlement to a return but instead had approved a return in its discretion.

The DEP Order and Order on Motion for Clarification present inconsistent reasoning for the Commission's decision to award a return on coal ash costs. The Commission's contradictory reasoning means it is not possible to tell from the DEP Order the real basis for decision on this disputed issue. That is reversible error under N.C. Gen. Stat. § 62-79(a) and case law.

N.C. Gen. Stat. § 62-79(a) requires that Commission orders "shall be sufficient in detail to enable the court on appeal to determine the controverted questions presented in the proceedings" and shall include "[f]indings and conclusions and the reasons or bases therefor upon all the material issues of fact, law, or discretion presented in the record . . . ." Case law holds that a Commission order commits reversible error when there is not a logical sequence of evidence supporting findings that in turn support conclusions. For instance, inconsistent or contradictory

findings was one of the grounds for reversal in State ex rel. Utilities Com. v. North Carolina Textile Mfrs. Ass'n, 313 N.C. 215, 220, 328 S.E.2d 264, 268 (1985):

> In Finding of Fact No. 17 the Commission concluded that the CTR [Curtailment Tracking Rate] was outmoded and should be terminated. This finding of fact is supported by competent and material evidence and is binding on appeal. However, the effect of Finding of Fact No. 15 and Finding of Fact No. 17 was an annual revenue increase, at least for the year of 1983, of approximately $4,417,531. That being the case, the Commission was clearly acting under a misapprehension of the facts when it found an annual revenue increase of $1,117,531 to be just and reasonable.

Inconsistency in a Commission order also gave rise to reversal in Carolina Trace, 333 N.C. at 200, 424 S.E.2d at 136:

> The Commission's conclusion that "the connection should be treated as extraordinary property retirement" is not supported by competent, material and substantial evidence in view of the entire record and, in fact, is inconsistent with its finding that "(i)t is possible that the connection to Sanford will be useful to Carolina Trace in some future year . . . ."

And further, "The Commission has simultaneously treated this unused property as rate base and reasonable operating expenses. This is a direct violation of the ratemaking process." Id. at 202, 424 S.E.2d at 137 (emphasis in original).

In summary, the Commission commits reversible error by resting its decision on a jumble of contradictory reasoning: (i) determining that coal ash costs are "used and useful" as a basis for awarding DEP a return on those costs, (ii) rejecting the Public Staff's equitable sharing recommendation as being without legal authority (DEP R p 670) and of doubtful legal sustainability (DEP R p 684) because coal ash costs are "used and useful" unlike the nuclear abandonment costs of Thornburg I, (iii) stating in the DEP Order that if the "used and useful" conclusion is determined to be legal error then the Commission would reach the same result as a matter within its discretion – without explaining the basis for the exercise of such discretion, and (iv) stating in the DEP Order and Order on Motion for Clarification that actually the Commission did not need to resolve the "used and useful" question disputed by the parties because it was awarding a return on coal ash costs as a matter within its discretion, and the word "entitled" in the DEP Order does not mean DEP is entitled to a return. The shifting rationales from the Commission make it impossible to know the

true basis for the decision to deny equitable sharing and allow a return on coal ash costs.

Moreover, the Commission erred when it relied on the "used and useful" nature of coal ash costs as a reason to reject the equitable sharing proposal as not legally sustainable (DEP R p 668, 669, 684), and then later made the contradictory statement that the decision to award a return on coal ash costs is within the Commission's discretion. If the Commission has discretion on whether to award a return on coal ash costs, then the Public Staff's equitable sharing recommendation would indeed be legally sustainable.

The DEC Order initially incorporates the same "used and useful" reasoning as the DEP Order and is likewise inconsistent in subsequently asserting Commission discretion as the legal basis for awarding a return on coal ash costs. For instance, the DEC Order recites the 62-133(b)(1) requirements as the only criteria for including utility costs in rate base, completely ignoring N.C. Gen. Stat. § 62-133(d):

> In the recently-decided DEP rate case (Docket No. E-2, Sub 1142, the 2018 DEP Rate Case, or 2018 DEP Case),

> the Commission's decision summarized cost recovery based upon these principles, and found that for cost recovery the utility must prove that the costs it seeks to recover are "(1) 'known and measurable'; (2) 'reasonable and prudent'; and (3) 'used and useful' in the provision of service to customers." 2018 DEP Rate Order, p. 143. The same standard applies in this case.

(DEC R p 1033; see also pp 1082, 1097). A few pages later the Commission switches reasoning:

> The Commission chooses to exercise its discretion and authority under N.C. Gen. Stat. § 62-133(d) and follow its precedent here – amortize the ARO [Asset Retirement Obligation] costs over five years and authorize a return on the unamortized balance. The Commission will address the lengthy arguments and debate, but determines that by and large the arguments are not particularly germane or dispositive to the Commission's decisions. The Commission will not accept the Public Staff equitable sharing argument primarily because the Commission determines in its discretion that amortization of the deferred ARO costs over 25 years is inequitable and finds inadequate support for a 50-50 or 51-49 sharing versus some other ratio.

(DEC R pp 1099-1100).[26] The inconsistent reasoning in the Orders does not comply with N.C. Gen. Stat. § 62-79; it frustrates appellate review as the real basis for Commission decision-making is not apparent.

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[26] The Companies were required to account for coal ash costs as an "Asset Retirement Obligation." This accounting requirement is explained in the Companies' 21 December 2015 letter to the Commission. (DEP R

D. COAL ASH COSTS ARE NOT "PROPERTY USED AND USEFUL"

Because "property used and useful" is legally entitled to a return, and "operating expenses" are not, the Commission should have determined which coal ash costs fall into each of those statutory categories. Then the Commission should have determined whether any of the deferred coal ash costs that fall into the "operating expenses" category justified a return under N.C. Gen. Stat. § 62-133(d), with sufficient findings to support the exercise of that discretionary decision.[27]

The DEP Order errs because it concludes that all the coal ash costs are "property used and useful," when many of those costs are actually operating expenses. The DEC Order attempts to guard against that error by concluding that "to the extent" coal ash costs are capital expenditures, they are "used and useful"; however, the DEC Order awards a return on all deferred coal ash costs without determining which are "used and useful" capital costs and which are operating expenses. The DEC Order

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pp 3-11). The relationship between ARO accounting and coal ash cost recovery in rates is addressed further in part III. D. 4 of this Brief.

[27] This assumes the Commission has discretion to award a return, or not, on deferred expenses. See footnote 19, supra.

also expressly relies on the reasoning from the DEP Order, which is based on concluding that all coal ash costs are "used and useful." Thus, while the DEC Order recognizes the conceptual distinction between coal ash capital costs and coal ash operating expenses, it fails to quantify that distinction, and it fails to apply the different statutory standards (N.C. Gen. Stat. § 62-133(b)(1) versus N.C. Gen. Stat. § 62-133(b)(3)) to its findings. These errors are discussed in more detail below.

1. MANY OF THE COAL ASH COSTS WERE INCURRED FOR O&M EXPENSES, NOT UTILITY PLANT THAT WOULD BE "PROPERTY USED AND USEFUL"

N.C. Gen. Stat. § 62-133(b) requires that the costs incurred by DEP must be classified as either "operating expense" or "property used and useful" for ratemaking purposes. The nature of the cost normally determines how it should be classified under the statute.

The record evidence shows that coal ash costs are largely in the nature of operating expenses. As operating expenses, they fall under N.C. Gen. Stat. § 62-133(b)(3) rather than N.C. Gen. Stat. § 62-133(b)(1). Consequently, as a matter of law, to a large extent coal ash costs are not "property used and useful" and are not entitled to a return.

The "operating expenses" nature of many of the coal ash costs is demonstrated by substantial evidence in view of the whole record. For instance, the testimony of Company witness Wright, who argued for labeling coal ash costs as "used and useful," is summarized in the DEP and DEC Orders as: "[Wright] noted that these types of expenses have been routinely recovered as a cost of service and included in rate cases, including the reasonable costs associated with operating, maintaining and upgrading environmental equipment." (DEP R p 627; DEC R p 1039). Apart from use of the word "expenses," this sentence is revealing in that it describes "costs associated with operating, maintaining . . . ." While an equipment purchase or upgrade could qualify as "property used and useful," the nature of costs to operate and maintain such equipment would be "operating expenses" under N.C. Gen. Stat. § 62-133(b)(3). To identify operation and maintenance costs as "property used and useful" is legal error – the very words "operating, maintaining" defy a conclusion that such costs are "property" instead of "operating expenses."

The error of calling operational expenses "property used and useful" is noted in the dissent of Commissioner Clodfelter from the DEP Order:

> In my view, costs to dispose of waste products generated from the burning of coal are very plainly operating

> expenses within the meaning of G.S. 62-133(b)(3). Those waste products are not in any sense "property," "plant" or "facilities" comprehended by G.S. 62-133(b)(1). Consider that disposal of these wastes can occur in several ways. They may be sold for beneficial reuse as structural fill, mine reclamation, additive for concrete, or for other uses. They may be removed for permanent disposal offsite in landfills owned by a third party. Certainly none of such disposal methods would involve the Company's "plant" or "facilities." Permanent disposal of the wastes on the Company's own property, in a landfill, or in a properly closed impoundment that was formerly used for wastewater treatment purposes are other methods of disposal of the wastes, but those methods of disposal do not convert the disposal costs from being treated as operating expenses to being treated instead as investment in "plant" or "facilities." I emphasize this point primarily because proper characterization of the costs at issue is, I believe, an important first step in determining how those costs should be allowed and recovered.

(DEP R pp 729-30).

Similarly, in dissenting from the DEC Order, Commissioner Clodfelter observed that:

> From the available evidence I conclude that the costs for which recovery is sought in this case include a significant mixture of costs that are correctly characterized as operating and maintenance expense, and another portion that might be considered investment in capital assets required for basin closure.
>
> . . . .

> . . . . The point of all the foregoing is that the assumption made in the majority order that all of the costs incurred and yet to be incurred are "assets" or are "investments" that are "used and useful" simply cannot withstand a more granular examination and consideration of the specific items of cost and their nature. I believe it is error to conclude that simply because the costs incurred by the Company relate, in some manner, to present or former waste surface impoundments, they therefore constitute expenditures or investments for which a return is authorized by G.S. 162-133(b)(1). Sorting out those costs that represent an investment in "used and useful" plant and equipment from costs that represent either ordinary or extraordinary expenses of operation requires a plant-by-plant, waste unit-by-waste-unit, task-by-task inquiry and evaluation. This the Majority Order does not do, instead lumping all tasks, all waste units, all time periods, and all plants together and allowing a return on the expenditures without further qualification, except only the reduction of that return by $70 million.

(DEC R pp 1201-02).

The amount of coal ash costs that are operational expenses is substantial. As just two examples, Public Staff witnesses Garrett and Moore testified that excavating coal ash and transporting it to third party sites cost DEP $80.5 million more than disposing it in an on-site landfill at the Sutton plant, and $29.3 million more than disposing Asheville plant coal ash at another DEP plant. (DEP R pp 639-40, 658). The cost of excavating and transporting ash is not a cost incurred to acquire or

construct "utility plant." Nor are payments to a third party landfill owner to take DEP and DEC coal ash for permanent disposal in any way creating utility plant for DEP or DEC.

A dissent in the DEC Order notes that almost one-half the DEC coal ash expenditures from 2015-2017 were incurred for just two plants – Dan River and Riverbend. That dissent observes that the roughly $363.5 million spent on coal ash cleanup at those two plants in that time period was primarily for the activities of

> excavation, transport and offsite disposal of ash fill area 1 at the Dan River plant, dewatering ash in the primary and secondary surface impoundments at Dan River, excavation and transport of ash from the ash stack at the Riverbend plant to Roanoke Cement Company and the Brickhaven mine, dewatering the primary and secondary ash basins at the Riverbend plant, and beginning excavation and transport of ash from the primary and secondary ash basins at the Riverbend plant for offsite disposal. I do not believe these activities can be under any reasonable interpretation of G.S. 62-133(b)(1) considered investments in plant or facilities used or useful to provide electric service to present and future customers. They are under any common understanding of the terms, expenses of operating and maintaining the (retired) coal-fired generating plants.

(DEC R p 1201) (footnote omitted). Dewatering, excavation, transport, and offsite disposal at another company's facility are on their face operational activities. While they may have a nexus to DEC's coal ash

basins, as do other operations at the coal plants, these activities do not become long-lived tangible assets (utility plant) just because they are partially conducted at the site of utility plant. (See DEC R 1191).

The Company's own exhibits demonstrate unequivocally that many of the coal ash costs were in the nature of O&M expenses, not "property used and useful." Kerin Exhibit 10 lists costs by plant. (DEP Doc. Ex. 567).[28] Many of the types of costs listed (without dollar amounts) are necessarily operating expenses in nature. According to DEP witness Kerin's Exhibit 10, the $106,975,851 spent on coal ash remediation at the Asheville plant includes expenditures for "excavation, transportation, off-site delivery" of coal ash. (DEP Doc. Ex. 567) The $16,052,310 at the Cape Fear plant and $20,759,183 at the H.F. Lee plant include expenditures for dewatering the coal ash to prepare it for excavation. (Id.). The $6,415,618 expended for the Robinson plant was for engineering work to prepare for excavation. (Id.). At the Sutton plant, the $116,858,895 in coal ash costs included "ash excavation, transportation and off site delivery" as well as dewatering. (Id.). Likewise, $9,120,242

[28] See also Kerin Exhibits 10 and 11, and especially Revised Kerin Exhibit 11, at DEC Doc. Ex. 3574-3685.

was spent at the Weatherspoon plant to prepare for excavation. (Id.). Costs to excavate and transport ash are operational in nature; those costs do not result in the acquisition of "property used and useful." Revised Kerin Exhibit 11 in the DEC case includes ARO cost estimates for "CCP Inspections and Maintenance," "well sampling," "Post-Closure Maintenance," "Ash Processing," "Water Treatment & Management" – categories that on their face are operating expenses - and rather vague categories such as "Duke Costs." (See DEC Doc. Ex. 3645-85). This evidence from DEP belies the claim of DEP witnesses - and the Commission's erroneous determination - that coal ash costs included in its ARO are all "property used and useful."

Furthermore, Kerin Exhibit 10 does not itemize the costs in any detail, so it is not possible to determine exactly which costs are for expenses and which are for utility plant in service. This lack of detail alone means there is not substantial evidence in the record for the Commission to decide that all the coal ash costs are "property used and useful."

Public Staff witness Maness clarified in response to Commission questions that operational types of costs constituted the majority of coal ash costs incurred by DEP:

> Q. All right. Let me go about it this way. My understanding is, and I may be wrong about this, that, by and large, these costs have to do with dewatering, excavation, and removing ash from existing basins to new basins or to cap in place existing basins; am I wrong about that?
>
> A. No. I think that's correct, yes.

(DEP T 19, pp 53-54). Dewatering ash, digging it up, and moving it to a new location may be recoverable as operating expenses under N.C. Gen. Stat. § 62-133(b)(3). However, those activities do not create "property" within the meaning of N.C. Gen. Stat. § 62-133(b)(1), and the Commission's decision that they are all "property used and useful" is therefore legal error.

2. THE COMMISSION ERRED BY USING ONE EXAMPLE OF COAL ASH COSTS AS UTILITY PLANT TO CONCLUDE THAT ALL COAL ASH COSTS ARE UTILITY PLANT

The Commission attempted to justify all coal ash costs as "property used and useful" by using one example to reach a universal conclusion:

> A concrete illustration highlights this issue more clearly. Take, for example, the new coal ash landfill that

> the Company constructed at the Sutton plant. The landfill "went into service in July … [2017], and … [the Company is] placing ash in the landfill today." (Tr. Vol. 20, p. 65.) The Public Staff, through its consultants Garrett and Moore, has no quarrel with the construction of the landfill or its cost, except for the liner chosen, and agrees that the funds expended in constructing this landfill were reasonable and prudent. The Public Staff maintains however that the landfill should have been constructed sooner and so has proposed a disallowance of the cost of off-site transportation and disposal of coal ash from the Sutton plant. The landfill is "used and useful." It consists of liners, for example, that are capital items with service lives in excess of one year. It stores coal ash which itself is a byproduct of electricity generation, and is required to be stored in a landfill by the CCR Rule and/or CAMA. Yet the Public Staff is also saying that because the costs of construction are accounted for in an ARO – as required by GAAP, to which the Company is subject – they are somehow not "used and useful." The Commission rejects this label-driven classification.

(DEP R pp 674-75).

This particular basis for the Commission decision errs by assuming that because a part of coal ash costs are capital in nature, all coal ash costs must be capital and not expenses. This is incorrect, as shown by the evidence discussed above that identifies many of the coal ash costs as expenditures for operational activities such as ash excavation and transportation. An isolated example of a capital cost does not support a universal conclusion that all costs are capital costs.

The Commission is capable of separating costs into capital and expense categories for ratemaking. This is shown in the treatment of costs to restore the electric system after Hurricane Matthew damage:

> Regarding the capital costs, the Commission views storm capital costs as significantly different from incremental O&M storm costs. Unlike the incremental O&M costs, DEP's capital costs will become a part of DEP's rate base, and will become a part of DEP's future depreciation expenses. Based on these factors, and recognizing that cost deferral is an exception to the traditional ratemaking principles applied by the Commission, the Commission finds and concludes that there is not good cause to allow DEP to defer the incremental capital costs of Hurricane Matthew. Therefore, the Commission believes that it is appropriate and reasonable to continue its historical practice of not allowing deferral and amortization of capital costs or carrying costs on the deferral.

(DEP R p 607). It is error for the Commission not to make the same separation of capital costs from operating expenses for coal ash costs. N.C. Gen. Stat. § 62-133(b) requires that utility costs submitted in a rate case be separately classified as either "property used and useful" or as "operating expenses." The DEP and DEC Orders fail to do so for coal ash costs when it treats all such costs as "property used and useful" despite the operating expense nature of many of those costs.

3. COAL ASH COSTS ARE NOT WORKING CAPITAL

At one point, the DEP Order seeks to justify classifying coal ash costs as "property used and useful" by determining they are "working capital." (DEP R pp 672-74). The working capital conclusion is an alternative to (and inconsistent with) concluding that coal ash costs are all "used and useful" by virtue of being utility plant: "[I]t is not necessary that something be classified as 'plant' in order to be properly included in rate base." (Id. at p 673). In this part of the DEP Order, the Commission is clearly deciding that coal ash costs are entitled to a return as a matter of law, not as a matter of Commission discretion:

> As the Company appropriately accounted for coal ash basin closure costs in the working capital section of rate base, and as these funds were investor-furnished, not customer- furnished, VEPCO holds that they are "used and useful" within the meaning of G.S. 62-133(b)(1) in the provision of service. As such, the Company is entitled to earn a return on those funds over the period in which the costs are amortized.

(DEP R p 674) (footnote omitted) (citing State ex rel. Utils. Comm'n v. Virginia Elec. & Power Co., 285 N.C. 398, 206 S.E.2d 283 (1974) ("VEPCO")). This conclusion is not supported by substantial evidence in the record for multiple reasons.

The "working capital" classification is based on DEP witness Bateman's Supplemental Exhibit 1, p 54, which simply labels the coal ash costs incurred from the 1 January 2015 through 31 August 2017 as "working capital" without any explanation or support in her direct testimony. (DEP Doc. Ex. 90). This label by itself is nothing more than a "mere scintilla" of evidence, as opposed to substantial evidence. "Substantial evidence is more than a mere scintilla. It means such relevant evidence as a reasonable mind might accept as adequate to support a conclusion." In re Moore, 308 N.C. 771, 779, 303 S.E.2d 810, 816 (1983) (citations omitted).

In rebuttal testimony, witness Bateman did offer an explanation for her position that past coal ash costs are "working capital" and therefore entitled to a return. Her explanation does not include any reason of her own[29], but instead refers to the reasons provided by DEP witness Wright:

> Witness Maness's fifth and sixth adjustments are to amortize the deferred costs over a 28-year amortization period rather than the Company's proposed five-year amortization period, and to remove the unamortized

[29] Witness Bateman also testified that "The Public Staff's proposal would result in significant cash flow short falls for the Company with no justification." (DEP T 6 p 145). This speaks to financial consequences, not whether the costs are properly classified as "property used and useful" versus "expenses" under N.C. Gen. Stat. § 62-133(b).

> balance from rate base. Witness Maness states, on page 22 of his testimony, that the combination of these two adjustments effectuates the 50/50 sharing proposed by the Public Staff. The Company opposes the concept of sharing proposed by the Public Staff for the reasons set forth in the rebuttal testimony of Company witness Wright.

(DEP T 6, pp 143-44) (emphasis added). However, the reasons set forth in the testimony of witness Wright have nothing to do with classifying coal ash costs as working capital. A word search of the transcripts reveals no testimony by witness Wright that speaks to "working capital." Instead, he repeatedly claims that coal ash costs qualify as "used and useful" because they are related to assets that once were used to produce electricity (and for some of the plants, still are used for electric generation). (See DEP T 13, pp 355, 375-76; DEP T 20, p 142; DEP R pp 629-30, 648-49; DEC R p 1071). Witness Wright characterized the coal ash costs as "required expenditures that relate to utility plant that is still used and useful. . . ." (DEP T 20, p 143) (emphasis added). Similarly, he testified, "I find it hard to believe it's not part of the utility plant, because it's part of the facility for sure." (DEP T 14, p 233) (emphasis added). Utility plant and assets are a different category of "property used and useful" than working capital. Utility plant is not working capital, and

working capital is not utility plant. This is made clear in the DEP Order itself:

> As a matter of law, it is not necessary that something be classified as "plant" in order to be properly included in rate base. Rather, the issue is the source of the funds. In State ex rel. Utils. Comm'n v. Virginia Elec. & Power Co., 285 N.C. 398, 206 S.E.2d 283 (1974) (VEPCO), for example, the Supreme Court held that working capital (which is not "plant") could be included in rate base, so long as it was provided by the utility. . . .

(DEP R p 673) (emphasis added). Thus, the "utility plant" testimony of witness Wright actually contradicts the "working capital" classification used by witness Bateman, while the only reason given by witness Bateman is her reliance on witness Wright's testimony. The DEP Order errs because this is not a question of what weight to give the evidence, but instead an absence of substantial evidence to support the Commission's finding. Where the Commission noted that working capital is not utility plant (DEP R p 673), and DEP witness Bateman's labeling of coal ash costs as "working capital" is based on DEP witness Wright labeling those costs as "utility plant," the Commission's reliance on witness Bateman's "working capital" conclusion collapses into illogic.

As quoted earlier, the DEP Order concluded that coal ash costs belonged in rate base (i.e., are entitled to a return) because they were

"appropriately accounted for" as working capital. (DEP R p 674). The Commission shifted to a different legal conclusion in the DEC Order. It still cited the VEPCO case (DEC R p 1115), but concluded that the coal ash costs either were utility plant (such as new liners for ash basins) or were expenses analogous to working capital:

> Other expenses of a more O&M or general administration variety were incurred yet deferred under the deferral orders of this Commission, meaning that the Company is afforded the opportunity to recover them in rates at a later time. The funds used to pay for those costs were furnished by the Company and its investors, and the costs are eligible for a return on, not merely a return of, those funds, lest its earnings be impaired. In this sense, just like "classic" working capital, these funds are "property" of the Company, used and useful in the provision of electric service to its customers.

(DEC R p 1116) (emphasis added). This shift in legal reasoning to say coal ash costs are "like" the more classic working capital contradicts the DEP Order, which concluded that coal ash costs are working capital.

The DEC Order shift in legal reasoning also contradicts the Commission's statement elsewhere in the DEC Order that it was rejecting equitable sharing (and thereby allowing a return on coal ash costs) "on the same basis" as its DEP Order. (DEC R p 1097).

Classic working capital is entitled to a return under VEPCO. That ruling is expressly limited to "the utility's own funds reasonably invested in such materials and supplies and its cash funds reasonably so held for payment of operating expenses, as they become payable…." VEPCO, 285 N.C. at 414-15, 206 S.E.2d at 295-96. The DEC Order conclusion that coal ash costs are "like" working capital in the restricted sense of being investor-supplied funds is error because (1) it ignores the portion of coal ash costs that are O&M expenses, which under N.C. Gen. Stat. § 62-133(b) are presumed not to be entitled to a return, and (2) the DEP Order's conclusion that coal ash costs are properly classified as "working capital" is not the "same basis" (despite the Commission's statement that it is the same basis) as the DEC Order conclusion that coal ash costs are "like" working capital. Working capital falls under N.C. Gen. Stat. § 62-133(b)(1) and (4), whereas expenses that are "like" working capital only in the sense that they may be paid from investor-supplied funds nonetheless fall under N.C. Gen. Stat. § 62-133(b)(3) and could qualify for a return only upon proper findings and conclusions under N.C. Gen. Stat. § 62-133(d).

Abandoned nuclear plant costs were paid from investor-supplied funds but not allowed a return. The use of investor-supplied funds does not, by itself, mean that an expenditure is entitled to a return as "property used and useful." For coal ash costs to be "like" working capital because they are investor-supplied funds is not sufficient to classify them under N.C. Gen. Stat. § 62-133(b)(1) instead of N.C. Gen. Stat. § 62-133(b)(3).

Another reason why the Commission erred in concluding that past coal ash costs are "property used and useful" as, or like, working capital is that the nature of past coal ash expenditures is incompatible with the definition of "working capital." That is, the evidence fails to support classifying coal ash costs as working capital. The concept stated in simple terms is:

> Working capital — the funds representing necessary investment in materials and supplies, and the cash required to meet current obligations and to maintain minimum bank balances is included in the rate base so that investors are compensated for capital they have supplied to a utility.

Phillips, supra, at 348 (emphasis added). This concept is echoed in the testimony of Public Staff witness Maness in the DEC rate case:

> The deferred coal ash costs are also not truly working capital. In my opinion, this classification by the Company is just a matter of convenience. True working capital is the investment made in materials and supplies, cash, and other similar items <u>to finance and provide for the Company's present and future operations</u>; in other words, to do the work of providing ongoing utility service. Expenses incurred in the past that the Company proposes to recover in the future, such as the coal ash costs in question, have nothing to do with the Company's forward-looking obligation to provide utility service. Normally, it does no harm for the Company to group many disparate items under the heading of working capital; however, one should not mistake the inclusion of the proposed coal ash cost deferred costs in this group for actual evidence that such costs are, in fact, working capital. The Commission is thus under no obligation to include them in rate base or to otherwise allow a return on them to be recovered or accrued.

(DEC T 22 pp 81-82, 163-64) (emphasis added). The basis for determining cash working capital is described by DEC witness Doss:

> Generally, a utility provides service prior to receipt of payment from customers, and there is also a delay in payment for goods and services acquired by the utility. A lead-lag study is used to analyze transactions throughout the year to determine the number of days between the time services are rendered and payment is received (revenue lag), and the number of days between the time expenditures are incurred and payment is made for such services (expense or payment lead). In some instances, revenue may be received prior to payment for the related expense *(i.e.,* a net lead or alternatively a negative net lag). The revenue lag is compared to the expense lead and the net lag is applied to each category

> of cost of service to determine the DE Carolinas' cash working capital requirements.

(DEC T 12 pp 50-51). Past expenditures for coal ash costs simply do not fit within the working capital concept of funds needed to finance ongoing utility service; nor is there any evidence in the record to support the idea that past coal ash costs somehow relate to the carrying cost for funding of future utility operations.

The lack of any factual basis to treat coal ash costs as "working capital" (and therefore "property used and useful" that is entitled to a return) was identified in Commissioner Clodfelter's dissent:

> As did its affiliate in the DEP Rate Case, the Company here attempts to argue that its expenditures for closure of the waste ash impoundments have been financed from shareholder funds provided for working capital and that they are therefore eligible for a return under the holding in State ex rel. Utilities Comm'n v. Virginia Electric & Power Co., 285 N.C. 398, 206 S.E.2d 283 (1974) (VEPCO). I note that the Company's presentation of evidence on this point differs in no material way from the presentation made by its affiliate in the DEP Rate Case, and I find it no more persuasive here than in that proceeding. The calculation of working capital set forth in witness Doss Direct Ex. 2 (Ex. Vol. 12, p. 786) contains no amounts designated as needed for additional working capital due to coal ash costs, and the Company's position I believe rests on nothing more than an *ipse dixit*.

(DEC R p 1202).

Thus, the Commission's conclusions that coal ash costs are working capital (DEP Order), or "like" working capital (DEC Order) are contradicted by the testimony of the Companies' own accounting witnesses, are contradicted by the definition of working capital, and reflect a shift in reasoning between the Orders even though the Commission states the DEC Order is decided on the "same basis" as the DEP Order.

4. THE COMMISSION ERRED BY CONCLUDING THAT ARO ACCOUNTING AND DEFERRAL CONVERTS COAL ASH COSTS INTO "PROPERTY USED AND USEFUL"

a. ARO Accounting Under GAAP and FERC Guidance

The DEP and DEC Orders indicate that all coal ash costs become "property used and useful" by virtue of being classified as an "asset" for ARO accounting purposes.[30] For example:

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[30] The Companies described ARO accounting in their December 2015 letter to the Commission:

> AROs are legal obligations associated with the retirement of a tangible long-lived asset that results from the acquisition, construction, or development and (or) the normal operation of a long-lived asset and also include environmental remediation liabilities that result from the normal operation of a long-lived asset

> Costs placed in an ARO account are eligible for deferral and amortization and for earning on the unamortized balance. As such, even if the remediation costs are ARO expenditures, they are eligible for ratemaking treatment as though they are used and useful assets.

(DEP R p 675) (emphasis added).

> [A]s witness Doss testified, in ARO accounting, "Under both GAAP and FERC guidance the asset created when a Company initially recognizes an ARO is considered part of the property, plant and equipment for the assets which must be eventually retired." Accordingly, such costs are used and useful in that they are intended to provide utility service in the present or in the future through achieving their intended purpose: environmental compliance, the retirement of the ash impoundments and the final storage location for the residuals from the generation of electricity. As witness Doss concluded, "The achievement of those three purposes is used and useful as the utility has the obligation to comply with CAMA and the CCR Rule."

> and that is associated with the retirement of that asset. AROs recorded on the DEC and DEP Balance Sheets at November 30, 2015 are based upon the legal obligation for closure of coal ash basins and the disposal of related ash as a result of the federal and state requirements described above . . . .

(DEP R p 6). The federal and state requirements mentioned here are the CCR Rule and CAMA, which imposed coal ash remediation duties on DEP and DEC. The ARO accounting requirement is part of Generally Accepted Accounting Principles ("GAAP") as codified by FASB, and a similar requirement is in FERC rules. (DEP R p 4).

(DEC R p 1116) (transcript citation omitted) (emphasis added). This is error of law, for it ignores the fact that many of the expenditures made by DEC and DEP for coal ash compliance are fundamentally operating expenses, even if initially capitalized as an ARO asset under FERC/GAAP guidance. Moreover, it ignores the Companies' proposal to depart from FERC and GAAP guidance for AROs in favor of a different method for North Carolina ratemaking purposes (deferral of expenditures as actually spent). (See DEP R pp 9, 23-27; see also DEC T 22 pp 162-63, 179-81).

Most importantly, the conversion of an expense related to past or future operations into a regulatory asset for ARO or deferral purposes, as proposed by the Companies, does not change the nature of the expense into "property used and useful" for state ratemaking purposes.

The reasoning behind the Commission's conclusion that ARO accounting somehow converts coal ash costs into "property used and useful" is revealed in a series of rhetorical questions from the Commission Chair to a pair of DEC witnesses. (See DEC T 9, pp 115-130). These questions first posit that the coal ash ARO is "an asset, not a cost, not an expense." (DEC T 9 p 116). This assertion became part of the

DEC Order. (DEC R pp 1113-14). The questions note that certain types of cost that are not, standing alone, capital costs may nonetheless be capitalized by including them in the utility plant account with which they are associated. (DEC T 9 pp 120-21). The questions assert that coal ash costs become capital costs by virtue of ARO accounting, regardless of whether they originally were O&M expenses or some other category:

> the remediation costs, be they otherwise capital cost or O&M expenses or G&A [General and Administrative] expenses that are capitalized, are extraordinary and are deemed not to be recovered through rates in effect when the ARO is set up and, therefore, appropriately deferred to be addressed in a subsequent rate case?

(DEC T 9 p 123; see also DEC T 9 pp 124-25).

The Commission concluded that the capitalization of coal ash operating expenses meant those costs were "used and useful," in addition to the coal ash costs that were in the nature of utility plant. (E.g., DEP R p 675; DEC R p 1116).

The Public Staff agrees that ARO costs are eligible for deferral. The Public Staff also agrees that ARO accounting for GAAP and FERC accounting purposes creates an ARO "asset" (otherwise known as an "asset retirement cost") to correspond with the ARO liability on the Companies' balance sheets. However, the Commission erred by

authorizing a return on coal ash costs through "ratemaking treatment as though they are used and useful assets." (DEP R p 675; see also DEC R pp 1107, 1116). "Used and useful assets" are not a statutory category, but assuming the Commission meant "property used and useful," the Commission is saying that N.C. Gen. Stat. § 62-133(b)(1) applies. This is error because many of the coal ash costs are expenses that can only fall under N.C. Gen. Stat. § 62-133(b)(3) and as a matter of law cannot fall under N.C. Gen. Stat. § 62-133(b)(1). An expense that is capitalized as an ARO asset for recovery in future revenues is still fundamentally an expense under N.C. Gen. Stat. § 62-133(b). It does not become transformed into property used and useful that must be allowed to earn a return just because FERC and GAAP guidance have it capitalized as an ARO asset.

The fact that coal ash costs include expenses is evident in the DEP and DEC "Petition for an Accounting Order," which requested deferral of "all non-capital costs as well as the depreciation expense and cost of [i.e., return on] capital . . . for all capital costs" related coal ash remediation under CAMA and the CCR Rule. (DEP R p 27) (emphasis added). The "non-capital costs" and depreciation expense can only be expenses.

Following the Public Staff's notice of appeal on the "used and useful" classification of all coal ash costs in the DEP case, the DEC Order shied away from directly calling coal ash costs "utility plant" or "working capital," and focused more on the conclusion that once costs are recorded in an ARO for accounting purposes, they are converted to capital and cannot be expenses. The Commission stated:

> Witnesses Fountain and McManeus were examined at length regarding the Savoy Letter at the evidentiary hearing. Tr. Vol. 9, pp. 117-24. That examination established, inter alia, that basin closure costs, whether they be denominated capital costs, O&M costs, general administration costs are nevertheless capitalized in connection with the establishment of the ARO; that such costs are extraordinary and not reflected in the Company's then current rates; and, therefore, needed to be set aside and deferred so that the Company would not lose recovery of those costs "to the detriment of the stockholder." Id. at 123-24.
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> . . . .
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> . . . As witness Doss testified, "The Company has accounted for these costs as required under GAAP and FERC [Federal Energy Regulatory Commission] Uniform System of Accounts." Tr. Vol. 12, p. 71. Under GAAP, the costs (no matter what their classification) are capitalized pursuant to ASC 410-20-25-5. Id. at 70. Under FERC accounting, they are capitalized as well. Id. at 68-69. Accordingly, when properly accounted for in an ARO, the specific classification of costs is not determinative, because under GAAP and FERC guidance ARO costs are capitalized. The nomenclature

> relied upon in GAAP and FERC is costs, assets, and liabilities, not "expenses."

(DEC R pp 1112-14).

Thus, the Commission's approach in the DEC Order relied in part on the idea that creating an ARO "asset" for accounting purposes, to balance the corresponding ARO liability, somehow created statutory "property used and useful." This is error because the statutory classification of "property used and useful" is independent of GAAP and FERC accounting guidance.

Public Staff witness Maness made clear the distinction between expenses that are capitalized and "property used and useful:

> DEC's accrued coal ash management costs may qualify as regulatory assets, but they are not utility plant that must be included in rate base. The term "used and useful" does not truly apply to these particular costs; instead, it only applies to the public utility's property — property, not the expenses it incurs in the operation, maintenance or disposal of that property. The Company has chosen to recommend treating these costs fundamentally as expenses, not as a GAAP-based asset retirement cost asset or other type of capitalized asset. Even if the expenses are deferred for future recovery, as the Company is proposing, it does not transform a Commission-created regulatory asset into a capitalized property cost, such as the cost of a generating plant.

(DEC T 22 pp 162-63). He further explained that the Companies' chosen treatment for coal ash costs actually reversed the effects of FASB and FERC ARO accounting:

> And so what the Company has actually done is, for the purpose of accounting and ratemaking before this Commission for North Carolina retail regulatory amounts, asked to depart from the method that has been approved by the FASB and FERC, and recover its costs on a different basis, which it has proposed in this case, and recognize expenses in its regulatory books of account for this Commission on that basis rather than the ARO method that is prescribed by the FASB and similarly prescribed by the FERC.
>
> . . . .
>
> . . . [The] North Carolina Commission regulatory piece, actually displaces and replaces the FASB and FERC methodology for a methodology that this Commission is being asked to approve for revenue recovery.

(DEC T 22 pp 179-81).

Along similar lines, Commissioner Clodfelter's dissent discussed the error of conflating ARO accounting with "property used and useful" in the DEC Order. This part of the dissent is quoted below at much greater length than recommended by appellate style guidelines because it is so useful for understanding the issue:

> The first issue I address is the irrelevance of SFAS 143 (now codified as ASC 410) to the issue at hand. The

majority order has, I believe, conflated concepts of financial statement presentation with the classification of costs for ratemaking purposes. To avoid repetition I will not reprise the basic operation of SFAS 143 []now, which is reviewed at length in the Majority Order. Majority Order at 286-292 [DEC R pp 1110-16]. My focus here is on the majority's use of SFAS 143 to arrive at the conclusion that amounts expended by the Company for such tasks as dewatering surface impoundments, preparing ash for beneficiation or for disposal, excavating ash from its current storage location, transporting that ash to a new permanent disposal location onsite or offsite, and then monitoring and maintaining that permanent disposal site over an extended period of years have become "…property used and useful, or to be used and useful within a reasonable time after the test period, in providing the service to be rendered to the public within the State…," making those expenditures eligible to earn a rate of return pursuant to G.S. 62-133(b)(4) and (b)(5). I do not believe SFAS 143 leads to such a result. More importantly, if it does produce such a result, that result is in conflict with the statutory language and structure of G.S. 62-133 and cannot be accepted.

Expenditures such as those catalogued in the preceding paragraph are not in themselves "property," although they are associated with "property," that being the waste ash impoundments. For purposes of SFAS 143 accounting treatment the waste ash impoundments are "long-lived tangible assets." For purposes of G.S. 62-133(b)(1) they either are now or formerly were "property used and useful in providing service."[51] The fact that they are associated with and related to "used and useful property" does not itself make them eligible for allowance of a return computed under G.S. 62-133(b)(4). If they are properly classified as "operating expenses" for purposes of G.S. 62-133(b)(3), then they are not

eligible for a return. See, e.g., State ex rel. Utilities Commission v. Public Staff N.C. Utilities Commission, 333 N.C. 195, 424 S.E.2d 133 (1993) (reasonable operating expenses must have a nexus to property used and useful in providing service, but that nexus does not render operating expenses allowable under G.S. 62-133(b)(3) eligible for a return).

How, then, do expenses that would be considered "operating expenses" under G.S. 62-133(b)(3) become transformed by SFAS 143 into "property used and useful in providing service?" I believe the core of the majority's argument is contained in the following sentence: "Recognition of the [ARO] liability carries with it recognition of a corresponding asset – the capitalized cost of settling the liability, which under both GAAP and FERC rules is considered part of the property, plant and equipment for the assets that must be retired." Majority Order at 287. [sic: 288. DEC R p 1112] This statement requires careful attention, because it leads directly to what I believe is an error of law.

Under SFAS 143 when an asset retirement obligation is recognized and is recorded on the liability side of the balance sheet, of necessity there must be some corresponding and offsetting entry made on the asset side of the balance sheet. This is so because SFAS 143 is not structured such that the recognition of an asset retirement obligation, or "ARO," is meant to produce an immediate charge to retained earnings or to the equity account. The "asset side" adjustment is made by increasing the carrying cost of the long-lived asset to which the ARO relates by an amount equal to the amount of the recorded ARO liability. This increase in the balance sheet carrying value of the asset, called the "asset retirement cost" or "ARC," does not correspond to any actual increase in the value of the asset to whose book entry the ARC is added. Nothing at all has changed

about the character, the qualities, the marketability, or the usefulness of the asset "…in providing the service to be rendered to the public." Likewise, nothing has changed about the "reasonable original cost of the public utility's property" embodied in that asset. The recording of the ARO liability and the capitalization of the ARC result from the change made by SFAS 143 in the timing of recognition of future cash outlays that are anticipated to be made at the time a long-lived asset is retired. The expenditures are not current outlays, but their recognition has been accelerated for financial statement presentation, and accelerated recognition must be offset by an entry on the asset side of the balance sheet.

From this balance sheet entry, however, the majority order concludes that because the costs associated with the closure of waste ash impoundments are now capitalized on the balance sheet, the expenditures made for those closure activities "…whether they be denominated capital costs, O&M costs, general administration costs are nevertheless capitalized in connection with the establishment of the ARO…." Majority Order at 288. [sic: 289. DEC R p 1113] Restating the same point later, the majority says: "...when properly accounted for in an ARO, the specific classification of costs is not determinative, because under GAAP and FERC guidance ARO costs are capitalized." Id. at 289. [sic: 290. DEC R p 1114] The analysis in the majority order boils down to this: because SFAS 143 requires that the carrying cost of the tangible asset with which an asset retirement obligation is associated must be increased for balance sheet purposes by the amount of the asset retirement obligation when that liability is recognized and recorded, the increase in the balance sheet carrying value of the long lived tangible asset then becomes eligible for the recovery of a return under G.S. 62-133(b)(4) and (b)(5). This is error.[52]

There are multiple difficulties with this analysis as a matter of basic statutory construction of G.S. 62-133. It is, after all, that statute that controls the ratemaking treatment of costs – of all kinds and classification -- and the determination of which elements of cost are eligible to earn a return. Most immediately, G.S. 62-133(b)(1) requires that the Commission use as its basis or starting point, "the reasonable original cost of the public utility's property…." (emphasis added.) The amount of a balance sheet adjustment made to the carrying value of an asset when an asset retirement obligation is recognized in accord with SFAS 143 is manifestly not part of the "original cost" of that asset. Allowing the "original cost" to be adjusted or increased because of the operation of SFAS 143 involves, quite simply, impermissibly rewriting the statute. The concept of "original cost" in G.S. 62-133(b)(1) matters, since pursuant to G.S. 62-133(b)(4), a return is allowed only on the cost of plant that has been computed in accord with G.S. 62-133(b)(1).

A second difficulty arises from considering the overall structure of G.S. 62-133(b) in the context of accounting practice and procedure as it existed at the time the statute was enacted. G.S. 62-133(b)(1) and (b)(3) adopt and incorporate in their workings the concept of "depreciation." Accumulated depreciation reduces the amount computed under subsection (b)(1), which is the amount upon which a return may be earned, and depreciation is recovered as an operating expense, without return, under subsection (b)(3). As has already been discussed at length earlier, under traditional depreciation accounting the costs that will be incurred upon retirement of a long-lived asset ("costs of removal") are incorporated into depreciation expense as part of the calculation of terminal net salvage value. In this manner, they are recovered for ratemaking purposes as an operating expense pursuant to G.S. 62-133(b)(3),

without a return, and not as "used and useful plant" entitled to a return.

SFAS 143 changes the time of recognition of costs of removal, in certain cases, for purposes of balance sheet presentation. It does this so that readers of financial statements may better understand expected future expenditures that will be associated with an asset.[53] Under SFAS 143 treatment the ARO and ARC entries substitute for and replace on the financial statement what had previously been shown on the financial statement as the cost of removal component of accumulated depreciation, reported as a "contra asset." Because these new entries are intended to be only a change for financial statement reporting purposes, they should be given the same treatment for ratemaking purposes as the cost of removal component of accumulated depreciation expense that they now replace. To afford any different treatment for ratemaking purposes would be, again, to allow the statutory structure and language of G.S. 62-133(b) to be amended by action of the Financial Accounting Standards Board. Whether or not such an amendment is desirable as a matter of policy, I do not believe it is within the power of the Commission to sanction it absent legislative action by the General Assembly. Because I differ with the majority and believe that under G.S. 62-133(b) the classification of costs – that is, whether they be property used and useful in providing service or whether they be operating expenses – is dispositive for purposes of eligibility to earn a rate of return, I dissent from the determination that the mere fact an item of expenditure has been reported on the financial statements as part of an asset retirement cost adjustment under SFAS 143 entitles the Company to earn a return on that expenditure.

Nor do I believe the Financial Accounting Standards Board [FASB] contemplated the result arrived at by the majority here when it promulgated SFAS 143. Explaining the difference between SFAS 143 treatment and prior practice under SFAS 19, the official FASB publication promulgating the new standard explains:

> Under Statement 19, dismantlement and restoration costs were taken into account in determining amortization and depreciation rates. Consequently, many entities recognized asset retirement obligations as a contra-asset. Under this Statement, those obligations are recognized as a liability. Also, under Statement 19 the obligation was recognized over the useful life of the related asset. Under this Statement, the obligation is recognized when the liability is incurred.

With respect to the relationship between the new treatment of asset retirement obligations under SFAS 143 and the treatment of those same obligations for rate-regulated entities, the Statement explains in Paragraph 21:

> The capitalized amount of an asset retirement cost shall be included in the assessment of impairment of long-lived assets of a rate-regulated entity just as that cost is included in the assessment of impairment of long-lived assets of any other entity. FASB Statement No. 90, *Regulated Enterprises* Statement of Financial Accounting Standards No. 143 (June 2001) pp. 4-5. *Accounting for Abandonments and Disallowances of Plant Costs,* applies to the asset retirement cost related to a long-lived

> asset of a rate-regulated entity that has been closed or abandoned.

Parsing through this language is not especially easy, but in plain English it says in substance the following: the capitalized amount of an ARO liability, i.e., the amount of the increase in the carrying cost of the long-lived asset on the asset side of the balance sheet, is to be given the same treatment as provided under SFAS 90 for a long-lived asset that has been closed. SFAS 90 is lengthy and detailed, but for present purposes the basic summary statement found in Paragraph 3 of the official statement suffices to make the point:

> When it becomes probable that an operating asset or an asset under construction will be abandoned, the cost of that asset shall be removed from construction work-in-process or plant-in-service. The enterprise shall determine whether recovery of any allowed cost is likely to be provided with (a) full return on investment during the period from the time when abandonment becomes probable to the time when recovery is completed or (b) partial or no return on investment during that period. *That determination should focus on the facts and circumstances related to the specific abandonment and should also consider the past practice and current policies of the applicable regulatory jurisdiction on abandonment situations.*[54]

Paragraph 20 of SFAS 143 makes essentially the same point:

> Many rate-regulated entities currently provide for the costs related to the

> retirement of certain long-lived assets in their financial statements and recover those amounts in rates charged to their customers. Some of those costs result from asset retirement obligations within the scope of this Statement; others result from costs that are not within the scope of this Statement. The amounts charged to customers for the costs related to the retirement of long-lived assets may differ from the period costs recognized in accordance with this Statement and, therefore, may result in a difference in the time of recognition of period costs for financial reporting and ratemaking purposes. An additional recognition timing difference may exist when the costs related to the retirement of long-lived assets are included in amounts charged to customers but liabilities are not recognized in the financial statements. If the requirements of Statement 71 are met, a regulated entity shall also recognize a regulatory asset or liability for the differences in the timing of recognition of the period costs associated with asset retirement obligations for financial reporting pursuant to this Statement and rate-making purposes.

Two things are noteworthy about this Statement. First, it is an explicit recognition that the treatment of costs under SFAS 143 for financial statement reporting purposes may be different than the treatment of those costs for ratemaking purposes. Second, it expressly confirms that SFAS 71 continues to apply to the accounting treatment of such differences in treatment through the mechanism of regulatory assets and regulatory liabilities.[55]

The upshot of this is that under SFAS 143, SFAS 90 and SFAS 71, which must be read together, the capitalized amount of an asset retirement cost, that is, the increase in the carrying cost of the asset equal to the amount of the ARO liability, may or may not, if it becomes an allowed cost for recovery in rates, carry a return *depending on the policies and practices applicable in a particular regulatory jurisdiction.* I read from this no intention in SFAS 143 that for a rate-regulated entity the accounting treatment of an asset retirement obligation, including the capitalization of the amount in the carrying cost of the associated asset, is to supersede or modify either the law, policy, or practice of any jurisdiction with respect to what items of cost may earn a return.[56]

Finally, I note that FERC Order 631, adopting SFAS 143 principles for entities subject to FERC jurisdiction, likewise does not compel inclusion of the capitalized amount of the asset retirement obligation in rate base; quite the contrary. Order 631, adopted on April 9, 2003, amended Title 18 of the Code of Federal Regulations to add a new section 35.18(a) that reads in full:

> A public utility that files a rate schedule, tariff or service agreement under §35.12 or §35.13 and has recorded an asset retirement obligation on its books must provide a schedule, as part of the supporting work papers, identifying all cost components related to the asset retirement obligations that are included in the book balances of all accounts reflected in the cost of service computation supporting the proposed rates. *However, all cost components related to asset retirement obligations that would impact the calculation of rate base, such as electric plant and related accumulated depreciation and*

> *accumulated deferred income taxes, may not be reflected in rates and must be removed from the rate base calculation through a single adjustment.*

(emphasis added)

The intent of this new rule is explained by FERC in Paragraph 62 of Order 631, which states: "To ensure that all rate base amounts related to asset retirement obligations can be identified and excluded from the rate base calculation in a rate change filing, the Commission adds §§ 35.18 and 154.315 [dealing with jurisdictional natural gas entities] to its rate change filing requirements," and later in the same paragraph repeats the point, stating: "…[T]he regulations require that all asset retirement obligations related rate base items be removed from the rate base computation through an adjustment."
I therefore disagree with the majority order and would find that classification of costs and expenses – either as "used and useful property" or as "reasonable operating expenses" -- *does indeed* matter for purposes of applying G.S. 62-133(b)(4) and (b)(5). SFAS 143 does not pre-empt that choice.

[51] The difference between "now" and "formerly" is quite important, and is the subject of the discussion in Part II.B., as set forth hereafter. It is not a difference that is material, however, for purposes of the present argument in this section.

[52] It is also a reversal of the position taken in the Commission's August 8, 2003, Order in Docket No. E-7 sub 723. In that Order the Commission approved the Company's implementation of SFAS 143 accounting treatment for its obligations arising from decommissioning the irradiated portions of its nuclear

> plants and for environmental clean-up at its Belews Creek Steam Station. The Commission conditioned its approval on a number of specific qualifications and limitations, including "[t]hat no portion of the total ARO asset or liability shall be included in rate base for North Carolina retail accounting or ratemaking purposes."
>
> [53] Statement of Financial Accounting Standards No. 143 (June 2001) pp 4-5.
>
> [54] Statement of Financial Accounting Standards No. 90 (December, 1986), pp 5-6.
>
> [55] It is, of course, the case that not all regulatory assets or liabilities carry with them an associated rate of return. Whether they do so or not is, once again, a function of the provisions of G.S. 62-133.
>
> [56] In October 2002, the Edison Electric Institute and the American Gas Association issued an industry paper titled "Asset Retirement Obligations Implementation Issues." Speaking to the effect of SFAS 143 on ratemaking, the paper observes (p. 5): "Many utilities have included removal costs in depreciation rates or some other rate recovery mechanism. For ratemaking purposes, the collection of depreciation expense, including the salvage, and grow removal cost should remain intact. If customers have been paying for the cost of removal through rates, they may have a reasonable expectation that the utility will expend the costs to remove the asset at the end of its useful life."

(DEC R pp 1190-96) (emphasis in original). This dissenting opinion explains why ARO accounting, as required by the Financial Accounting Standards Board and the Federal Energy Regulatory Commission, does <u>not</u> require rate base treatment of capitalized operating expenses. The

dissent underscores the error of the Commission majority in conflating an accounting "asset" with "property used and useful," and in deciding the legal status of coal ash costs on the basis of accounting presentation requirements instead of N.C. Gen. Stat. § 62-133(b).

b. Deferral to a Regulatory Asset

Because the Commission deferred to regulatory assets the coal ash costs that the Companies had placed in AROs, there is a further question as to the effect of this type of deferral on the "property used and useful" treatment of coal ash costs. Thornburg I confirms that under North Carolina law, it is proper ratemaking to treat deferred costs as a form of operating expense, not as rate base. If deferral resulted in costs being converted to "property used and useful" merely because it creates an "asset" on the utility's books, then the Commission could not have denied a return on the deferred nuclear abandonment costs in Thornburg I.

Thornburg I involved the ratemaking treatment of nuclear plant abandonment costs for Carolina Power and Light Company's Shearon Harris Units 2, 3, and 4. The Court affirmed the Commission's ten-year amortization, with no return, that equitably shared the costs between ratepayers and shareholders: "the Commission's order does not err as a

matter of law in authorizing CP&L to continue to recover a portion of the cancellation costs of the abandoned Harris Plant as operating expenses through amortization." Thornburg I, 325 N.C. at 475, 385 S.E.2d at 458 (emphasis added).

Even though the subject costs were spent on utility plant that was not "used and useful," the Court accepted deferral to a regulatory asset as a tool that allowed utility plant costs to be converted to a form of operating expense for ratemaking purposes:

> In the instant case, both the construction and the cancellation of the Harris Plant were approved by the Commission, and the Attorney General does not in this proceeding dispute the validity of this approval. The recovery of these costs through a liberal interpretation of the operating expense component is, like the recovery of exploration costs in *Edmisten*, consistent with the act's purpose as set forth in N.C.G.S. § 62-2.

Id. at 478, 385 S.E.2d at 459. This was reasonable for utility financial stability because absent Commission approval of deferral, the cost of the abandoned plant would have immediately been written off as a loss (the recorded loss being equivalent to an operating expense). The Court further approved the classification of costs in a regulatory asset as "operating expenses" under the Commission's authority to achieve reasonable and just rates: "N.C.G.S. § 62-133(d) has been interpreted by

this Court as allowing the Commission to consider "all other material facts of record" beyond those specifically set forth in the statute." Id.

There is a factual distinction between the deferred abandonment costs in Thornburg I and the deferred coal ash costs in the present cases, but it is not relevant for ratemaking treatment of the deferral. The nuclear abandonment costs were not "used and useful." In contrast, an unidentified amount of the coal ash costs were expended for "property used and useful," while other coal ash costs were operating expenses, as discussed previously in this brief. Moreover, the coal ash costs were accounted for in an ARO. These distinctions do not matter, however, with respect to the ratemaking treatment of costs deferred to a regulatory asset. In both situations, there was no recovery of utility plant costs by the statutory path under N.C. Gen. Stat. § 62-133(b)(1); namely, putting the costs into rate base and providing for recovery by depreciation over the life of the physical assets. This option was not available for nuclear abandonment costs because they were not incurred for "used and useful" property. This option was not available for coal ash costs in an ARO because many of the coal ash costs were operating expenses. The solution, or regulatory tool, to protect the utility from a substantial loss in each

situation was to defer the costs to a regulatory asset. This allowed amortization -- not depreciation -- of past costs. It allowed the Commission to treat those costs as a form of operating expenses, as recognized in Thornburg I, to allow their recovery in prospective rates. As a form of operating expenses, the deferred regulatory asset was not entitled to a return under N.C. Gen. Stat. § 62-133(b)(1) and (4).

The deferral of costs in Thornburg I to a regulatory asset did not convert them to "property used and useful"; rather it treated them as operating expenses that could be amortized. More specifically, it converted them from what would have been recorded as an immediate loss into expenses that could be preserved for future amortization. Because the costs were not converted into "property used and useful" by deferral, Thornburg I upheld the denial of a return on the unamortized balance of the regulatory asset. The Thornburg I outcome for costs deferred to a regulatory asset is equally applicable to coal ash costs deferred to a regulatory asset.

Another instructive example is the Commission's decision in Docket No. G-5, Sub 327. That case involved environmental cleanup costs for manufactured gas plants ("MGP") owned by Public Service Company of

North Carolina, Inc. ("PSNC"). Witness Maness cited the Commission's order[31] on equitable sharing regulatory treatment of those environmental cleanup costs as support for his proposed equitable sharing in the present cases. (DEP T 18 pp 312-13; DEC T 22 pp 76-77).

The deferred costs of cleaning up environmental contamination from MGP facilities bears a striking similarity to the coal ash cleanup problem facing DEP and DEC:

> By-products of the gas manufacturing process included sulfur, hydrogen sulfide, iron cyanide, light oils, tar, water and coke. These by-products were disposed of consistent with the laws applicable at the time, but their existence has raised concerns under current environmental laws and standards.

PSNC Order p 177-78. PSNC estimated substantial costs to remediate the environmental contamination at its MGP facilities. (Id.). Because of the parallels to coal ash costs, it is worth quoting at length from the PSNC Order, where the Commission had no question about its legal

[31] Eighty-Fourth Report of the North Carolina Utilities Commission Orders and Decisions, pp 159-242; accessible online with different pagination at https://starw1.ncuc.net/NCUC/ViewFile.aspx?Id=eb172ddf-ce3b-4fcc-96a8-9e93d5c9c032 ("PSNC Order").

authority to require an equitable sharing by denying a return on the costs:

> 28. A general rate case is the appropriate forum for reviewing the MGP clean-up costs. Deferral and amortization of the MGP costs in a general rate case will result in more stable rates than would recovery of these costs through the Company's proposed tracker and will afford an adequate opportunity for prudency review.
>
> 29. The unamortized balance of MGP costs should not be included in rate base. The resulting sharing of clean-up costs between ratepayers and shareholders will provide PSNC motivation to minimize costs and to pursue contributions from other potentially responsible parties and insurers.

PSNC Order p 164.

The supporting Evidence and Conclusion section of the PSNC Order includes the following explanation:

> Mr. Hoard also recommended that the unamortized balance of MGP costs not be included in rate base. Public Staff witness Hoard testified that he does not believe it is the responsibility of current ratepayers to absolve shareholders of all cost responsibility for cleaning up the sites. He stated that excluding the unamortized balance of deferred MGP costs from rate base would require shareholders to share in the cost by being required to bear the carrying costs associated with the unamortized balance of MGP costs. Mr. Hoard noted that this ratemaking treatment is consistent with the Commission's treatment in the past for abandoned plant costs by electric utilities. Mr. Hoard also testified that although interest is accrued on the deferred gas cost

accounts of gas utilities, the Commission does not normally allow utilities to accrue interest on expenses deferred as the result of accounting orders.

Company witness Dickey testified that if the Public Staff's ratemaking treatment is adopted, carrying costs on the uncollected balance should be allowed to lessen the impact on PSNC. He recommended that the overall cost of capital rate or 10% be applied to the uncollected balance.

....

The Commission concludes that the Company's proposed MGP tracker should not be approved. Assuming, without deciding, that the Commission would have legal authority to approve such a tracker, the Commission believes that this is not an appropriate situation for such an extraordinary rate mechanism. Provisional, non-fixed rates should be reserved for limited circumstances. Public Service is just beginning to investigate MGP clean-up. Management of the MGP sites could take decades and cost tens of millions of dollars. Approval of the proposed tracker would have far reaching consequences which cannot be known at this early stage. Further, complicated prudency issues are likely to arise in connection with the MGP clean-up. Among the factors to be considered in passing these costs on to the ratepayers are whether the Company's initial operation of each site was prudent, whether the clean-up costs were prudently incurred, and whether contributions should be provided by prior and joint owners. The Company's proposed tracker would provide a limited opportunity for review of these prudency issues. Finally, the Company's proposed tracker should be rejected because a pass through of MGP clean-up costs to current ratepayers will inevitably undermine PSNC's motivation to minimize costs and to pursue contributions from others. Based on the foregoing

concerns, the Commission rejects the Company's proposed MGP tracker.

On the other hand, the approach advocated by the Public Staff addresses all of these concerns. .... The Commission concludes that the Company should account for the MGP clean-up costs in the manner described by Mr. Hoard. The Commission concludes that this approach is appropriate as a matter of law and as a matter of policy. It is proper and in the public interest for the Commission to allow PSNC to recover the prudently-incurred clean-up costs from current ratepayers as reasonable operating expenses, even though the MGP sites are not used and useful in providing gas service to current customers. At the same time, however, it is not appropriate for ratepayers to relieve shareholders of all cost responsibility associated with the ratemaking treatment of MGP clean-up. We conclude that the proper balance between ratepayer and shareholder interests is achieved by amortizing the prudently-incurred costs to O&M expenses in general rate cases but denying the Company any recovery from ratepayers of the carrying costs on the deferred and the unamortized MGP clean-up cost balances. A sharing of MGP clean-up costs between ratepayers and shareholders has been adopted by several other state commissions. See, e.g., AG Dickey Cross Examination Exhibits 1 and 2; 146 PUR 4th 123; 147 PUR 4th 1. This treatment is analogous to the treatment ordered by this Commission for the costs of abandoned nuclear plants of electric utilities, which was upheld as reasonable by the North Carolina Supreme Court. See State ex. rel. Utilities Commission v. Thornburg, 325 N.C. 463 (1989). This approach will provide an appropriate forum where prudency issues can receive the regulatory oversight they deserve in the context of general rate cases. This approach will give the Company an incentive to minimize clean-up costs and to pursue contributions. Finally, the Commission concludes that this approach

> will result in greater rate stability. Rather than recovered over a 12-month period, the costs can be amortized over an appropriate period, determined in each case, depending upon their magnitude.

PSNC Order at pp 179-81 (emphasis added).

The PSNC Order is notable support for the Public Staff's recommendations in the present DEP and DEC cases for several reasons. First, it involved environmental cleanup costs found to be prudent. Second, it approved an equitable sharing of those costs between ratepayers and shareholders "as a matter of law and as a matter of policy." Third, it rejected alternative recovery mechanisms, such as a tracker, in favor of the amortization of costs with no return. Fourth, it analogized the ratemaking treatment for environmental cleanup costs to that of abandoned nuclear plant costs. Fifth, it noted that the MGP sites are not used and useful in providing gas service to current utility customers; likewise, most of the ash basins are not currently used in the production of electricity (a majority of the Companies' coal-fired power plants in North Carolina are closed – see DEP Doc. Ex. 508 and DEC Doc. Ex. 2338), and CAMA provides for closure of all ash basins.[32] Sixth, the

[32] See footnote 6, supra, for legally mandated closure dates of the DEP and DEC ash basins in North Carolina. The Robinson Plant in South

Commission reasoned that equitable sharing would incentivize PSNC to minimize its cleanup costs going forward; DEP and DEC expect to incur substantial coal ash cost in the future so the same reasoning is applicable to their rate cases. Seventh, the Commission noted that the recovery period may vary with the magnitude of costs, which supports the Public Staff position in the DEP and DEC cases that the magnitude is relevant to the amortization period.

The Commission determined that costs to clean up environmental pollution caused by past MGP operations were not "used and useful" for providing utility service to current customers. (PSNC Order at p 181). Yet in the DEP and DEC Orders the Commission reaches a different legal conclusion, ruling that costs to clean up environmental pollution caused by past coal plant operations are somehow "used and useful" for providing utility service to current customers (DEP R pp 667, 670; DEC R p 1033), despite the fact that coal ash cleanup will not result in electric service to

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Carolina is not subject to CAMA, but is scheduled for closure within eight years as provided for in the Consent Agreement between South Carolina Department of Health and Environmental Control ("DHEC"). Similarly, DEC entered into a consent agreement with DHEC for ash basin closure at the W.S. Lee plant. (See DEP R pp 624-25; DEP Doc. Ex. 538-41, 1120; DEC R p 1036; DEC Doc. Ex. 1993, 2096-2106).

current DEP and DEC customers any more than MGP cleanup resulted in natural gas service to then current PSNC customers.

Moreover, the Commission had no doubts about the legality of equitable sharing in the PSNC environmental cleanup case. Yet the present DEP and DEC Orders conclude that equitable sharing is not legally sustainable. The Public Staff submits that equitable sharing is lawful, as the Commission ruled in the PSNC Order and as the Court ruled in Thornburg I. The Commission's conclusion to the contrary in the DEP and DEC Orders is error as a matter of law.

In summary, there is no basis in law for the Commission's conclusion that the accounting asset created either by ARO accounting, or by deferral, overrules N.C. Gen. Stat. § 62-133 and converts operating expenses to "property used and useful." Coal ash costs started out as a mix of expenses and capital costs, and neither the requirements of GAAP and FERC ARO accounting, nor the Companies' proposal to replace that ARO accounting with deferral accounting for ratemaking purposes, converts those costs into "property used and useful" for ratemaking purposes. That was the legal result in Thornburg I, it was the outcome of the PSNC Order involving environmental cleanup of MGP facilities, and

it should be the legal result in the present DEP and DEC rate cases. This is yet another reason why the Orders err when they reject equitable sharing on the grounds that coal ash costs are "property used and useful" entitled to a return.

5. A NEXUS BETWEEN EXPENSES AND UTILITY PLANT DOES NOT CONVERT THE EXPENSES TO "PROPERTY USED AND USEFUL"

Another "used and useful" argument by the Companies was that dollars spent to comply with coal ash disposal regulations were "related to used and useful utility costs made in the provision of electric utility service at the time." (DEP T 13 p 376) (emphasis added); (DEC T 12 pp 144-45); (see also DEC R p 1071). It appears the term "used and useful utility costs" in this testimony refers to the coal-fired generating plants and their associated ash basins. Under N.C. Gen. Stat. § 62-133(b)(1) it is not the "costs" that are "used and useful" but rather the "property" used to provide electric service to current customers that is "used and useful." By conflating "costs" with "property," the testimony makes it easier to ignore the statutory distinction between "property" (which is entitled to a return) and "expenses" (which are not entitled to a return).

The legal flaw in this analysis is that coal ash costs may be related to or have a nexus with "property used and useful" yet still retain their nature as N.C. Gen. Stat. § 62-133(b)(3) expenses. Custodians and engineers are paid salaries to help operate coal-fired plants. Those salaries are related to the production of electric service from the utility plant, and are certainly useful, but they must be booked as operating expenses, without a return. They are not "property used and useful" that is entitled to a return. Likewise, the cost of coal burned in such plants is booked as an expense that gets no return. DEP and DEC witness Wright argued that

> [U]nder NCGS § 62-133.2, the Commission has allowed electric utilities to recover their prudently incurred "fuel and fuel related" costs, and this statute at§ 62-133.2(a1)(3) defines those costs as including the following environmental compliance costs: *The cost of ammonia, lime, limestone, urea, dibasic acid, sorbents, and catalysts consumed in reducing or treating emissions*.

(DEC T 12 p 129) (emphasis in original). Notably, witness Wright is arguing for a return on coal ash costs under N.C. Gen. Stat. § 62-133(b)(1) by comparing them to fuel-related costs under N.C. Gen. Stat. § 62-133.2 – a different statutory sub-section that makes no provision for putting fuel costs into rate base.

There are expenditures that get properly included in rate base, such as the labor used to build a coal-fired plant. These expenditures are manifestly different from operating expenses, as they are a cost of construction of the long-lived physical asset that becomes "property used and useful," not a cost of operating the plant. An environmental regulatory compliance cost could be appropriately included in rate base where incurred to create "property used and useful." However, many of the compliance costs, such as excavation, transportation, offsite disposal, and ongoing monitoring and maintenance of onsite disposal sites, are costs of operating the sites in compliance with environmental regulations.

The DEP Order concludes that coal ash costs "are used and useful in the provision of service to customers." (See, e.g., DEP R p 667). The DEC Order evades the question by stating that to the extent capital in nature, the coal ash costs are "used and useful" – without identifying the extent to which the costs are capital in nature. However, the Commission appears to accept the Companies' argument that costs for activities related to utility plant – even operational costs - must be "used and useful":

> [S]uch costs are used and useful in that they are intended to provide utility service in the present or in the future through achieving their intended purpose: environmental compliance, the retirement of the ash impoundments and the final storage location for the residuals from the generation of electricity. As witness Doss concluded, "The achievement of those three purposes is used and useful as the utility has the obligation to comply with CAMA and the CCR Rule.".

(DEC R p 1116). The Commission also recited witness Wright's testimony to the effect that a relationship between compliance costs and utility plant is sufficient to qualify the costs as "property used and useful":

> He stated that the Company has historically spent dollars in order to comply with the coal ash disposal regulations in effect at the time, and these dollars were a necessary expenditure related to used and useful utility costs made in the provision of electric service at the time.

(DEP R p 630). To the extent the Commission's conclusion is based on witness Wright's reasoning, it is in error. Alternatively, it is error for the Commission to recite that testimony but not address whether it was one of the Commission's reasons for its decision to award a return on coal ash. Either way, an operating expense does not become "property used and useful" simply because it has been incurred for environmental compliance with CAMA and the CCR Rule.

Commissioner Clodfelter's dissent pinpointed this error in discussing costs for excavation, transport, offsite disposal, and ongoing monitoring and maintenance of ash disposal sites:

> Expenditures such as those catalogued in the preceding paragraph are not in themselves "property," although they are associated with "property," that being the waste ash impoundments. For purposes of SFAS 143 accounting treatment the waste ash impoundments are "long-lived tangible assets." For purposes of G.S. 62-133(b)(1) they either are now or formerly were "property used and useful in providing service." The fact that they are associated with and related to "used and useful property" does not itself make them eligible for allowance of a return computed under G.S. 62-133(b)(4). If they are properly classified as "operating expenses" for purposes of G.S. 62-133(b)(3), then they are not eligible for a return. See, e.g, State ex rel. Utilities Commission v. Public Staff N.C. Utilities Commission, 333 N.C. 195, 424 S.E.2d 133 (1993) (reasonable operating expenses must have a nexus to property used and useful in providing service, but that nexus does not render operating expenses allowable under G.S. 62-133(b)(3) eligible for a return).

(DEC R pp 1190-91) (footnote omitted). He then pointed out the illogical result of the Commission's conclusion:

> Ash wastes are a residue from the burning of coal to generate electricity. Supplying electricity is the service for which the Company is entitled to compensation, and the investments it makes in plant and facilities in order to supply that service are the capital assets on which it is entitled to earn a return. There is no dispute that the cost of the coal burned is an operating expense incurred

> in order to deploy those capital assets to provide electric service. It stands this paradigm on its head to allow the Company to treat the residue from this fuel as a new opportunity for capital investment and for profit making. The fuel itself has real value for the provision of a desired service, electricity; surely the unwanted residue, except when committed to beneficial reuse, has no such value. Yet under the majority's analysis, the residue has now become of greater profit making value to the Company than the underlying fuel itself.

(DEC R p 1203; see also DEC R pp 1199-1202).

IV. THE COMMISSION'S REASONS FOR REJECTING EQUITABLE SHARING CONSTITUTE LEGAL ERROR

A. THE ORDERS ERR BY MISSTATING THE PUBLIC STAFF POSITION AS THE BASIS FOR REJECTING EQUITABLE SHARING

The Public Staff proposed an equitable sharing of coal ash costs between ratepayers and utility shareholders, to be achieved by prescribing a long timeframe for amortization of the deferred coal ash costs and no return on the unamortized balance. (See DEP T 18 pp 308-10; DEC T 22 pp 71-72). The Commission rejected this proposal, relying instead on the erroneous conclusion that coal ash costs are "property used and useful" as discussed above. In reaching this conclusion, the DEP Order several times rejects the Public Staff's equitable sharing position

by misstating the evidence instead of weighing the evidence. The DEC Order incorporates this error, as shown by its statement that the Commission does not accept equitable sharing "on the same basis" as the the DEP Order. (DEC R p 1097). This is reversible error, for reliance on a false narrative of the evidence means that the Commission failed to give consideration to the actual evidence.

Critical examples where the DEP Order misstates the Public Staff testimony, and then uses the misstatement as a basis for rejecting the Public Staff's position, include the following.

1. MISSTATEMENT ON ENVIRONMENTAL VIOLATIONS

A major reason for the Public Staff recommendation to equitably share coal ash costs between consumers and shareholders is that the Companies bear some culpability for extensive environmental violations resulting from its coal ash management, even in the absence of "imprudence." (See, e.g., DEP T 18, pp 272-74, 284-85; DEC T 26 p 643). The DEP Order asserts - incorrectly - that the Public Staff position does not rely on environmental violations as a reason for equitable sharing:

> The Public Staff bases its proposal on two principles: first, the Company's alleged past failures, as detailed in the testimony of Public Staff witness Lucas, to prevent

> environmental contamination from its coal ash basins, and, second, an asserted "history of approval of sharing of extremely large costs that do not result in any new generation of electricity for customers." (Tr. Vol. 18, p. 309.)
>
> As to the first asserted predicate, the parties dispute the existence of failures. The Commission addresses Wells' testimony, above, but <u>whether or not the Company were guilty of some sort of violation appears not to be material to the Public Staff's 50/50 sharing proposal</u>. Witness Maness admitted, in response to questions from the Chairman, that all of these alleged acts or failures to act occurred in the past. (Tr. Vol. 19, pp. 60-61.) Witness Maness's response to the Chairman's questions leads to the true heart of the matter – the Public Staff's position, simply stated, is that it does not matter if the Company's actions in incurring the CCR Rule and CAMA compliance costs were prudent – the Public Staff's 50/50 equitable sharing proposal would still apply. As Maness testified, "[E]ven if you left out specific acts or omissions of the Company and assumed everything was prudent, aboveboard" (Tr. Vol. 19, p. 61), the Public Staff would (at least "likely") <u>still</u> recommend the 50/50 equitable sharing proposal. (<u>Id.</u>) Accordingly, the real rationale for the Public Staff's proposal appears to be witness Maness's second predicate: the proposition that the Commission has a "history of approval of sharing of extremely large costs that do not result in any new generation of electricity for customers." (Tr. Vol. 18, p. 309.)

(DEP R p 668) (first emphasis added) (second emphasis in original). The fact that environmental violations were indeed a vital part of the Public Staff's evidence in support of equitable sharing under N.C. Gen. Stat. §

62-133(d), in contradiction of the Commission statement quoted above, is shown by the following record evidence.

Public Staff Witness Lucas testified:

> [F]or most of the coal ash-related costs in the DEP rate request there is some degree of DEP culpability for costs, due to non-compliance with environmental regulations, but it may fall short of imprudence. In this situation, an equitable sharing of those costs is reasonable and appropriate, as discussed by Public Staff witness Maness.

(DEP T 18 p 274). Likewise, "An equitable sharing is particularly appropriate in light of the extent of the Company's failure to prevent environmental contamination from its coal ash impoundments, in violation of state and federal laws." (DEP T 18 p 282). Moreover,

> DEP has a great deal of culpability for compliance costs related to ash basin closures, and would likely have incurred most of those costs even without the CCR Rule and CAMA, whereas ratepayers are not culpable at all for those costs.

(DEP T 18 p 285). In supplemental testimony, witness Lucas sponsored Revised Lucas Exhibits 5 and 6. (See DEP T 18 pp 288-90; DEP Doc. Ex. 1122-23). Revised Lucas Exhibit 6 shows 2,857 violations of the 2L Rule groundwater limits, occurring at every DEP coal ash plant in North Carolina – and that is just the groundwater violations without regard to

NPDES permit violations and surface water violations under N.C. Gen. Stat. § 143-215.1. (DEP Doc. Ex. 1123). The Public Staff's repeated references to DEP's coal ash environmental violations leave no doubt that this was a material reason for the Public Staff's equitable sharing proposal:

> DEP seeks recovery of what it calls environmental compliance costs, but that label masks the fact that many of these costs would have been incurred to clean up DEP's environmental violations even without the CCR rule or CAMA. The Commission has the authority to decide what are just and reasonable rates. The Public Staff -- it would not be just and reasonable to put the cost burden of DEP's failure to comply with environmental regulations entirely on customers.
>
> The Public Staff is not saying that DEP's environmental noncompliance problems are the result of imprudence, because my review did not examine what Duke Energy knew or should have known about coal ash contamination at the time the ash basins were constructed. Instead, I maintain that DEP is culpable for environmental violations because the Company failed to meet its legal duty to protect ground and surface waters. Therefore, the Company should have some responsibility for paying for coal ash cleanup costs. This recommendation is one basis for the equitable sharing in the testimony of Public Staff Witness Maness.

(DEP T 18 pp 339-40).

The evidence of extensive environmental violations from coal ash was also cited by Public Staff witness Maness in support of the equitable sharing recommendation:

> There are two general reasons why the sharing of costs for coal ash management is [] reasonable and appropriate for ratemaking purposes. First, as discussed in more detail by Public Staff witness Lucas, the extent of the Company's failure to prevent environmental contamination from its coal ash impoundments, in violation of state and federal laws, supports ratemaking that leaves a large share of the costs for DEP shareholders to pay. Second, there is a history of approval for sharing of extremely large costs that do not result in any new generation of electricity for customers. Such sharing between ratepayers and shareholders has been approved for costs of abandoned nuclear construction and for environmental cleanup of manufactured gas plant facilities.

(DEP T 18, p 309) (emphasis added) (see also pp 343-44).

It is inconceivable how the Commission could find that evidence of environmental violations "appears not to be material to the Public Staff's 50/50 sharing proposal…." (DEP R p 668). The record evidence, as cited above, shows otherwise.

The DEP Order compounds this error by misstating the testimony of Public Staff witness Maness:

> As Maness testified, "[E]ven if you left out specific acts or omissions of the Company and assumed everything

> was prudent, aboveboard" (Tr. Vol. 19, p. 61), the Public Staff would (at least "likely") still recommend the 50/50 equitable sharing proposal.

(Id.; emphasis in original). Witness Maness made clear that in the absence of environmental violations the Public Staff would rely on other reasons to recommend some level of equitable sharing, but he never said it would be 50/50. The DEP Order conveniently omits the fact that witness Maness indicated the history of environmental violations was part of the basis for the equitable sharing proposal ("I do agree that that's part of it. . . ."). (DEP T 19 p 61). He then specified that even in the absence of those environmental issues the Public Staff would recommend "a sharing" - not specifically a 50/50 sharing - and he clarified in response to a Commissioner's question that events affecting future coal ash cleanup costs could alter the Public Staff's view of "equitable" to something higher or lower than a 50/50 sharing:

> Q. And that might change the 50/50 to something — a greater disallowance if you found additional things in the future, that is a lesser disallowance; wouldn't that be the case?
>
> A. Yes, sir, that's a possibility.

(Id.).

Where the DEP Order finds that environmental violations were not material to the Public Staff's position, in direct contradiction to the record evidence, and then misstates witness Maness's testimony to support that finding, the Commission's finding is not supported by evidence in the record.

The DEC Order was decided "on the same basis" (DEC R p 1097) and thus incorporates the same legal error. As in the DEP case, Public Staff witnesses testified that DEC coal ash-related environmental violations were a material reason for the equitable sharing recommendation. (DEC T 22 p 71; T 26 pp 727, 738-42). Yet the DEC Order concludes that this is not part of the Public Staff's real rationale for equitable sharing. (DEC R pp 1098-99). The Commission's reasoning in that case is that environmental violations can only be relevant to prudence (id.), thereby completely ignoring the N.C. Gen. Stat. § 62-133(d) basis for equitable sharing.

2. MISSTATEMENT ON ARO ACCOUNTING

The DEP Order also misstates the testimony of witness Maness with regard to ARO accounting. These misstatements are a significant part of the Commission's decision. First, the DEP Order states:

> The accounting issue, as far as witness Maness is concerned, is how the Company's coal ash basin closure costs could be classified as "plant," and therefore eligible to be included in rate base, when they are actually accounted for in an ARO, which deals with retirement costs. (Id.) [W]itness Maness also indicates that the Company "chose[ ] not to propose to include these type of costs … as utility plant and service." (Id. at 67.)
>
> . . . .
>
> . . . Contrary to witness Maness's indication that the Company had any "choice" in the matter, and the AGO's argument, upon the passage of CAMA and the promulgation of the CCR Rule, the Company was required by GAAP to establish an ARO.

(DEP R pp 672-73). The Commission repeats this misstatement of witness Maness's testimony in the DEC Order. (DEC R pp 1107-08). The testimony cited in the DEP Order and the record as a whole show that witness Maness did not state DEP had a choice about ARO accounting, or that ARO accounting was the reason why coal ash costs could not be utility plant in service. Here is what witness Maness actually said, which is quite different than represented by the Commission:

> The Company — and the reason I say it doesn't make any difference in this case, is the Company, itself, has chosen not to propose to include these type of costs, at least the ones that have been incurred so far, to my knowledge, as utility plant [in] service. They have said that these costs should be treated as regulatory assets, which puts them in another category entirely. And the

> Company also said, for example, when it — I can't remember if it's notification of the initial deferral or its later proposal — that it was at risk of having, I believe, DEP approximately a $291 million write-off to expense if they did not receive the deferral accounting treatment that they requested.

(DEP T 19 pp 66-67) (emphasis added). Witness Maness took the position that deferral to a regulatory asset was a choice made by the Company and approved by the Commission, not that use of ARO accounting was a choice. As quoted above, he indicated that if DEP had followed ARO accounting and not received a deferral, the Company could have faced a $291 million write-off. Thus the "choice" made by DEP was not about ARO accounting prescribed by accounting standards; rather, it was about how DEP could opt for special ratemaking treatment (deferral) after the ARO was created.

DEP maintained that ARO accounting was mandatory for its coal ash costs. At no point did the Public Staff disagree. On 21 December 2015, in Docket Nos. E-2, Sub 1103, and E-7, Sub 1110, DEP and DEC notified the Commission that the Companies had created AROs for coal ash basin costs. (DEP R pp 3-11). The coal ash ARO for DEP was "approximately $2.5 billion to reflect its estimated costs of CAMA compliance." (DEP R p 617). For DEC, a dissenting commissioner identified the coal ash ARO

amount as $2.6 billion for the North Carolina retail share.[33] (DEC R p 1222). The creation of an ARO for coal ash remediation and closure costs was based on Generally Accepted Accounting Principles ("GAAP") issued by the Financial Accounting Standards Board ("FASB"). (DEP R pp 3-11).[34]

On the other hand, deferral accounting of coal ash costs for ratemaking purposes was an outcome that DEP and DEC chose to request from the Commission. The Companies' letter filed on 16 December 2015 indicated that the creation of an ARO is a mandatory requirement of national accounting principles. In contrast, the Companies' petition filed on 30 December 2016 was their request to avoid a multi-billion write-off that could occur under ARO accounting in the absence of deferral of the coal ash costs to a regulatory asset. In fact, the

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[33] The amount of coal ash costs classified by DEP and DEC as AROs has grown over time as the Companies have updated their estimated remediation costs. In the 30 December 2016 Petition for an Accounting Order, DEP identified $2.1 billion and DEC identified $2.4 billion. (DEP R p 22).

[34] The FASB accounting guidance is currently referred to as ASC 410-20, also called "Accounting Standards Codification for Asset Retirement and Environmental Obligation." (DEP R p 3). The FERC follows the ARO accounting requirements as well. (Id.). The ARO standard had been originally designated as SFAS 143. (DEC R p 1111).

Companies' petition stated that in the absence of deferral, for the twelve months ended September 30, 2016 alone, the impact of the write-off would have amounted to a 244 basis point decrease in DEP's return on equity, and a 247 basis point decrease in DEC's return on equity. (DEP R pp 25-26). The long-term consequences of ARO accounting by itself could be dire:

> Absent the deferral, the Companies may have to write off billions of dollars of costs for accounting purposes, which without question would severely impair the Companies' financial stability and ability to attract capital on reasonable terms.

(DEP R p 27).

Fortunately, the FASB allows companies to recognize in their financial statements the effects of regulatory commissions allowing a different approach – deferral to a regulatory asset – to authorize a ratemaking approach that prevents such a loss:

> The FASB recognized that differences may exist between the requirements of ASC-410-20 and the treatment of ARO cost for regulatory purposes, and accordingly, provided that a regulated entity . . . could recognize a regulatory asset or liability for any differences between the two approaches . . . .

(DEP R p 9). This is the "choice" to which witness Maness alluded, not ARO accounting requirements as the Commission erroneously stated.

Witness Maness explained this during cross-examination in the DEC rate case:

> And so what the Company has actually done is, for the purpose of accounting and ratemaking before this Commission for North Carolina retail regulatory amounts, asked to depart from the method that has been approved by the FASB and FERC, and recover its costs on a different basis, which it has proposed in this case, and recognize expenses in its regulatory books of account for this Commission on that basis rather than the ARO method that is prescribed by the FASB and similarly prescribed by the FERC.

(DEC T 22 pp 179-80). There is simply no basis in the records of these two cases for the Commission to find that witness Maness was erroneously suggesting that ARO accounting was a "choice" by DEP and DEC. The "choice" identified by witness Maness was the deferral of coal ash costs, which was intended to replace the ratemaking impact of the FASB and FERC, so the Companies could recover coal ash costs in rates. (See DEC T 22 pp 180-81).

The Companies' choice to treat coal ash costs as a regulatory asset, according to witness Maness, meant those costs were precluded from being utility plant in service (to the limited extent they could have qualified as capital instead of expenses) and became "another category entirely." (DEP T 19 p 67). This has nothing to do with ARO accounting,

and the statement in the DEP and DEC Orders that characterizes his testimony as saying the Company "chose" to put coal ash costs in an ARO instead of "plant in service" is a misstatement of Mr. Maness's testimony. How to weigh evidence is within the Commission's prerogative; mischaracterizing material evidence in order to refute it is reversible error.

3. MISSTATEMENT ON WORKING CAPITAL

Another example of the DEP Order misstating the Public Staff position, as a reason for rejecting it, appears in the statement that no party took issue with inclusion of past coal ash costs in "working capital." (DEP R p 673). Public Staff witness Maness's recommendation to remove coal ash costs from rate base (i.e., deny a return on the costs) necessarily meant he took issue with the "working capital" classification. Classifying coal ash costs as "working capital," which is "property used and useful" entitled to a return under N.C. Gen. Stat. § 62-133(b)(1) and (4), is legally incompatible with equitable sharing, which depends on no return for unamortized coal ash costs. Accordingly, the Commission's statement that no party opposed the inclusion of coal ash costs in working capital is

misleading. It ignores the equitable sharing recommendation made by Public Staff witness Maness.

The Public Staff's opposition to putting coal ash costs into rate base was obvious enough in the DEP case. In the DEC rate case witness Maness underscored this position by testifying that the Company's labeling of coal ash costs as "working capital" did not make those costs actual working capital. (DEC T 22 pp 81-82). The evidence does not support the Commission's finding that no party took the position that it was inappropriate to classify coal ash costs as working capital.

B. THE ORDERS ERR BY FRAMING THE EQUITABLE SHARING PROPOSAL AS AN ISSUE OF PRUDENCE INSTEAD OF AN ISSUE OF "MATERIAL FACTS OF RECORD" UNDER N.C. GEN. STAT. § 62-133(d)

DEP and DEC asserted that the legal standard for recovery of its coal ash costs hinges on a showing of prudence, and that fairness or equitable considerations are limited to rate design:

> [DEP witness Wright] explained that the first question is whether the costs were reasonable and prudent in providing service to ratepayers, and, if so, the next question is whether they were used and useful, and, if used and useful, the last stage is to consider what outcome would be fair and equitable. He explained further that it is at the last stage where the Commission

> has leeway to consider different rate designs to achieve a fair and equitable result. He stated that the Public Staff's equitable sharing proposal does not follow this decision tree, but attempts to impose a splitting of costs with no consideration for reasonableness and prudence, etc.

(DEP R p 651; see also DEC R p 1074). This approach presents "prudence" and "used and useful" as the only tests of cost recovery, with the "fair and equitable" result being merely a function of how the cost recovery is allocated among different customer groups.

Under this view of "fair and equitable" there is no possibility for equitable sharing to achieve "reasonable and just" rates under N.C. Gen. Stat. § 62-133(d). The DEP and DEC Orders adopt this legal framework for recovery of coal ash costs:

> In summary, the Commission determines that but for admitted mismanagement and its being a contributing factor to CAMA, its coal ash basin closure costs actually incurred over the period from January 1, 2015 through August 31, 2017 are (a) known and measurable, (b) reasonable and prudent, and (c) used and useful, and, as such, that it is entitled to recover those costs in rates. DEP has further shown that its proposal that these costs be amortized over five years, with a return on the unamortized balance, would have been reasonable.

(DEP R p 667; see also DEP R p 675; DEC R pp 1033, 1136, 1098). Under this legal framework full cost recovery with a return would be mandatory

as a matter of law (apart from mismanagement penalties) once costs have been determined to be prudent and "used and useful" under N.C. Gen. Stat. § 62-133(b)(1).

The DEC Order recognized that the Public Staff was seeking an equitable sharing – in effect, a partial disallowance – on a legal basis different from a full disallowance for imprudence: "For its equitable sharing disallowance, the Public Staff proceeded on an equitable sharing theory, not on a theory of imprudence." (DEC R p 1086). In rejecting the Public Staff's position, the Commission defaulted to its position that a showing of imprudence was the only applicable legal standard: "to permit disallowance there must an actual expenditure shown to be imprudently incurred." (DEC R p 1098).

The DEP and DEC Orders, and the DEP Order on Motion for Clarification, hint at the possibility of adjusting rates under N.C. Gen. Stat. § 62-133(d) by stating that the Commission was allowing a return on deferred coal ash costs in its "discretion." (DEP R pp 674 n. 29, 951; DEC R pp 847, 1099-1100). Yet other parts of the Orders reject that possibility as a legal conclusion. In particular, the DEP Order indicated that equitable sharing had "legal impediments" (DEP R p 668), and "that

the Public Staff's view of the Commission's discretion [to order equitable sharing] is overly broad, however, and not supported with the cited Supreme Court precedent" (DEP R p 669), and that equitable sharing was "of questionable legal sustainability" (DEP R p 684). The DEC Order states that "The same standard applies in this case." (DEC R p 1033). The DEC Order likewise states, "The Commission chose not to accept the 'equitable sharing' concept in the 2018 DEP Case, and does so again, on the same basis." (DEC R p 1097).

Thus the substance, and many of the words, of the DEP and DEC Orders effectively stop all ratemaking consideration after reviewing costs for prudence under N.C. Gen. Stat. § 62-133(b). The Orders fail to weigh equitable sharing under N.C. Gen. Stat. § 62-133(d). This is legal error.

The Commission's legal framework of not looking beyond the N.C. Gen. Stat. § 62-133(b)(1) conditions of prudence and "used and useful" is legal error because N.C. Gen. Stat. § 62-133(d) gives the Commission authority for equitable sharing. When presented with "other material facts of record" and an explicit recommendation for equitable sharing, the Commission had the duty to weigh the evidence and make appropriate findings and conclusions.

Thornburg I affirmed that prudently incurred costs may be equitably shared between ratepayers and shareholders through the mechanism of (a) allowing recovery of such costs over a period of years through an amortization expense, and (b) denying a return on the unamortized balance. Thornburg I, 325 N.C. at 476, 481, 385 S.E.2d at 458, 461. Prudence was not at issue in that appeal; rather, the questions on appeal were whether abandonment costs at a nuclear plant could be deferred and treated as a form of operating expenses, and whether the Commission had authority to allow recovery of those costs through amortization without a return. Id. at 464, 385 S.E.2d 451. The Court ruled that "recovery from ratepayers and shareholders through amortization of costs in rates over a period of years, with no return on the unamortized balance" was not only lawful, it was preferable:

> Strong policy considerations support the Commission and commentators who have concluded that method three [denial of a return on the unamortized balance] is the best of the three[35] alternatives in that it promotes

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[35] The Court identified three policy alternatives:

> [J]urisdictions have generally dealt with the allocation of cancelled plant costs in one of the following three ways:
> (1) recovery of all of the costs from ratepayers, by allowing amortization of the investment plus a return on the unamortized balance;

> "an equitable sharing of the loss between ratepayers and the utility stockholders."

Id. at 480, 385 S.E.2d at 460 (citations omitted). The Court recognized this outcome was authorized by N.C. Gen. Stat. § 62-133(d). Id. at 478, 385 S.E.2d at 459.

The Commission sought to distinguish Thornburg I by noting that the nuclear abandonment costs were not "used and useful," whereas coal ash costs in the present cases were "used and useful" (DEP R p 670), or at least coal ash costs were different because they had been accounted for in an ARO (DEC R p 1105). Even if all coal ash costs were "property used and useful," which they are not, this conclusion is legally flawed. Application of N.C. Gen. Stat. § 62-133(d) is not limited to costs that fail to be incurred for "property used and useful." It exists outside of N.C. Gen. Stat. § 62-133(b) and allows regulatory adjustments (including equitable sharing) to achieve reasonable and just rates independent of

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> (2) recovery of all costs from shareholders through a total disallowance of recovery in rates, instead requiring the utility to write off the entire amount in a single year; or
> (3) recovery from ratepayers and shareholders through amortization of costs in rates over a period of years, with no return on the unamortized balance.

Thornburg I 325 N.C. at 480, 385 S.E.2d at 460.

whether the conditions of N.C. Gen. Stat. § 62-133(b) are met. By ruling that DEP and DEC are "entitled" to recover coal ash costs once those costs are shown to be prudent and "used and useful," the Commission in effect denies it has the legal authority to equitably share coal ash costs.

The DEP and DEC Orders further reject equitable sharing on the grounds that it does not identify specific imprudent costs, thus returning to the singular focus on the N.C. Gen. Stat. § 62-133(b)(1) prudence standard. The Commission reasoned: "A 'determining principle' or prudency standard is missing from the Public Staff's 50/50 'equitable sharing' proposal." (DEP R p 668; see also DEC R p 1097). However, the lack of a "determining principle" did not stop the Commission in the DEC Order from denying a return on the unamortized balance of deferred Lee nuclear plant costs. (DEC R pp 844, 984-87). Nor did the lack of any articulated "determining principle" prevent the Commission from imposing mismanagement penalties in the form of a lower return on the unamortized balance of coal ash costs.[36] (DEP R pp 678-85; DEC R pp

[36] The Commission's "determining principle" for its mismanagement penalty is quite vague:

> Consequently, the Commission in the exercise of its judgment and discretion, determines that a

1136-47). This inconsistency is further error in the Commission's decisions to reject equitable sharing.

As discussed above, the DEP Order concluded that coal ash costs are entitled to a return because they are prudent and "used and useful," and the DEC Order adopted its reasoning from the DEP Order. In doing so, the Commission has written N.C. Gen. Stat. § 62-133(d) out of the law. The Public Staff raised the issue of "material facts of record"[37] that would justify an adjustment of rates so that coal ash costs would be equitably shared pursuant to N.C. Gen. Stat. § 62-133(d). (See DEP T 18, p 310; DEC T 22, p 73, 75, 117-19, 129-31, 134, 141). The Orders do not contain findings that evaluate whether these material facts of record merit an

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> management penalty in the approximate sum of $70 million is appropriate with respect to DEC CCR remediation expenses accounted for in the earlier established ARO with respect to costs incurred through the end of the test year as adjusted. This penalty is based on the totality of evidence contained in the record, as recited in detail above, and does not result in confiscation.

(DEC R p 1146) (emphasis added) (see also DEP R p 685).

[37] The "material facts" were both the environmental violations surrounding coal ash management and the magnitude and uniqueness of the costs that do not result in any additional electricity production, as discussed elsewhere in this brief.

equitable sharing. Rather, the Orders stop at the "prudence" and "used and useful" analysis, and reject "equitable sharing" on grounds that mistakenly relate to N.C. Gen. Stat. § 62-133(b) instead of N.C. Gen. Stat. § 62-133(d). (See, e.g., DEP R p 667). With the issue of equitable sharing squarely before it, the Commission should at least have weighed the evidence presented to it, and made findings that explained how and why it was deciding the ratemaking outcome of any "material facts of record" under N.C. Gen. Stat. § 62-133(d), beyond the conclusions of "prudent" and "used and useful" under N.C. Gen. Stat. § 62-133(b)(1).

G. THE ORDERS REJECT EQUITABLE SHARING BASED ON MISINTERPRETATIONS OF LAW

The Commission concluded that the Public Staff's proposal for an equitable sharing of coal ash costs lacked legal support. This was an important part of the Commission's decision to reject equitable sharing. It is also legal error.

In particular, the Commission concluded that "the Public Staff's view of the Commission's discretion is overly broad, however, and not supported with the cited Supreme Court precedent." (DEP R p 669) (emphasis added). Similarly, the Commission held that "the authority the Public Staff relies upon to support its 'equitable sharing' concept does not

support the exercise of discretion as the Public Staff maintains." (DEP R p 670) (emphasis added) (see also DEC R p 1104, 1106-07). The Commission further found the Public Staff's 50/50 equitable sharing proposal to be "unfairly punitive and of questionable legal sustainability." (DEP R p 684; DEC R p 1145) (emphasis added). Finally, the Commission stated that "[e]ven if the equitable sharing mechanism were without legal impediments, the Commission chooses in the exercise of its discretion not to adopt this recommendation but instead on an alternative remedy addressed below." (DEP R p 668) (emphasis added).

The "alternative remedy" chosen by the Commission in lieu of equitable sharing is the mismanagement penalty of $30 million for DEP and $70 million for DEC. (DEP R pp 621, 678-85; DEC R pp 1100, 1136-47). There is no explanation as to why the Commission thought it had no discretion to award equitable sharing, but it did have discretion to award a mismanagement penalty.

While the DEP Order makes clear that the rejection of equitable sharing was based on the Commission's legal conclusion that it was not lawful, the DEC Order contained inconsistent conclusions. The DEC Order states in places that the Commission was awarding a return on

coal ash costs as a matter within the Commission's discretion. This is contradicted by the Commission's legal conclusion -- adopted from the DEP Order -- that it lacked legal authority to order equitable sharing: "The Commission chose not to accept the 'equitable sharing' concept in the 2018 DEP Case, and does so again, on the same basis." (DEC R p 1097). This erroneous conclusion from the DEP Order, adopted in the DEC Order, was drawn from the Commission's misinterpretation of two decisions by the Court that involved ratemaking for certain costs of the Shearon Harris nuclear plant: Thornburg I and Thornburg II.

1. THE COMMISSION MISINTERPRETED THORNBURG I

One reason the Commission gave for rejecting the idea that it had discretion to order equitable sharing of deferred coal ash costs is that such costs are "used and useful," whereas the Shearon Harris nuclear abandonment costs that were equitably shared in Thornburg I were found not to be "property used and useful." (DEP R pp 669-70; see also DEC R p 1105). Although the Commission also stated that if it had the authority to adopt the equitable sharing proposal, it would decline to do so (DEP R pp 668, 674 n. 29), the real focus of the DEP Order's reasoning is on the "used and useful" character of coal ash costs. The idea that the

Commission could exercise its discretion to award a return, rather than recognizing an entitlement to a return on coal ash costs, appears to be an afterthought that surfaces tentatively in the DEP Order (id.) and more clearly in the DEP Order on Motion for Clarification (DEP R pp 951-52). The Commission's shift to a new legal conclusion arose as it became evident that there would likely be challenges on appeal to the "used and useful" conclusion. However, the central tenet of the Commission's DEP and DEC Orders is that Thornburg I discretion to deny a return is not applicable to coal ash cleanup costs, because coal ash cleanup costs are "property used and useful" in the Commission's opinion, unlike nuclear abandonment costs. (See DEP R pp 669-71).

The Commission's legal theory that under Thornburg I equitable sharing applies only to costs that are not "used and useful," and that equitable sharing therefore does not apply to coal ash costs, is error for the following reasons.

First, N.C. Gen. Stat. § 62-133(d) allows the Commission to set "reasonable and just rates" on the basis of facts that fall outside the N.C. Gen. Stat. § 62-133(b) factors. Equitable sharing is legally permissible -- though not compelled -- as a means to achieve reasonable and just rates

under N.C. Gen. Stat. § 62-133(d) regardless of "used and useful" status. Nothing in N.C. Gen. Stat. § 62-133(d) limits the type of "material facts" or remedies that may be considered to achieve reasonable and just rates. Even if coal ash costs were "property used and useful" that required a return under N.C. Gen. Stat. § 62-133((b)(1) and (4), which is not the case, the Commission can still adjust rates under N.C. Gen. Stat. § 62-133(d). Denying a return on the unamortized balance of deferred costs is one way to adjust rates.

Second, many of the coal ash costs are in the nature of operating expenses (e.g., excavation and transportation) that fall under N.C. Gen. Stat. § 62-133(b)(3), as discussed earlier. There is no evidentiary or legal basis for the Commission to conclude that those coal ash costs are all "property used and useful" in contrast to the abandoned nuclear plant costs that were treated as operating expense in Thornburg I.

N.C. Gen. Stat. § 62-133 requires a cost be either an expense or "property used and useful." An expense capitalized as a regulatory asset is still an expense for ratemaking purposes; capitalizing it changes the timing on when it may be recovered or presumed recovered in rates, but

does not change the character of the expenditure from expense to utility plant.

The Commission determined that because coal ash costs were deferred, Company investors would be deprived of the time value of their money unless allowed to recover a return on coal ash costs. (DEC R p 1100). This is a correct statement as far as it goes, but it fails to address the legal error of the Commission, as well as material facts of record that support a different outcome. By deferring coal ash operating expenses, the Commission allowed the Companies to avoid writing them off. Thus by the extraordinary action of deferral, which in effect is a lawful form of what would otherwise be considered to be unlawful retroactive ratemaking, the Commission has already extended extraordinary protection to investors, even without a return on the unamortized balance. Thornburg I and past Commission decisions like the PSNC Order show that deferred costs may be denied a return. There is nothing in the law that requires a return on such costs to protect investors from being deprived of the time value of money. There is a law that requires the Commission to weigh evidence of "other material facts of record" to determine if denial of a return is necessary to achieve "reasonable and

just rates." N.C. Gen. Stat. § 62-133(d). The Public Staff submits that coal ash environmental violations are "material facts of record" that the Commission should have considered in determining whether to award a return on coal ash costs, in addition to fact of the investors' desire to recover all time value of their funds.

The Thornburg I decision was followed by a water and sewer utility case where the Court held that: "Costs for abandoned property may be recovered as operating expenses through amortization, but a return on the investment may not be recovered by including the unamortized portion of the property in rate base." CWS, 335 N.C. at 508, 439 S.E.2d at 135. To distinguish the Thornburg I and CWS cases from coal ash costs, the Commission stated:

> The nuclear plant discontinuance costs at issue in Thornburg I were not "deferred operating expenses" like deferred CCR ARO costs and the abandoned water treatment plant costs at issue in Carolina Water likewise were not deferred "regulatory asset" costs comparable to either deferred nuclear plant discontinuance costs or deferred CCR ARO costs. The Commission notes that it has authorized deferral of capital costs in utility plant (e.g., combined cycle natural gas fired electric generating plants) completed and placed in service prior to the test year or prior to the end of the test year of a general rate case to prevent loss of recovery of costs. The costs so deferred are not test year recurring operating expenses but deferred capital costs,

> added to rate base and eligible for a full return. A used and useful analysis is appropriate to determine recovery of these costs. Docket No. E-22, Sub 532 (Dec. 22, 2016) (2016 DNCP Rate Order)[.]

(DEC R pp 1102-03) (footnote omitted). Where the Commission says "nuclear plant discontinuance costs at issue in Thornburg I were not 'deferred operating expenses'," it misinterprets Thornburg I. The Court specifically upheld the Commission conclusion that abandoned nuclear plant costs that had been deferred were appropriately treated as a form of operating expenses: "we hold that the Commission's order does not err as a matter of law in authorizing CP&L to continue to recover a portion of the cancellation costs of the abandoned Harris Plant as operating expenses through amortization." Thornburg I 325 N.C. at 476, 385 S.E.2d at 458 (emphasis added). It also ignores the fact that had deferral of the abandoned nuclear plant costs not been allowed, they would have been written off as a loss expense. Many of the coal ash costs were operating expenses, just as the Thornburg I nuclear abandonment costs were treated as operating expenses, and thus the Commission's effort to distinguish Thornburg I on the grounds that coal ash costs were "used and useful" is legal error.

2. THE COMMISSION MISINTERPRETED THORNBURG II

Furthermore, the Commission misinterpreted the holding of Thornburg II when it stated that "[t]he Court held that the Commission did not possess the discretionary power to effectuate its 'equitable sharing' decision." (DEP R p 671; DEC R p 1106). The Commission then concluded that "Commission and Supreme Court precedent . . . are insufficient support for the Public Staff's 'equitable sharing' concept." (Id.). This conclusion is legal error because Thornburg II did not prohibit equitable sharing as the Public Staff has proposed it. Rather, it supported equitable sharing.

The DEP and DEC Orders accurately state that Thornburg II involved $570 million of prudent "costs the Commission considered were incurred in connection with facilities to be shared with [Shearon Harris nuclear plant] Units 2, 3, and 4, units that the Company had abandoned." (DEP R p 670; DEC R p 1106). The DEP and DEC Orders then state that the Commission in the 1988 rate case decided to classify $180 million of those costs as "abandonment costs" that were to be borne by

shareholders,[38] with the remaining $390 million included in rate base. (Id.). The Commission in 1988 rationalized the different regulatory treatment of $180 million of the excess common nuclear facilities and $390 million of the excess common facilities million as effectuating an "equitable sharing." Thornburg II 325 N.C. at 495, 385 S.E.2d at 469.

The Court reversed this Commission concept of equitable sharing of excess facilities costs for the Shearon Harris nuclear plant:

> If the facilities are *excess*, as a matter of law, they cannot be considered "used and useful" as that term is used in N.C.G.S. § 62-133(b)(1). *See, e.g., General I*, 281 N.C. at 351, 189 S.E.2d at 729. Since the excess common facilities are not "used and useful," they cannot be included in the rate base. N.C.G.S. § 62-133(b)(1). The Commission committed an error of law in including $389,442,000 in the rate base because this amount was part of the $570,000,000 used to construct the excess common facilities to serve abandoned Harris Units 2, 3, and 4.

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[38] This part of the DEP and DEC Orders is factually inaccurate, as Thornburg II did not require shareholders to bear all the abandoned plant costs. The Commission's order in this 1988 Carolina Power and Light Company rate case required the $180 million to be treated like other cancellation costs, which were equitably shared between ratepayers and shareholders by allowing recovery over a ten-year amortization but with no return on the unamortized balance. See Finding of Fact No. 11 in the 5 August 1988 "Order Granting Partial Increase in Rates and Charges" in Docket No. E-2, Subs 333 and 537. Seventy-Eighth Report of the North Carolina Utilities Commission Orders and Decisions, p 246.

Thornburg II 325 N.C. at 495, 385 S.E.2d at 469 (emphasis in original). Contrary to the DEP and DEC Orders, Thornburg II does not contend that the Commission lacks authority to exercise its discretion to effectuate an equitable sharing. Rather, the Court rejected the idea that any part of excess plant could qualify for rate base as "used and useful" utility plant. Only the prudently incurred costs of "property used and useful" are entitled to rate base treatment (i.e., a return on the investment), and the Court held that no such entitlement existed for the excess plant costs at the Shearon Harris plant.

The Commission's attempt in the Carolina Power and Light Company case to classify $390 million of excess plant costs in rate base, then state this was a form of equitable sharing because another $180 million was not in rate base, did not distract the Court from looking at the reality that the Commission had improperly treated the $390 million as costs that were legally entitled to a return. The Court in Thornburg II concluded:

> A fair reading of the findings and conclusions of the Commission in this case makes it clear that if Harris Units 2, 3, and 4 had never been undertaken, CP&L would have avoided the approximately $570,000,000 in costs for the common facilities to serve the abandoned Units 2, 3, and 4. The Commission having found that the

> decision permitting the incurring of these costs was prudent, it is appropriate that these costs be treated as cancellation costs of the abandoned units and recovered as operating expenses through amortization.

Id. at 498, 385 S.E.2d at 471. The Court remanded the case with instructions to treat the $390 million as cancellation costs, like the $180 million previously treated as cancellation costs. Id. Those cancellation costs were amortized over a period of years with no return on the unamortized balance.[39]

Thornburg II resulted in excess plant costs being equitably shared between ratepayers and shareholders because amortization with no return imposes a cost on both sides. Thornburg I expressly recognized and endorsed this equitable sharing outcome. On remand from Thornburg II, the Commission also acknowledged that: "we believe that by preserving cash flow for the Company over the amortization period and removing the $389,442,000 from rate base, we have considered the interest of both the stockholders and the customer." Order on Remand

[39] On remand, the Commission approved a settlement among the parties wherein the $390 million was removed from rate base (i.e., no return was allowed) and amortized over slightly less than six years. Eightieth Report of the North Carolina Utilities Commission Orders and Decisions, pp 140-41.

issued 10 July 1990 in Docket No. E-2, Subs 333 and 537. Eightieth Report of the North Carolina Utilities Commission Orders and Decisions, p 140.

For the Commission to now read Thornburg II to support a conclusion that the Commission did not have the discretionary power to effectuate an equitable sharing of excess plant costs (DEP R p 671) is, therefore, a misinterpretation of the Court's decision. The conclusion flowing from this misinterpretation -- that "Commission and Supreme Court precedent . . . are insufficient support for the Public Staff's 'equitable sharing' concept" (id.) -- is legal error. Thornburg II does not stand for the proposition that the Commission lacks the discretionary authority to effectuate an equitable sharing between ratepayers and shareholders. To the contrary, it upholds that authority, which is consistent with N.C. Gen. Stat. § 62-133(d) and the Public Staff's equitable sharing recommendation. The Commission has committed legal error by relying on Thornburg II for the proposition that the Commission lacks discretion to allow an equitable sharing of coal ash costs.

3. EQUITABLE SHARING IS NOT UNCONSTITUTIONAL

Finally, the Commission suggests that if rates are not sufficient to allow a utility to recover all its costs, including a return for investors, the rates are an unconstitutional taking, at least if the costs were prudently incurred and are "used and useful." (DEP R p 553). Regulated utilities receive a monopoly franchise right from the state to operate without competition in their territory in exchange for being subject to rate regulation by the state. Rate regulation, including some instances where the utility is not allowed full cost recovery or is required to share revenues with its ratepayers, is within the police powers of the state. See State ex rel. Utils. Comm'n v. N.C. Nat. Gas Corp., 323 N.C. 630, 642-45, 375 S.E.2d 147, 154-56 (1989); State ex rel. Utils. Comm'n v. Carolina Water Serv., 225 N.C. App. 120, 135-36, 738 S.E.2d 187, 197-98 (2013). Indeed, in other parts of its DEP and DEC Orders, the Commission recognized that it could authorize rates at a level resulting in less than a fair return to the utility: "If the Commission finds that a utility has not been soundly managed, it may penalize a utility by authorizing less than a 'fair return.'" (DEP R p 684) (citing State ex rel. Utils. Comm'n v. General Telephone Co., 285 N.C. 671, 208 S.E.2d 681 (1974) and State ex rel. Utils. Comm'n v. Morgan, 277 N.C. 255, 177 S.E.2d 405 (1970)).

Utility shareholders, like any other corporate shareholders, are not guaranteed a return on their money. In describing the impact of writing off coal ash costs if no deferral were granted, DEP and DEC projected positive returns on equity of 7.47% and 7.61%, respectively. (DEP R pp 25-26). That is below their authorized return, but hardly confiscatory of utility property.

From a policy perspective, which is relevant to the exercise of the police powers of the state, an equitable sharing would balance the interests of the Companies who bear some responsibility for coal ash costs due to their years of non-compliance with groundwater and surface water environmental regulations, against the interests of ratepayers who are being asked to pay a second time for disposal of coal ash after the Companies' initial disposal efforts proved inadequate for environmental protection. Given the public interest at stake and the particular circumstances of the present cases, equitable sharing would achieve a balance that is within the police powers of the state and not unconstitutionally confiscatory. The Commission's conclusion to the contrary is legal error, and is yet another reason the Commission has unlawfully rejected consideration of equitable sharing.

Conclusion for Part III

In sum, there are multiple independent reasons why the Commission's findings and conclusions on the "used and useful" ratemaking classification of coal ash costs, and then its effort to deny it made such conclusions, are reversible error. The coal ash costs are to a large extent in the nature of operating expenses (e.g., excavation and transportation). Neither ARO accounting nor deferral converts those operating expenses into "property used and useful" that goes into rate base. Just as in Thornburg I, the Commission had the legal authority to equitably share those costs by denying a return on the unamortized balance. The Commission was under a misapprehension of the law when it concluded that equitable sharing faced legal impediments and was not legally sustainable. Thornburg I does not hold equitable sharing is limited to abandoned plant costs or otherwise is limited to costs that are not "used and useful." Even if all the coal ash costs were expended for "property used and useful," which is not the case, the Commission still had authority under N.C. Gen. Stat. § 62-133(d) to approve equitable sharing. The Court's holding in Thornburg II does not prohibit

Commission discretion to order equitable sharing. Nor does constitutional due process protection against property confiscation prohibit equitable sharing. The Commission's conclusions to the contrary are legal error.

The foregoing errors are material. A 50%-50% equitable sharing would have relieved ratepayers of one-half the past coal ash costs included in these cases, amounting to hundreds of millions of dollars. In the longer term, DEP and DEC have previously estimated coal ash cleanup costs will exceed $5 billion.[40] The erroneous rejection of equitable sharing ultimately may expose ratepayers to over billions of dollars of costs that they would not bear under the Public Staff's proposal.

The erroneous rejection of equitable sharing also creates moral hazard: DEP and DEC now have a strong financial incentive to maximize coal ash cleanup costs because they will profit from a return on those costs as well as recovery of those costs.

[40] A recent DEQ order requiring excavation of all the Companies' North Carolina coal ash basins may result in an additional $4–5 billion of coal ash remediation costs, according to Duke Energy. See https://news.duke-energy.com/releases/duke-energy-responds-to-latest-milestone-in-the-safe-basin-closure-process

The Commission's singular focus on ensuring cost recovery for DEP and DEC, while dismissing "other material facts of record" under N.C. Gen. Stat. § 62-133(d) for erroneous legal reasons and on inconsistent reasoning, runs afoul of the long-established principle for ratemaking in North Carolina:

> The primary purpose of Chapter 62 of the General Statutes is not to guarantee to the stockholders of a public utility constant growth in the value of and in the dividend yield from their investment, but is to assure the public of adequate service at a reasonable charge.

State ex rel. Utils. Comm'n v. Gen. Tel. Co., 285 N.C. 671, 680, 208 S.E.2d 681, 687 (1974).

V. THE COMMISSION ERRED BY FAILING TO WEIGH SUBSTANTIAL EVIDENCE OF ENVIRONMENTAL VIOLATIONS

A. THE COMMISSION FAILED TO WEIGH EVIDENCE OF ENVIRONMENTAL VIOLATIONS WITH RESPECT TO THE EQUITABLE SHARING ISSUE

1. THE COMMISSION'S DECISION

The DEP and DEC Orders reject evidence of the equitable sharing of coal ash costs without ever weighing environmental violations as a material fact under N.C. Gen. Stat. § 62-133(d). The Commission declined

to consider this evidence on the basis of two erroneous legal conclusions: that equitable sharing is of doubtful legality and unsupported by case law (see DEP R pp 669-70, 684; DEC R pp 1106-07, 1145), and that the Commission has no role in determining the existence of environmental violations (DEP R p 681; DEC R pp 1085, 1142).

The erroneous conclusion that equitable sharing was of doubtful legality and unsupported by case law is addressed previously in this brief. The Commission also concluded that it would not consider evidence of environmental violations on what amounts to jurisdictional grounds:

> This Commission's responsibility is cost recovery. Environmental regulators must oversee protection of the environment and public health. The Commission's responsibility is to determine whether coal ash remediation costs as required by environmental regulators should be recoverable through rates.

(DEP R p 681; DEC R p 1142). Likewise:

> The Commission's duty is not to determine liability to and assess damages for torts committed by management for injury to the environment or to receptors of contaminants. Environmental regulators and courts of general jurisdiction are the appropriate arbitrators of those disputes.

(DEC R p 1085). As discussed below, these statements confuse environmental enforcement (a DEQ responsibility) with the

Commission's responsibility for ratemaking that considers "other material facts" under N.C. Gen. Stat. § 62-133(d).

2. SUMMARY OF THE EVIDENCE OF ENVIRONMENTAL VIOLATIONS RELEVANT TO EQUITABLE SHARING

The record is replete with evidence of environmental violations that the Commission declined to weigh. Public Staff witness Lucas presented evidence that environmental violations caused by coal ash had occurred at all of DEP's coal-fired power plants in North Carolina. (See, e.g., DEP Doc. Ex. 1119, 1122). Public Staff witness Junis likewise presented evidence that environmental violations caused by coal ash had occurred at all of DEC's coal-fired power plants in North Carolina. (See, e.g., DEC Doc. Ex. 2043-45). The Public Staff recommended an equitable sharing of coal ash costs on the basis that DEP's culpability for coal ash environmental violations was a material fact of record under N.C. Gen. Stat. § 62-133(d).[41] (See DEP T 18 pp 274, 282-85, 308-16, 340; DEP R pp 642-45; DEC T 26 pp 646-50, 727, 738-42).

[41] This was not the only reason the Public Staff offered in support of equitable sharing. See, e.g., testimony of witness Maness at DEP T 18 pp 308-09 and DEC T 22 p 71-72. The Public Staff distinguished the Companies' culpability for violations, with a recommended equitable sharing of most of the coal ash costs under N.C. Gen. Stat. § 62-133(d),

The Public Staff's evidence of environmental violations included information submitted by DEP and DEC to DEQ regarding non-compliance with NPDES permit conditions, unauthorized discharges, and groundwater contamination from DEP coal ash basins. The evidence also included the DEP and DEC guilty pleas to federal environmental violations, and violations subsequently reported by the federal Court Appointed Monitor. (See DEP Doc. Ex. 757-904, 1119, 1120, 1123, 2032-2105, 3623-3789, and 3807-22; DEC Doc. Ex. 775-853, 1977-1992, 1993, 1994-2042, 2043, 2044-45, 2066-82, 2083-95, 2108, 2162, 8169-71, 10646-86).

Of particular note are groundwater violations. Lucas Exhibit 6 initially showed 8,253 exceedances of groundwater standards at or beyond the compliance boundaries, sorted by type of regulated constituent and by DEP plant. (DEP Doc. Ex. 1118). At the time of his initial filed testimony, witness Lucas noted that some of the exceedances were still being reviewed to determine if they were due to naturally occurring background concentrations, or instead were due to migration

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from imprudence, which would justify a total disallowance of the associated costs under N.C. Gen. Stat. § 62-133(b). (DEP T 18 pp 274, 309; DEC T 22 p 73; DEC T 26 pp 726-27).

from coal ash basins. (DEP T 18 pp 254-56; see also note on Lucas Exhibit 6 at DEP Doc. Ex. 1118). Witness Lucas concluded that DEP's own sampling data supported the existence of violations:

> The approximately 8,000 groundwater exceedances currently reported to DEQ from DEP monitoring wells are further indication of the breadth of environmental violations. Those exceedances are undergoing DEQ review to compare them to background levels of the reported constituents. After seeing the data and DEP's proposed PBTVs [provisional background threshold values], it is reasonable to conclude generally that there will be a number of exceedances that are attributable to migration of contaminants from DEP's ash basins.

(DEP T 18 p 284).

Public Staff witness Lucas subsequently filed a Revised Lucas Exhibit 6 to update the ongoing analysis of background exceedances compared to coal ash exceedances. (DEP Doc. Ex. 1123). He explained that DEQ had not done its assessment of which exceedances were due to natural background and which were caused by coal ash until October [2017]. (DEP T 19, p 83). Revised Lucas Exhibit 6 presents updated evidence showing 2,857 groundwater violations and an additional 151 exceedances where the question of whether they were coal ash violations or natural background readings had yet to be determined (labeled as "TBD" on the exhibit). (DEP Doc. Ex. 1123).

Thus, once the Public Staff acquired DEQ's review of exceedances shortly before the DEP rate case hearing, and found many exceedances were due to natural background causes, there still remained at least 2,857 exceedances caused by DEP's ash basins. Because those exceedances were caused by DEP's ash basins, they were necessarily "violations" of DEQ regulations.[42] 15A NCAC 2L .106. Witness Lucas testified that the revised number did not change his recommendations. (DEP T 18 p 290).

Similarly, Public Staff witness Junis testified that

> DEC, by its failure to comply with environmental regulations, has accumulated a record of significant

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[42] For example, 15A NCAC 02L .106 provides in part:

> (d) Any person conducting or controlling an activity that is conducted under the authority of a permit initially issued by the Department on or after December 30, 1983 pursuant to G.S. 143-215.1 or G.S. 130A-294 and that results in an increase in concentration of a substance in excess of the standards:
>
> . . . .
>
> (2) at or beyond a compliance boundary: the person shall respond in accordance with Paragraph (f) of this Rule, assess the cause, significance and extent of the <u>violation</u> of standards and submit the results of the investigation, and a plan and proposed schedule for corrective action to the Secretary.

(Emphasis added).

> environmental violations caused by leaking coal ash basins, which have resulted in actual or potential impacts to groundwater, surface waters, soils, wildlife, and/or human health. These violations include unauthorized seeps that DEC has admitted and 3,091 groundwater violations confirmed by DEC's own groundwater monitoring data.

(DEC T 26 p 646; see also, pp 698-702; DEC Doc. Ex. 2043).

Public Staff witness Lucas noted that there was no adjudication that DEP had committed environmental violations, other than the federal criminal case, because the legal actions against the Company for coal ash contamination had largely been settled or resolved on grounds that did not required findings of wrongdoing. (DEP T 18, pp 283). In particular, the partial summary judgments in State enforcement actions brought by DEQ, and settlement of the Sutton administrative penalty action, were resolved on the condition that DEP would take remedial actions with regard to coal ash, including closure of the ash basins. (DEP T 18 pp 264-65; DEP T 22 pp 21-24; DEP Doc. Ex. 2111-14, 3000-07). With regard to DEC, witness Junis noted that "there is compelling evidence of environmental violations which are addressed by the settlements." (DEC T 26 p 737, see also pp 739-40).

Public Staff witness Lucas identified the source of the violations data as discovery received from DEP:

> Q. What information do you have that supports that, apart from the allegations in the lawsuit?
>
> A. The Company's response to our data request. We took data from the Company's information, and that's how we developed our number of violations.
>
> Q. What type of data?
>
> A. This is groundwater monitoring data.

(DEP T 19 p 46). He indicated DEQ was also a source of his groundwater violations data. (DEP T 19, pp 15, 28). This testimony is not contradicted by any other witness or any other evidence, but even if it had been, the Commission would still have been obligated to weigh it.

Witnesses Lucas and Junis provided corroboration of the groundwater violations from another independent source. Environmental audits conducted for the court-appointed monitor as part of the judgment in the federal criminal case against DEP and DEC show exceedances "caused by ash basins" (i.e., not caused by natural background levels) at every DEP and DEC coal-fired plant in North

Carolina. (DEP T 19 p 45; see DEP Doc. Ex. 1119; DEC T 26 pp 699-700).[43]

In addition to the groundwater violations from DEP's and DEC's coal ash, there was evidence of unpermitted discharges, including seeps. Discharges made, caused or permitted by the Companies from their ash basins into waters of the State are violations of N.C. Gen. Stat. § 143-215.1, where not authorized in an NPDES permit. The evidence includes admission by DEP and DEC, in the Joint Factual Statement appended to its guilty plea in the federal case, to "nearly 200 distinct seeps" that were not permitted. (DEP T 19 pp 44, 73; DEC Doc. Ex. 816).

DEP witness Wright admitted that DEP had unauthorized discharges from its ash basins into surface waters in violation of state and federal laws. (DEP T 20 p 196). Public Staff Wells Cross Examination Exhibit 5 consists of discovery responses from DEP that show seventeen admittedly engineered toe drains that are not authorized by NPDES permits - seeps deliberately constructed by DEP to allow drainage from

[43] For a summary of DEC independent audit reports on groundwater exceedances, see DEC Doc. Ex. 2044.

its ash basins without regulatory approval and in violation of N.C. Gen. Stat. § 143-215.1. (DEP Doc. Ex. 2031; see also DEP T 22 p 16).

Similarly, unauthorized seeps were identified at all DEC coal-fired plants in North Carolina. (See DEC Doc. Ex. 2045). DEC witness Wells acknowledged that the Company had provided a list of twelve engineered seeps at its coal-fired plants for which the DEC did not yet have NPDES permits. (DEC T 26 pp 30-31; DEC Doc. Ex. 8170-71). In response to a Notice of Violation, DEC agreed to pay penalties to DEQ for unauthorized seeps as part of a Special Order by Consent relating to the Riverbend plant. (DEC Doc. Ex. 1994-2002). DEC in effect admitted its violations in the Special Order by Consent:

> Duke Energy Carolinas is responsible for unauthorized discharges of wastewater from the area around Riverbend Steam Station's coal ash surface impoundments, as alleged in a Notice of Violation issued by the Department of Environmental Quality (Department) on March 4, 2016 (subsequently modified on March 24, 2016). These unauthorized discharges are the result of Duke Energy Carolinas' operation of unlined coal ash surface impoundments and emanate from the unlined coal ash surface impoundments.

(DEC Doc. Ex. 1995). Also following Notices of Violation, DEC agreed to pay penalties for unauthorized seeps at the Allen, Marshall, and Rogers

(formerly called Cliffside) plants. (DEC Doc. Ex. 2018-42). The Special Order by Consent stated in part:

> The coal ash basins at the Duke Energy Facilities are unlined, having no impermeable barrier installed along their floors or sides. Earthen basins and dike walls are prone to the movement of liquid through porous features within those structures through a process known as seepage. Each of the Duke Energy Facilities covered by this Special Order exhibits locations adjacent to, but beyond the confines of, the coal ash basins where seepage of coal ash wastewater from the coal ash basins may intermix with groundwater, reach the land surface (or "daylight"), and may flow from that area. Once such seepage reaches the land surface, it is referred to as a "seep." Each of the seeps identified at the Duke Energy Facilities and addressed in this Special Order exhibit some indication of the presence of coal ash wastewater.

(DEC Doc. Ex. 2020).

The Public Staff presented evidence of environmental violations[44], summarized above, as a basis for equitable sharing, consistent with the "other material facts of record" provision in N.C. Gen. Stat. § 62-133(d), rather than as a total disallowance of all coal ash costs for imprudence. (See DEP T 18 p 340; DEC T 26 pp 723-27). The DEP and DEC Orders summarize the evidence of parties on both sides (see DEP R pp 623-63;

[44] Other parties presented additional evidence of environmental violations, and DEP presented its own evidence in rebuttal. To avoid making this brief even longer, that evidence is not discussed here.

DEC R pp 1034-81). However, the Commission's legal conclusion that issues of environmental violations were the exclusive province of environmental regulators (DEP R p 681; DEC R p 1142; see also DEC R p 1085), resulted in the Commission not weighing evidence of environmental violations as material facts relevant to setting just and reasonable rates under N.C. Gen. Stat. § 62-133(d). This is error of law, as discussed in part V. C. below.

B. THE COMMISSION ALSO FAILED TO WEIGH EVIDENCE OF ENVIRONMENTAL VIOLATIONS WITH RESPECT TO EXTRACTION AND TREATMENT COSTS AT THE SUTTON AND BELEWS CREEK PLANTS

1. THE COMMISSION'S DECISION

The DEP Order also decides that there are no environmental violations justifying "specific cost disallowance proposals" (i.e., full disallowance of costs for unreasonableness) for certain Sutton plant costs because "there is no finding in the litigation brought against the Company, or admission by the Company in that litigation, that any 'violation' actually occurred." (DEP R p 658). The DEP Order further states:

> Based upon the evidence presented in this case, with the exception of the federal criminal case to which DEP pled

> guilty, DEP has not been found liable for violations of the law. As stated above, the Commission will not use settlement agreements to find liability.

(DEP R p 663). The DEC Order made virtually identical rulings with respect to costs of extraction wells and treatment of tainted groundwater at the Belews Creek plant. (DEC R pp 1118, 1124). Thus, the Commission in effect ruled that in the absence of a guilty finding against the Companies or an admission of guilt by the Companies, it would not consider any evidence that the costs of groundwater extraction wells and treatment at the Sutton and Belews Creek plants were the result of environmental violations.

2. SUMMARY OF THE EVIDENCE OF ENVIRONMENTAL VIOLATIONS THAT RESULTED IN EXTRACTION WELL AND TREATMENT COSTS

The Commission's decision not to consider any evidence of environmental violations, other than final adjudications of guilt by other tribunals or admissions by the Companies, meant that it necessarily did not weigh substantial evidence presented by the Public Staff. That evidence included testimony from Public Staff witness Lucas, who recommended disallowance of approximately $6.7 million of costs for extraction wells and water treatment, primarily at the Sutton plant, to

remediate off-site groundwater contamination. His recommendation falls under N.C. Gen. Stat. § 62-133(b) on the basis that these costs caused by violations of law are unreasonable, and unreasonable costs cannot be charged to ratepayers as a matter of law. Witness Lucas testified that the $6.7 million cost should be entirely disallowed because it was not a "compliance" cost – it would not have been incurred to comply with CAMA or the CCR Rule but for the environmental violations of DEP. (DEP T 18 pp 262-65, 274-80; DEP T 19 pp 13-16, 46-47, 84-86; DEP R p 642).

With regard to DEC's Belews Creek plant, Public Staff witness Junis initially identified $1,288,526 system-wide costs incurred for extraction wells and treatment of groundwater, which he maintained were costs that would not have been incurred to comply with CAMA and the CCR Rule in the absence of environmental violations. (DEC R p 1058). Based on updated information from DEC, his supplemental testimony increased this amount by another $206,553. (DEC R p 1059; see also DEC T 26 pp 644-45, 731-34, 753-54).

The Public Staff's testimony is corroborated by the actual Settlement Agreement between DEQ and DEC/DEP. (DEP Doc. Ex. 3100-3112). Moreover, witness Lucas relied not only on Duke Energy's

admission of offsite groundwater impacts in the Settlement Agreement, but on actual groundwater data provided by DEP. (DEP T 19 p 15; see also DEP Doc. Ex. 1123). He explained that the data provided an independent basis for establishing groundwater violations at Sutton, apart from the DEQ findings (which DEP contested) and the Settlement Agreement:

> Q. Okay. You were asked some questions about settlements and lawsuits.
>
> Is it your position that a lawsuit alleging environmental violations, by itself, would be evidence of the violations?"
>
> A. No.
>
> Q. And why is that?
>
> A. Anyone can file a lawsuit at any time, but the lawsuits that I reference in my Lucas Exhibit Number 8 were the result of true groundwater violations. That's why the Public Staff did its own investigation and determined whether they were true groundwater violations.
>
> Q. What information do you have that supports that, apart from the allegations in the lawsuit?
>
> A. The Company's response to our data request. We took data from the Company's information, and that's how we developed our number of violations.
>
> Q. What type of data?

A. This is groundwater monitoring data.

Q. Turning to the settlements in the cases involving the Sutton plant where the Company paid out settlement amounts, does the mere fact that there is a settlement, by itself, establish that there has been a violation?

A. No.

Q. And what information did you draw on to come to the conclusion that there were violations?

A. Looking at the Company's records, and also, in the Sutton settlement, the Company agreed to do extraction and treatment of groundwater at three of its DEP power plants. The Company wouldn't have had to extract and treat clean groundwater.

Q. Did you examine any groundwater exceedance data that supported the allegations?

A. Yes. That was in the response to that data request I referred to. That's where I got the data on violations.

(DEP T 19 pp 45-47).

Witness Lucas testified that the cost to extract and treat groundwater at Sutton was necessary <u>only</u> because DEP had violated the 2L Rule with offsite coal ash contamination:

The second category is costs to remedy environmental violations where the costs exceed what CAMA would have required in the absence of environmental violations. An example would be settlements where DEP agreed to take remedial measures, such as extraction

> wells at Sutton, such that the settlement cost more than it would have been necessary to pay for CAMA compliance without violations.

(DEP T 18 p 278; see also DEP T 19 pp 13-14). Public Staff witness Junis testified the same with respect to extraction well and treatment costs for the DEC Belews Creek plant. (DEC T 26 pp 644-45, 731-34, 753-54).

Witness Lucas's position that extraction and treatment costs at Sutton would not have been required by CAMA in the absence of groundwater contamination caused by DEP's ash basin is further supported by DEP's Settlement Agreement:

> A. Consistent with 15A NCAC 2L .0106 Duke Energy shall implement accelerated remediation at the Sutton Plant on the following terms and conditions:
>
> (1) Duke Energy will commence installation of extraction wells on the eastern portion of the Sutton Plant property where data show constituents associated with the ash basins at concentrations over the 2L standards ("Constituents of Interest") have migrated off site.
>
> (2) Extraction wells will be used to pump the groundwater to arrest the off-site extent of the migration. The pumped groundwater will be treated as needed to meet standards and returned either to the ash basin or the discharge canal.

> (3) This extraction and treatment system will be installed as soon as practicable following receipt of all permits and approvals from DEQ, the issuance of which will occur as soon as practicable. This accelerated groundwater remediation is in addition to and shall be performed concurrent with the coal ash impoundment closure obligations set forth in CAMA.

(DEP Doc. Ex. 3105; emphasis added).

Cross-examination of DEP/DEC witness Wells provided further evidence that the costs of extraction and treatment at Sutton and other plants was the direct result of DEP environmental violations:

> Q Okay. Turning to page 17 -- and I just have a general question here; I don't even know that you need to look at the testimony there -- would either CAMA or the 2L regulations require corrective action if there was no onsite activity causing an exceedance beyond the compliance boundary?
>
> A If we had no exceedance of the 2L standard above background?
>
> Q Would any corrective action then be required?
>
> A There would be -- I'm not familiar. I don't believe there would be any corrective action required, no.
>
> Q And it's correct, isn't it, that the settlement with DEQ regarding the Sutton plant required -- requires as corrective action groundwater extraction and treatment at Sutton, H.F. Lee, and Asheville?

A Well, the settlement, if I'm thinking of what you're referring to correctly, is we agreed to implement accelerated remediation at those points at Sutton and Asheville. Is that –

Q Yes.

A That's correct.

Q Yeah. And if your monitoring wells had shown that there was no groundwater exceedance at those plants, then you wouldn't have had to install extraction wells there, would you?

A That's correct.

(DEP T 21 pp 175-76).

Similar evidence is found in the DEC rate case. For instance, Company witness Wright testified on cross-examination about the extraction and treatment costs for the Belews Creek plant:

Q Do you think it's proper for ratepayers to pay the cost of extraction wells and treatment at Belews Creek?

A Those wells, as I understand it, are in response to CAMA requirements or are in response to this Settlement Agreement. And, yes, if it's part of those types of settlements, yes.

Q The settlement specifically indicates that Belews Creek is one of the plants where it had been determined that there were offsite groundwater impacts, and the Company agreed with that statement in the settlement, did it not?

A I'd have to read the settlement, but as I recall this, and Mr. Kerin would be the person who would know more of these details, in that settlement the Company agreed to accelerate the extractions – the extraction wells, but as I recall, they were going to have to sink the extraction wells regardless in response to CAMA or CCR.

Q And that's because CAMA and CCR require corrective action if there are exceedances, don't they?

A Yes.

Q Okay. So if there had been no exceedances and no offsite groundwater impacts, then the extraction wells would not have been necessary at Belews Creek, would they?

A No.

Q No, they would not have been necessary?

A No, they –

Q Or, no, you don't agree with the question?

A Well, I don't necessarily agree with the question, but, no, they probably wouldn't have been necessary.

(DEC T 13 pp 91-92).

In addition to testimony from the Public Staff witnesses, documentary evidence that the Sutton and Belews Creek extraction and treatment costs resulted from environmental violations is found in

(i) the DEQ Notice of Violation issued against DEP that sets forth the position of environmental regulators that DEP committed violations (DEP Doc. Ex. 3807-19);

(ii) the settlement agreement between DEQ and DEP on the Sutton Notice of Violation in which DEP and DEC admitted there were "demonstrated offsite groundwater impacts" for which there would be remediation "consistent with 15A NCAC 2L .106" at the Sutton, Asheville, H.F. Lee, and Belews Creek plants (DEP Doc. Ex. 3100-12) ("Settlement Agreement");

(iii) the DEQ press release announcing that DEP was being held accountable for coal ash groundwater pollution at the Sutton, Asheville, Belews Creek, and H.F. Lee plants, through a multi-million dollar Settlement Agreement that DEQ characterizes as "fines and penalties," and through a requirement for accelerated cleanup (DEP Doc. Ex. 3821-22); and

(iv) portions of the Joint Factual Statement signed by DEP in connection with its federal guilty plea to Clean Water Act violations, which acknowledged that a community near the Sutton plant had concluded that boron from the Sutton plant

was entering its public water supply, that wells at and near the Sutton plant showed elevated levels of other regulated chemicals, and that DEP had agreed to extend a municipal line from the Cape Fear Public Utility Authority to that community (DEP Doc. Ex. 865-66).

The Commission was clear that the only evidence of environmental violations it would consider were guilty findings against DEP or DEC, or admissions by DEP or DEC. (DEP R pp 658, 663; DEC R 1118, 1124). For example: "there is no finding in the litigation brought against the Company, or admission by the Company in that litigation, that any 'violation' actually occurred." (DEP R p 658; DEC R p 1124). This is also expressed indirectly where the Orders state: "This Commission's responsibility is cost recovery. Environmental regulators must oversee protection of the environment and public health." (DEP R p 681; DEC R p 1142). This meant the Commission refused to weigh the evidence, summarized in the preceding paragraphs, showing environmental violations caused extraction and treatment costs in excess of what CAMA and the CCR Rule would have required in the absence of violations. That evidence was substantial, material, and competent.

C. LEGAL REQUIREMENT TO CONSIDER MATERIAL EVIDENCE

The Commission is legally obligated to weigh competent material evidence on disputed issues, and to make findings and conclusions from that evidence. N.C. Gen. Stat. § 62-79. The duty to make proper findings and conclusions is not fulfilled when the Commission simply defers to another state agency on a matter that relates to an issue properly before the Commission. For example, in a water and sewer utility case, the Commission had resolved an issue of excess sewer plant capacity by adopting the design standard of the state environmental agency without further addressing evidence of actual capacity need, and the Court remanded:

> While the opinions and criteria of the DEM, in terms of our environment, are indeed of great importance and should be considered by the Commission and even "accorded great weight" by any utility company management in the planning and operation of its business, the determination of what is required of a utility company or any company under law in terms of the environment is one thing, and the determination of what is required of a utility company under law in terms of rate base and ratemaking is quite another. The latter is the exclusive responsibility of the Utilities Commission.
>
> . . . .

> Accordingly, we conclude it was error for the Commission to arbitrarily or subserviently accept, in place of its own determination upon the evidence before it, the DEM's design criteria of 281,160 gallons per day as the actual plant capacity currently needed for service to existing customers -- and the beginning point for determining the appropriate additional "capacity allowance."

Carolina Trace, 333 N.C. at 206-07, 424 S.E.2d at 140.

Under the same logic, the Commission cannot lawfully refuse to consider evidence of environmental violations on an issue relevant to utility cost recovery from ratepayers simply because there was a settlement with DEQ instead of an adjudication with regard to environmental regulatory enforcement. In the present rate cases, the Public Staff asked the Commission to determine if environmental violations justified a disallowance of approximately $6.7 million of groundwater extraction and treatment costs at the Sutton plant and $1.5 million at the Belews Creek plant as unreasonable to include in rates under N.C. Gen. Stat. § 62-133(b). The Commission allowed those costs into rates on the theory it had no authority to independently weigh the evidence on whether the costs occurred because of DEP and DEC environmental violations.

If the environmental lawsuits and penalty proceedings had resulted in an adjudication that there were no violations, that would have been material evidence to support the Commission decision that the extraction and treatment costs were "reasonable" for cost recovery purposes. However, that was not the situation. DEQ made formal findings of groundwater violations at the Sutton plant (DEP Doc. Ex. 3807-17); the Companies filed a contested case to challenge those findings; and the matter was settled by DEC and DEP agreeing to pay $7 million to DEQ and also agreeing to mitigate the offsite groundwater contamination by use of extraction wells and water treatment. (DEP Doc. Ex. 3100-12). The 29 September 2015 Settlement Agreement between DEQ and DEP recites in part:

> [O]n August 26, 2014, DEQ sent Duke Energy a Notice of Violation based upon the exceedances of the State's groundwater standards reported to DEQ for the Sutton Plant . . . .
>
> . . . .
>
> Duke Energy will commence installation of extraction wells on the eastern portion of the Sutton Plant property <u>where data show constituents associated with the ash basins at concentrations over the 2L standards</u> ("Constituents of Interest") have migrated off site.
>
> . . . .

> [T]he Parties to this Agreement make no admission of liability, violation, or wrongdoing whatsoever, by itself, any of its affiliated companies, or 'any or its or their present or former officers, directors, employees, or agents.

(DEP Doc. Ex. 3102, 3104, 3105, 3109; emphasis added). The parties also acknowledged "offsite groundwater impacts" at other DEP and DEC plants, including Belews Creek. (DEP Doc. Ex. 3105-06). The Settlement Agreement for the DEQ penalty litigation included boilerplate "no admission" wording. Yet DEP and DEC signed the Agreement that stated chemicals from the Company's ash basins had migrated offsite and exceeded the limits set in the 2L Rule. This was substantial evidence, never weighed by the Commission.

DEQ also sued DEP and DEC in Superior Court, seeking injunctive relief, for violations caused by coal ash contamination at all DEP and DEC coal plants in North Carolina. (DEP Doc. Ex. 1120, 2032-2105; DEC Doc. Ex. 10646-86). While these cases did not result in court findings of environmental violations, due to the Companies' agreement to clean up coal ash under CAMA and their payment of $7 million in settlement for the Sutton penalty case (in addition to the $6.7 million and $1.5 million in extraction and treatment costs), the Commission also had the Public

Staff witnesses' independent evidence of groundwater contamination that led to the extraction and treatment costs. (See DEP T 18 pp 262-65, 274-80; DEP T 19 pp 13-16, 46-47, 84-86; DEP R p 642; DEC T 26 pp 733-34, 753-54; DEC R pp 1058-59). As the Court held in Carolina Trace, 333 N.C. at 206-07, 424 S.E.2d at 140, it is error for the Commission to conclude that an issue before it is the exclusive province of another governmental body as a reason why the Commission will not even weigh the evidence as it pertains to utility ratemaking.

Also in accord is the Court's decision on the sufficiency of rate of return findings:

> Subsection 62–79(a) of the North Carolina General Statutes "sets forth the standard for Commission orders against which they will be analyzed upon appeal." *State ex rel. Utils. Comm'n v. Carolina Util. Customers Ass'n (CUCA I),* 348 N.C. 452, 461, 500 S.E.2d 693, 700 (1998).
>
> . . . .
>
> "The purpose of the required detail as to findings, conclusions and reasons as mandated by this subsection is to provide the appellate court with sufficient information with which to determine under the scope of review the questions at issue in the proceedings." *CUCA I,* 348 N.C. at 461, 500 S.E.2d at 700.
>
> . . . .
>
> In finding essential, ultimate facts, the Commission

> must consider and make its determination based upon all factors particularized in section 62-133, including "all other material facts of record" that will enable the Commission to determine what are reasonable and just rates. The Commission must then arrive at its "*own independent conclusion*" as to the fair value of the applicant's investment, the rate base, and what rate of return on the rate base will constitute a rate that is just and reasonable both to the utility company and to the public. [citing *CUCA I at* 462, 500 S.E.2d at 701]
>
> . . . .
>
> Moreover, this Court has explained that "[i]n its delegation of rate-making authority to the Commission, the legislature has established an elaborate procedural, hearing, and appeals process that contemplates the full consideration of *all* evidence put forth by each of the parties certified via the statute to have an interest in the outcome of contested proceedings." *CUCA I,* 348 N.C. at 463, 500 S.E.2d at 701 (emphasis added). "Once such considerations are afforded to all parties in a contested case, the Commission is required to embody its findings in an order sufficiently detailing the reasons for its determinations on *all* material and controverted issues of fact, law or discretion presented in the record." Id. (emphasis added) (citing N.C.G.S. § 62–94(b)).

State ex rel. Utils. Comm'n v. Cooper, 366 N.C. 484, 489-90, 491, 494-95, 739 S.E.2d 541, 545, 546, 547-48 (2013). The Commission has neglected its responsibility to weigh and address in findings the evidence that Sutton and Belews Creek extraction and treatment costs would not have been incurred but for the Companies' coal ash-related environmental

violations and are therefore unreasonable for cost recovery. The fact that extraction and treatment costs were part of the Settlement Agreement with DEQ does not mean they are automatically "reasonable" under N.C. Gen. Stat. § 62-133(b) without any weighing of evidence on how those costs would not have been required for CAMA and CCR Rule compliance but for the Companies' environmental violations. This evidence related to an issue of utility ratemaking by the Commission, not environmental enforcement, and thus required Commission findings and conclusions.

VI. THE COMMISSION ERRED BY CONCLUDING THAT CAMA WOULD HAVE REQUIRED GROUNDWATER EXTRACTION AND TREATMENT REGARDLESS OF ENVIRONMENTAL VIOLATIONS

Public Staff witness Lucas recommended that the $6,693,390 cost of DEP groundwater extraction and treatment be disallowed from rate recovery because that cost would not have been necessary under CAMA or the CCR Rule if DEP had not committed environmental violations. (DEP T 18 pp 279-80; DEP T 19 pp 15-16). Public Staff witness Junis made a similar recommendation with respect to DEC's Belews Creek plant. (DEC T 26 pp 644-45, 731-34, 753-54).

The Commission, however, decided that the extraction and treatment costs were reasonable because they were "incurred to comply with the Company's obligations under CAMA and the CCR Rule."[45] (DEP R p 663; DEC R pp 1120-21). This decision rested on the Commission's conclusion of law that "CAMA requires utilities to perform groundwater assessment and corrective action for all identified exceedances of the 2L groundwater standards regardless of whether the exceedance amounts to a violation of the applicable groundwater standard." (DEP R pp 662) (footnote omitted). The record evidence and a proper reading of CAMA show otherwise.

Witness Lucas testified that "DEQ assessed a $25.1 million penalty for violations of 2L groundwater standards at the Sutton plant. . . ." (DEP T 18 p 262). He quoted specific findings by DEQ, including:

> The violations of Groundwater Quality Standards for Arsenic occurred in monitor well MW-21 C, located at or beyond the Compliance Boundary. Concentrations of Arsenic were determined to be below detection levels in background wells. The concentrations of Arsenic in monitoring well(s) exceeded the Groundwater Quality Standards for the time period from October 2, 2013

[45] This appears to be an alternative to the previously discussed Commission conclusion that in the absence of another tribunal finding DEP and DEC guilty of environmental violations, the Commission would not weigh evidence of environmental violations.

> through October 2, 2014, representing 365 days of continuous violation.

(Id.). He quoted similar findings of violations for boron, iron, manganese, selenium, and thallium. (Id. at 263-64). With regard to settlement of the penalty proceeding, witness Lucas testified that

> The settlement did acknowledge "offsite groundwater impacts" at these facilities. The remediation work for Sutton includes extraction wells to pump groundwater in an effort to slow offsite migration from the ash basins.

(Id.). In DEP's rate case, witness Lucas recommended that the $6.7 million cost for extraction and treatment of contaminated groundwater be disallowed from rates. (DEP T 18 p 339). Witness Junis made a similar recommendation in the DEC rate case with regard to extraction and treatment costs at the Belews Creek plant. (DEC T 26 pp 713-15, 731-34, 753-54).

The Commission allowed the extraction and treatment costs into rates. It based this decision on a legal conclusion that extraction and treatment of contaminated groundwater outside the Sutton plant would have been required "regardless of whether the exceedance amounts to a violation of the applicable groundwater standard." This conclusion tracks the legal opinion of DEP and DEC witness Wells. (DEP R p 662; DEC R

p 1123). This position is erroneous as a matter of law because CAMA would not have required such costs in the absence of violations of the 2L Rule.

Exceedances of the 2L Rule for groundwater are DEP and DEC "violations" if caused by DEP and DEC coal ash basins, but not "violations" if due to naturally occurring background levels of the regulated constituents. The regulation at 15A NCAC 2L .0106 is entitled "Corrective Action" and states that the party responsible for an exceedance of 2L groundwater standards must assess and report the "violation" to DEQ. (See DEP Doc. Ex. 1104-07). In particular, the corrective action requirements at 15A NCAC 02L .0106 (c), (d), and (e) apply to anyone "conducting or controlling an activity . . . and that results in an increase in the concentration of a substance in excess of the standards . . . ." (DEP Doc. Ex. 1104). Those regulatory sections expressly label such exceedances as "violations."

In contrast, exceedances for which DEP and DEC are not "responsible" do not meet the definition of "violations" set forth in 15A NCAC 02L .0106. Neither DEP nor DEC is responsible for naturally occurring levels of regulated constituents above the 2L Rule limits, and

therefore the Companies would not be deemed in violation for those types of exceedances, and would have no 2L Rule obligation to take corrective action for naturally occurring exceedances. That DEP's coal ash basins at Sutton caused exceedances of 2L standards, rather than the cause being natural background levels, is admitted in the Settlement Agreement:

> Duke Energy will commence installation of extraction wells on the eastern portion of the Sutton Plant property where data show constituents associated with the ash basins at concentrations over the 2L standards ("Constituents of Interest") have migrated off site.

(DEP Doc. Ex. 3105; emphasis added).

The DEP Order attempts to sidestep the fact of DEP's responsibility for offsite contamination at Sutton by adopting DEP's position that extraction and treatment would have been required under CAMA even in the absence of violations of 2L groundwater standards:

> Witness Wells further argued, persuasively in the Commission's view, that the groundwater extraction and treatment activity that DEP performed pursuant to the DEQ Settlement Agreement merely accelerated work that would have been required under CAMA in any event. (Id. at 76.) Although CAMA borrows heavily from the 2L Rules, including by incorporating the substance of its corrective action requirements, one key difference between the two laws is that CAMA's groundwater assessment and corrective action provisions are

> triggered by exceedances – not violations – of the 2L groundwater standards. In other words, unlike the 2L Rules, CAMA requires utilities to perform groundwater assessment and corrective action for all identified exceedances of the 2L groundwater standards regardless of whether the exceedance amounts to a violation of the applicable groundwater standard.

(DEP R p 662; final emphasis added) (footnote omitted). The DEC Order contains the same legal conclusion, applied to the Belews Creek groundwater extraction well and treatment costs. (DEC R p 1123). This is a misinterpretation of the law for the reasons discussed below.

No part of CAMA states that utilities must perform remediation (such as extraction and treatment of contaminated groundwater) for exceedances caused by nature or by third parties. Footnote 22 of the DEP Order cites to N.C. Gen. Stat. § 130A-309.211(b)(1)a. (DEP R p 662). That statutory subsection states in its entirety that the utility's corrective action plan must contain: "A description of all exceedances of the groundwater quality standards, including any exceedances that the owner asserts are the result of natural background conditions." This wording does not state that exceedances resulting from natural background conditions must be remediated by the utility; rather they

must only be described.[46] The next subsection of the statute provides that the actual restoration of groundwater quality must follow the requirements of the 2L Rule:

> A description of the methods for restoring groundwater in conformance with the requirements of Subchapter L of Chapter 2 of Title 15A of the North Carolina Administrative Code and a detailed explanation of the reasons for selecting these methods.

N.C. Gen. Stat. § 130A-309.211(b)(1)b. Other than the requirement to describe all exceedances (i.e., natural and utility-caused), the corrective action to be taken under CAMA is tied to the corrective action requirements of the 2L Rule, and thus applies only to utility-caused exceedances, which are "violations."

Extraction and treatment to mitigate offsite migration of coal ash constituents is "corrective action" under the 2L Rule and CAMA. It is corrective action only because coal ash constituents exceed groundwater standards at or beyond the compliance boundary. There is no wording

[46] The requirement that all exceedances be described has the effect of allowing DEQ to check whether exceedances are caused by naturally occurring conditions versus caused by coal ash. If the utility only had to report what it considered to be "violations," then it would be in the position of making a unilateral decision without reporting information that would allow fuller regulatory oversight by DEQ.

and no reasonable interpretation of CAMA, the CCR Rule, or the 2L Rule that would require DEP or DEC to drill extraction wells and use them to pump contaminated groundwater to treatment facilities if the 2L Rule exceedances were due to natural causes. Corrective action under CAMA must conform to the corrective action requirements of the 2L Rule (N.C. Gen. Stat. § 130A-309.211(b)), and under the 2L Rule the remedial action requirement is limited to exceedances caused by the entity "conducting or controlling an activity . . . and that results in an increase in the concentration of a substance in excess of the standard . . . ." 15A NCAC 02L .0106.

The extraction and treatment of groundwater at Sutton and Belews Creek was expressly stated in the Settlement Agreement signed by Duke Energy to be "remediation" that was "[c]onsistent with 15A NCAC 2L .0106." (DEP Doc. Ex. 3105). Corrective action (remediation) under 15A NCAC 2L .0106 applies to "violations" caused by the entity (DEP and DEC) conducting or controlling the activity (storage of coal ash in unlined basins). Corrective action under 15A NCAC 2L .0106 is not required for naturally occurring exceedances, as such exceedances are not the result of activity by the utility.

That the extraction and treatment costs result from the Companies' environmental violations, rather than CAMA closure requirements in the absence of violations, is reflected in the wording of the Settlement Agreement signed by DEP and DEC:

> Extraction wells will be used to pump the groundwater to arrest the off-site extent of the migration.
>
> . . . .
>
> This accelerated groundwater remediation is <u>in addition to</u> . . . the coal ash impoundment closure obligations set forth in CAMA.

(DEP Doc. Ex. 3105; emphasis added).

Thus, the Orders err as a matter of law by concluding that CAMA would have required DEP and DEC to extract and treat contaminated groundwater even if the exceedances were caused by something other than migration of constituents from DEP's and DEC's coal ash basins. DEP and DEC's environmental violations were the only reason they had to incur extraction and treatment costs; without those violations the Companies could have complied with CAMA and the CCR Rule without extraction and treatment.

Finally, the conclusion in the DEP and DEC Orders that CAMA requires corrective action of "exceedances" even if they are not violations

simply defies common sense. A requirement that DEP eliminate groundwater exceedances caused by naturally occurring conditions is not realistic as well as not required by law. This practical view is bolstered by the partial summary judgments in certain DEQ enforcement lawsuits against DEP and DEC on the grounds that closure of the coal ash basins was the ultimate corrective action. For instance, the Superior Court order applicable to the Sutton plant states in part: "CAMA enacted G.S. §130A-309.211 to require the assessment and, where appropriate, corrective action as to groundwater impacted by the coal ash basins at the facilities operated by the Defendants . . . ." (DEP Doc. Ex. 3004, emphasis added). Also,

> This Court further finds that the issues alleged in the various Complaints with regard to unpermitted discharges, and with regard to violations of NPDES permits and groundwater standards at these facilities will be remedied by compliance with the provisions of this Order and the provisions of CAMA applicable to the four plants included in this Order.

(Id. at 3006-07). (See also DEP Doc. Ex. 2113; DEC Doc. Ex. 9969-70). If DEP and DEC were required to remediate exceedances due to natural causes (not just their own violations), then closure of the ash basins would not be a sufficient corrective action. Closure of ash basins would

not eliminate the natural background exceedances, it would only reduce or eliminate exceedances caused by migration of contaminants from the ash basins.

In summary, under both the law and the record evidence, the groundwater extraction and treatment costs at Sutton and Belews Creek would not have been incurred under CAMA in the absence of DEP's violation of the 2L Rule. There is no basis in law and no substantial evidence to support the Commission's conclusion that CAMA would have required the $6,693,390 in extraction and treatment costs at Sutton and other plants, and $1.5 million at Belews Creek, without a violation of the 2L Rule. Neither the 2L Rule nor CAMA require corrective action to remove exceedances that are due to natural causes. The Commission's conclusion that CAMA would have required the extraction well and treatment costs regardless of violations is erroneous as a matter of law, and unsupported by substantial evidence in the record. That error underlies the Commission's decision to allow those costs to be recovered in rates.

CONCLUSION

The Public Staff respectfully requests that the Court reverse the Commission's Order with regard to the errors discussed above, and remand the case with instructions for the Commission to (a) disallow as unreasonable the extraction and treatment costs related to environmental violations at the Sutton and Belews Creek plants, as recommended by witnesses Lucas and Junis, and (b) review and decide whether evidence of environmental violations caused by the Companies' coal ash management are "other material facts" that justify equitable sharing between ratepayers and investors for the coal ash costs not otherwise disallowed.

This the 26th day of April, 2019.

PUBLIC STAFF – NORTH CAROLINA
UTILITIES COMMISSION

Electronically submitted
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N.C. R. App. p 33(b) Certification: I certify that all of the attorneys listed below have authorized me to list their names on this document as if they had personally signed it.

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CERTIFICATE OF SERVICE

I certify that I have served a copy of the foregoing Public Staff brief on all parties to the appeal by e-mail in accordance with Rule 26 of the North Carolina Rules of Appellate Procedure.

This the 26th day of April, 2019.

Electronically submitted
/s/ David Drooz

Contents of Appendix

Doc. Ex. 1402

Duke Energy Progress
Docket No. E-2, Sub 1142
North Carolina Retail Operations
REVENUE IMPACT OF PUBLIC STAFF ADJUSTMENTS
For the Test Year Ended December 31, 2016
(In Thousands)

Peedin Exhibit 1
Schedule 1

Line No.	Item	Amount
1	Revenue requirement increase per Company application	$477,495 1/
2	Revenue impact of Company update	(57,958) 2/
3	**Revenue requirement increase per Company after updates**	**419,537**
4	Revenue impact of Public Staff adjustments: 3/	
5	Change in equity ratio from 53.00% to 50.00% equity	(31,479)
6	Change in debt cost rate from 4.170% to 4.050%	(4,877)
7	Change in return on equity from 10.75% to 9.20%	(100,083)
8	Change in retention factor	-
9	Update plant and accumulated depreciation to August 31, 2017	(13,943)
10	Update revenues to August 31, 2017	(21,919)
11	Adjust distribution vegetation management	(4,073)
12	Adjust Harris COLA annual amortization	(3,409)
13	Adjust allocations by DEBS to DEP	(505)
14	Adjust for lost industrial revenues due to Hurricane Matthew	(2,072)
15	Remove EDIT refund from base rates for treatment as a rider	37,284 5/
16	Remove Customer Connect expenses	(7,973)
17	Adjust aviation expenses	(1,084)
18	Adjust executive compensation	(239)
19	Adjust outside services	(134)
20	Remove Duke-Piedmont costs to achieve (CTAs)	(3,831)
21	Adjust storm costs	(21,122)
22	Remove ongoing environmental costs	(129,529)
23	Adjust depreciation rates	(30,644)
24	Adjust incentives	(17,960)
25	Adjust deferred environmental costs	(53,291)
26	Adjust coal inventory	(2,968)
27	Adjust Sutton CT blackstart plant cost	(519)
28	Adjust EOL nuclear materials & supplies reserve expense	(355)
29	Adjust Mayo ZLD plant cost	(2,523)
30	Adjust sponsorships & donations	(257)
31	Adjust lobbying expense	(601)
32	Adjust Board of Directors expense	(1,395)
33	Adjust inflation to August 31, 2017	5,362
34	Adjust cash working capital under present rates	486
35	Adjust cash working capital under proposed rates	(3,103)
36	Rounding	2
37	Total revenue impact of Public Staff adjustments	(416,754)
38	**Public Staff recommended increase in revenue requirement**	**$2,783** 4/
39	Public Staff recommended increase in base rate revenue requirement (L43)	$2,783
40	Annual EDIT Rider recommended by Public Staff for two year period	(79,842) 5/
41	Public Staff recommended revenue requirement for first two years (L44 + L45)	($77,059)

1/ Bateman Exhibit 1, Page 2, Line 8.
2/ Based on updated Bateman Exhibit 1 reflecting supplemental adjustments, including correction to cash working capital, provided by Company.
3/ Calculated based on Peedin Exhibit 1, Schedules 2, 3, 4, 5, and backup schedules.
4/ Peedin Exhibit 1, Schedule 5, Line 5.
5/ The Public Staff is recommending that the EDIT regulatory liability be refunded through a two year rider. As a result, the Public Staff has removed the amounts included by the Company in the calculation of its revenue requirement associated with the EDIT refund, and instead has calculated a separate rider that will credit customers for the EDIT refund over a two year period. The calculation of the annual EDIT rider is shown on Peedin Exhibit 2.

Doc. Ex. 1463

Duke Energy Progress
Docket No. E-2, Sub 1142
North Carolina Retail Operations
REVENUE IMPACT OF ADJUSTMENTS
For the Test Year Ended December 31, 2016
(In Thousands)

Peedin Revised Exhibit 1
Schedule 1

Line No.	Item	Public Staff Amount	Company Amount
1	Revenue requirement increase per Company application	$477,495 1/	$477,495
2	Revenue impact of Company update	(57,958) 2/	(57,958)
3	**Revenue requirement increase per Company after updates**	419,537	419,537
4	Revenue impact of adjustments: 3/		
	Settled Issues		
5	Change in equity ratio from 53.00% to 52.00% equity	(10,492)	(10,492)
6	Change in debt cost rate from 4.170% to 4.050%	(4,681)	(4,681)
7	Change in return on equity from 10.75% to 9.90%	(57,081)	(57,081)
8	Update plant and accumulated depreciation to October 31, 2017	(3,102)	(3,102)
9	Update revenues to October 31, 2017	(3,464)	(3,464)
10	Adjust distribution vegetation management	0	0
11	Adjust Harris COLA annual amortization	(3,409)	(3,409)
12	Adjust allocations by DEBS to DEP	(160)	(160)
13	Adjust for lost industrial revenues due to Hurricane Matthew	(1,696)	(1,696)
14	Remove EDIT refund from base rates for treatment as a rider	37,884 5/	37,884
15	Remove Customer Connect expenses	(7,973)	(7,973)
16	Adjust aviation expenses	(300)	(300)
17	Adjust executive compensation	(239)	(239)
18	Adjust outside services	(80)	(80)
19	Remove Duke-Piedmont costs to achieve (CTAs)	(3,831)	(3,831)
20	Adjust depreciation rates	(15,380)	(15,380)
21	Adjust incentives	(4,908)	(4,908)
22	Adjust coal inventory	(847)	(847)
23	Adjust Sutton CT blackstart plant cost	(396)	(396)
24	Adjust EOL nuclear materials & supplies reserve expense	(274)	(274)
25	Adjust Mayo ZLD plant cost	(1,342)	(1,342)
26	Adjust sponsorships & donations	(26)	(26)
27	Adjust lobbying expense	(601)	(601)
28	Adjust Board of Directors expense	(1,395)	(1,395)
29	Adjust inflation to October 31, 2017	6,213	6,213
30	Adjust salaries and wages	4,653	4,653
31	Adjust Asheville base load CWIP	1,598	1,598
	Total Settled Issues	(71,329)	(71,329)
32	**Recommended Revenue Requirement after Settled Issues**	348,208	348,208
	Unsettled Issues		
33	Adjust storm costs	(21,164)	
34	Remove ongoing environmental costs	(129,529)	
35	Adjust deferred environmental costs	(53,385)	1,436
	Total Unsettled Issues	(204,078)	1,436
	Other Adjustments		
36	Interest Synch		157
37	Adjust cash working capital under present rates	382	92
38	Adjust cash working capital under proposed rates	(2,159)	(1,361)
39	Rounding	3	
	Total Other Adjustments	(1,774)	(1,112)
40	Total revenue impact of unsettled issues and other adjustments	(205,852)	324
41	**Recommended increase in revenue requirement**	142,356 4/	348,532
42	Recommended increase in base rate revenue requirement (L41)	$142,356	$348,532
43	Annual EDIT Rider recommended for four year period	(42,577) 5/	(42,577)
44	Recommended revenue requirement for first four years (L42 + L43)	$99,779	$305,955

1/ Bateman Exhibit 1, Page 2, Line 8.
2/ Based on updated Bateman Exhibit 1 reflecting supplemental adjustments, including correction to cash working capital, provided by Company.
3/ Calculated based on Peedin Revised Exhibit 1, Schedules 2, 3, 4, 5, and backup schedules.
4/ Peedin Revised Exhibit 1, Schedule 5, Line 5.
5/ Under the stipulation the EDIT regulatory liability be refunded through a four year rider. As a result, the Public Staff has removed the amounts included by the Company in the calculation of its revenue requirement associated with the EDIT refund, and instead has calculated a separate rider that will credit customers for the EDIT refund over a four year period. The calculation of the annual EDIT rider is shown on Settlement Exhibit 2.

MANESS LATE-FILED EXHIBIT: DIFFERENCE BETWEEN PUBLIC STAFF AND DEP ON COAL ASH - AFT OF OTHER ISSUES

		N.C. Retail Expense/Rate Base Amount (000s)	Revenue Requirement Factor	Revenue Requirement
PUBLIC STAFF:				
1	Deferred costs - balance for amortization	$ 158,420		
2	Amortization period	26		
3	Annual amortization	$ 6,093	0.9968025	$ 6,113
4	Unamortized balance in rate base	$ -	0.1015568	-
5	Total amount related to deferred costs			6,113
6	Run rate	$ -	0.9968025	-
7	Legal costs	$ -	0.9968025	-
8	Total revenue requirement			$ 6,113
DEP:				
1	Deferred costs - balance for amortization	$ 241,890		
2	Amortization period	5		
3	Annual amortization	$ 48,378	0.9968025	$ 48,533
4	Unamortized balance in rate base, net-of-tax	$ 121,797	0.1015568	12,369
5	Total amount related to deferred costs			60,902
6	Run rate	$ 129,115	0.9968025	129,529
7	Legal costs	$ 53	0.9968025	53
8	Total revenue requirement			$ 190,484

DIFFERENCE BETWEEN PUBLIC STAFF AND DEP:

Annual amortization	$ (42,420)
Unamortized balance in rate base	(12,369)
Total amount related to deferred costs	(54,789)
Run rate	(129,529)
Legal costs	(53)
Total revenue requirement difference	$ (184,371)

Site Facts - DEP

Site	Commercial Operation Date	Generation Capacity (MW)	Retirement Date, if applicable	Possible closure approach	Quantity of ash on site in basins (in million tons MT)	Is a CCR landfill envisioned for the site?
Asheville	1964	376	n/a	Offsite excavation	2.9MT	No
Cape Fear	1956	316	2012	Offsite excavation/onsite landfill	5.7MT	Yes
HF Lee	1951	382	2012	Beneficiation	6.2MT	No
Mayo	1983	727	n/a	Cap in Place	6.6MT	No
Robinson	1960	177	2012	Onsite landfill	3.2MT	Yes
Roxboro	1966	2439	n/a	Cap in place	19.7MT	No
Sutton	1954	553	2013	Offsite excavation/onsite landfill	5.4MT	Yes
Weatherspoon	1949	170	2011	Offsite excavation	2.5MT	No

I/A

Doc. Ex. 509

					Kerin Exhibit 5
					Page 1 of 1
Ash Basin Information					
Site	**Basin**	**When constructed**	**Ash in Tons as of 1/17/17 (Millions)**	**When closed if applicable**	**CCR Applicable?**
DEP					
Asheville	1964 Basin	1964	2.9	n/a	Y
	1982 Basin	1982	0	n/a	Y
Cape Fear	1956 Basin	1956	0.4	1963	N
	1963 Basin	1963	0.9	1978	N
	1970 Basin	1970	0.8	1978	N
	1978 Basin	1978	0.8	1985	N
	1985 Basin	1985	2.8	2012	N
HF Lee	1950 Basin	1950	0.3	1969	N
	1955 Basin	1955	0.5	1969	N
	1962 Basin	1962	0.9	1973	N
	1982 Basin	1978	4.5	2012	Y
	Polishing Pond	1982	0.009	2012	N
Mayo	Ash basin	1983	6.6	n/a	Y
Robinson	Ash Basin	Mid 1970s	3.2	10/1/2012	Y
Roxboro	East Ash Basin	1966	7.1	n/a	Y
	West Ash Basin	1973	12.6	n/a	Y
Sutton	1971 Basin	1971	2.6	**U1 & U2** 11/27/13 **U3** 11/4/13	Y
	1984 Basin	1984	2.8	**U1 & U2** 11/27/13 **U3** 11/4/14	Y
Weatherspoon	Ash Basin	1955	2.5	9/30/2011	Y

I/A

UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF NORTH CAROLINA
WESTERN DIVISION
No. 5:15-CR-62-H
No. 5:15-CR-67-H
No. 5:15-CR-68-H

UNITED STATES OF AMERICA	)	
	)	
v.	)	JOINT FACTUAL STATEMENT
	)	
DUKE ENERGY BUSINESS SERVICES LLC	)	
DUKE ENERGY CAROLINAS, LLC	)	
DUKE ENERGY PROGRESS, INC.	)	

I. INTRODUCTION

Defendants Duke Energy Business Services LLC ("DUKE ENERGY BUSINESS SERVICES"), Duke Energy Carolinas, LLC ("DUKE ENERGY CAROLINAS"), and Duke Energy Progress, Inc. ("DUKE ENERGY PROGRESS"),(collectively referred to as "Defendants") and the United States of America, by and through the United States Attorneys for the Eastern District of North Carolina, the Middle District of North Carolina and the Western District of North Carolina and the Environmental Crimes Section of the United States Department of Justice (collectively referred to herein as "the United States" or "the government"), hereby agree that this Joint Factual Statement is a true and accurate statement of the Defendants' criminal conduct and that it provides a sufficient basis for the Defendants' pleas of guilty to the following charging documents and the terms of the Plea Agreements:

Sierra Club – Fountain/McManus
Cross Ex. 1

United States v. Duke Energy Business Services, LLC, and Duke Energy Progress, Inc., No. 5:15-CR-62-H;

United States v. Duke Energy Business Services, LLC, Duke Energy Carolinas, LLC, and Duke Energy Progress, Inc., No. 5:15-CR-67-H; and

United States v. Duke Energy Business Services, LLC, Duke Energy Carolinas, LLC, and Duke Energy Progress, Inc., No. 5:15-CR-68-H.

The charges from the Middle District of North Carolina and the Western District of North Carolina have been transferred to the Eastern District of North Carolina for purposes of plea pursuant to Fed. R. Crim. P. 20. The Defendants' guilty pleas are to be entered pursuant to the Plea Agreements signed and dated this same day.

II. OVERVIEW AND BACKGROUND

Dan River Steam Station - Middle District of North Carolina

1. From at least January 1, 2012, DUKE ENERGY CAROLINAS and DUKE ENERGY BUSINESS SERVICES failed to properly maintain and inspect the two stormwater pipes underneath the primary coal ash basin at the Dan River Steam Station in Eden, North Carolina. On February 2, 2014, one of those pipes failed, resulting in the discharge of approximately 27 million gallons of coal ash wastewater and between 30,000 and 39,000 tons of coal ash into the Dan River. The coal ash travelled more than 62 miles downriver to the Kerr Lake Reservoir on the border of

North Carolina and Virginia. Video camera inspections of the other pipe, conducted in the aftermath of the spill, revealed that the other pipe had also deteriorated, allowing coal ash wastewater to leak into the pipe, and that DUKE ENERGY CAROLINAS and DUKE ENERGY BUSINESS SERVICES had not taken appropriate action to prevent unauthorized discharges from the pipe.

Cape Fear Steam Electric Plant -
Middle District of North Carolina

2. DUKE ENERGY PROGRESS and DUKE ENERGY BUSINESS SERVICES also failed to maintain the riser structures in two of the coal ash basins at the Cape Fear Steam Electric Plant, resulting in the unauthorized discharges of leaking coal ash wastewater into the Cape Fear River.

Asheville, Riverbend, & Lee Steam Stations -
Eastern and Western Districts of North Carolina

3. Additionally, DUKE ENERGY CAROLINAS' and DUKE ENERGY PROGRESS's coal combustion facilities throughout North Carolina allowed unauthorized discharges of pollutants from coal ash basins via "seeps" into adjacent waters of the United States. Three of those facilities include the Asheville Steam Electric Generating Plant, the H.F. Lee Steam Electric Plant, and the Riverbend Steam Station. At those facilities, discharges from naturally occurring seeps were channeled by DUKE ENERGY CAROLINAS and DUKE ENERGY BUSINESS SERVICES to flow through

engineered drains and ditches into waters of the United States without obtaining or maintaining the necessary permits.

4. The Defendants' conduct violated the Federal Water Pollution Control Act (commonly referred to as the "Clean Water Act," or "CWA"). 33 U.S.C. §§ 1251 et seq. More specifically, the criminal investigation, conducted out of the Eastern District of North Carolina, revealed the following:

DEFENDANTS AND CORPORATE STRUCTURE

5. Duke Energy Corporation is an energy company headquartered in Charlotte, North Carolina.

6. Duke Energy Corporation is a holding company whose direct and indirect subsidiaries operate in the United States and Latin America. Duke Energy Corporation's wholly-owned subsidiaries include: DUKE ENERGY CAROLINAS; Progress Energy, Inc. ("Progress Energy"); DUKE ENERGY PROGRESS; and DUKE ENERGY BUSINESS SERVICES.

7. DUKE ENERGY CAROLINAS, a North Carolina limited liability company, is a regulated public utility primarily engaged in the generation, transmission, distribution and sale of electricity in portions of North Carolina and South Carolina.

8. Progress Energy, a North Carolina corporation headquartered in Raleigh, North Carolina, is a holding company which holds, among other entities, DUKE ENERGY PROGRESS.

9. DUKE ENERGY PROGRESS, a North Carolina corporation, is a regulated public utility primarily engaged in the generation, transmission, distribution and sale of electricity in portions of North Carolina and South Carolina. Prior to the July 2, 2012, merger between Duke Energy Corporation and Progress Energy, Inc., DUKE ENERGY PROGRESS was known as Carolina Power & Light, Inc., d/b/a Progress Energy Carolinas.

10. "Progress Energy Carolinas" will refer to DUKE ENERGY PROGRESS before the merger.

11. DUKE ENERGY BUSINESS SERVICES provides shared services to all of Duke Energy Corporation's operating utilities nationwide, including: Legal Counsel; Central Engineering & Services; Environmental, Health & Safety; Ethics and Compliance; and Coal Combustion Products.

12. During the time period relevant to the charges, within the State of North Carolina, the Defendants and/or their predecessors owned and operated the following facilities with coal ash basins:

FACILITY	OWNER/ OPERATOR	NUMBER OF COAL ASH BASINS	ADJACENT WATERS OF THE UNITED STATES	FEDERAL JUDICIAL DISTRICT
Allen Steam Station (Gaston County)	Duke Energy Carolinas	2	Lake Wylie & Catawba River	WDNC
Asheville Steam Electric Generating Plant (Buncombe County)	Duke Energy Progress	2	French Broad River	WDNC

Belews Creek Steam Station (Stokes County)	Duke Energy Carolinas	1	Belews Lake & Dan River	MDNC
Buck Steam Station (Rowan County)	Duke Energy Carolinas	3	Yadkin River & High Rock Lake	MDNC
Cape Fear Steam Electric Plant (Chatham County)	Duke Energy Progress	5	Cape Fear River	MDNC
Cliffside Steam Station (Rutherford & Cleveland Counties)	Duke Energy Carolinas	3	Broad River	WDNC
Dan River Steam Station (Rockingham County)	Duke Energy Carolinas	2	Dan River	MDNC
H.F. Lee Steam Electric Plant (Wayne County)	Duke Energy Progress	5	Neuse River	EDNC
L.V. Sutton Electric Plant (New Hanover County)	Duke Energy Progress	2	Cape Fear River & Sutton Lake[1]	EDNC
Marshall Steam Station (Catawba County)	Duke Energy Carolinas	1	Lake Norman	WDNC
Mayo Steam Electric Plant (Person County)	Duke Energy Progress	1	Mayo Lake	MDNC
Riverbend Steam Station (Gaston County)	Duke Energy Carolinas	2	Catawba River	WDNC
Roxboro Steam Electric Plant (Person County)	Duke Energy Progress	2	Hyco River	MDNC
Weatherspoon Steam Electric Plant (Robeson County)	Duke Energy Progress	1	Lumber River	EDNC

[1] While the parties agree that Sutton Lake receives wastewater from the L.V. Sutton Electric Plant, the status of Sutton Lake as a "water of the State" or "water of the United States" is part of ongoing federal civil litigation. See Cape Fear River Watch, Inc. v. Duke Energy Progress, Inc., 25 F.Supp.3d 798, 808-809 (2014). The Defendants do not concede that Sutton Lake is a jurisdictional water in this Joint Factual Statement.

COAL COMBUSTION PLANTS AND COAL ASH BASINS

13. Power plants that generate electricity through the combustion of coal create a number of waste byproducts. Among those waste byproducts are "coal combustion residuals" or "CCRs." CCRs include fly ash, bottom ash, coal slag, and flue gas desulfurized gypsum. Fly ash and bottom ash are both commonly referred to as "coal ash." Coal ash contains various heavy metals and potentially hazardous constituents, including arsenic, barium, cadmium, chromium, lead, manganese, mercury, nitrates, sulfates, selenium, and thallium. Coal ash has not been defined, itself, as a "hazardous substance" or "hazardous waste" under federal law, although some constituents of coal ash may be hazardous in sufficient quantities or concentrations.

14. Coal ash basins (also known as "coal ash ponds," "coal ash impoundments," or "ash dikes") may be part of the waste treatment system at coal-fired power plants. Historically, the Defendants' coal ash basins were unlined earthen impoundments and typically operated as follows: Coal ash was mixed with water to form slurry. The coal ash slurry was carried through sluice pipe lines to the coal ash basin. Settling occurred in the coal ash basin, in which particulate matter and free chemical components separated from the slurry and settled at the bottom of the basin. Less contaminated water remained at the surface of the basin, from which it could eventually be

discharged if authorized under relevant law and permits. In some instances, such as the Dan River Steam Station, water at the surface of the primary basin, flowed into a secondary basin, where further settling and treatment occurred before its discharge into a water of the United States.

15. Coal ash basins generally continued to store settled ash and particulate material for years or decades. From time to time, the Defendants dredged settled coal ash from the basins, storing the ash in dry stacks on plant property.

16. A total of approximately 108 million tons of coal ash are currently held in coal ash basins owned and operated by the Defendants in North Carolina. Duke Energy Corporation subsidiaries also operate facilities with coal ash basins in South Carolina (approximately 5.99 million tons of coal ash), Kentucky (approximately 1.5 million tons of coal ash), Indiana (approximately 35.6 million tons of coal ash), and Ohio (approximately 5.9 million tons of coal ash).

17. Each of the Defendants' facilities in North Carolina with coal ash basins sought and received permits to discharge treated coal ash wastewater through specified permitted outfalls into waters of the United States, including those listed in paragraph 12.

III. LEGAL AND REGULATORY BACKGROUND

CLEAN WATER ACT

18. The Clean Water Act is a federal law enacted to "restore and maintain the chemical, physical, and biological integrity of the Nation's waters." 33 U.S.C. § 1251(a).

19. The Act prohibits the discharge of any pollutant into waters of the United States except in compliance with a permit issued pursuant to the CWA under the National Pollutant Discharge Elimination System ("NPDES") by the United States Environmental Protection Agency ("EPA") or by a state with an approved permit program. 33 U.S.C. §§ 1311(a) and 1342.

20. The Act defines "discharge of a pollutant" as "the addition of any pollutant to navigable waters from any point source." 33 U.S.C. § 1362(12). The term "pollutant" includes a wide range of materials, including solid waste and industrial waste. 33 U.S.C. § 1362(6). Coal ash and coal ash wastewater are pollutants.

21. A "point source" is a "confined and discrete conveyance, including . . . any pipe . . . from which pollutants are or may be discharged." 33 U.S.C. § 1362(14). Pipes and channelized ditches conveying stormwater or wastewater to surface waters are point sources.

22. "Navigable waters" are defined in the Act as "waters of the United States." 33 U.S.C. § 1362(7). "Waters of the United States" include rivers and streams "which would affect or could affect interstate or foreign commerce including any such waters . . . [w]hich are or could be used by interstate or foreign travelers for recreational or other purposes . . . [and the] [t]ributaries of [such] waters." 40 C.F.R. § 122.2. The following rivers are "waters of the United States": (1) Broad River; (2) French Broad River; (3) Cape Fear River; (4) Catawba River; (5) Dan River; (6) Yadkin-Pee Dee River; (7) Neuse River; (8) Lumber River; (9) Roanoke River; (10) Hyco River; (11) all tributaries of those rivers, including the South Fork of the Catawba River and Crutchfield Branch; and (12) all lakes and reservoirs exchanging water with those rivers, including, but not limited to, Belews Lake, Lake Norman, Mayo Lake, High Rock Lake, Sutton Lake,[2] and Kerr Reservoir.

23. Permits regulating discharges of pollutants (other than dredge and fill material) to waters of the United States are issued under the NPDES permit program. See 33 U.S.C. § 1342. Under the NPDES permit program, persons or entities who wish to discharge one or more pollutants must apply for an permit from the proper state or federal agency. See 40 C.F.R. § 122.21. A "permit" is "an authorization, license, or equivalent

[2] See note 1, supra.

control document issued by EPA or an 'approved State' to implement the requirements of [the CWA]." "Permit" does not include a "draft permit" or a "proposed permit" which has not yet been the subject of final agency action. 40 C.F.R. § 122.2 (emphasis added). Thus, an application for a permit does not provide the applicant with authority or permission to discharge under the Act.

24. States can seek approval from EPA to administer and enforce the CWA NPDES permit program. 33 U.S.C. § 1342(b). EPA's approval of a state program does not affect the United States' ability to enforce the Act's provisions. 33 U.S.C. § 1342(i).

25. On October 19, 1975, EPA approved the State of North Carolina's application to administer the NPDES Program. 40 Fed. Reg. 51493-05 (Nov. 5, 1975).

26. NPDES permits typically contain, among other things, effluent limitations; water quality standards; monitoring and reporting requirements; standard conditions applicable to all permits; and special conditions where appropriate. See 33 U.S.C. § 1342; 40 C.F.R. §§ 122.41-122.50.

27. All of DUKE ENERGY CAROLINAS' and DUKE ENERGY PROGRESS's facilities with coal ash basins in North Carolina are required to comply with the following Standard Conditions,

incorporated into their NPDES permit. See also 40 C.F.R. § 122.41.

a. The Permittee shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this permit with a reasonable likelihood of adversely affecting human health or the environment. Standard Conditions, Section B(2) ("General Conditions").

b. The Permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the Permittee to achieve compliance with the conditions of this permit. Standard Conditions, Section C(2) ("Operation and Maintenance of Pollution Controls").

IV. FACTUAL BASIS FOR PLEA AND RELEVANT CONDUCT

DAN RIVER STEAM STATION

28. DUKE ENERGY CAROLINAS owns and operates the Dan River Steam Station ("DAN RIVER"), located on the Dan River in the Roanoke River Basin near Eden, North Carolina. DAN RIVER began operating in 1949 as a coal combustion plant. The coal combustion unit at DAN RIVER was retired in 2012. DUKE ENERGY CAROLINAS now operates a combined cycle natural gas facility to generate steam and electricity at DAN RIVER.

29. In 1956, the first coal ash basin at DAN RIVER was constructed to store existing and future coal ash. This basin is commonly referred to as the "Primary Ash Basin."

30. Two stormwater pipes run under the Primary Ash Basin: a 48-inch stormwater pipe and a 36-inch stormwater pipe. Both

were designed to carry stormwater from the site to the Dan River.

31. The 48-inch stormwater pipe predates the Primary Ash Basin. As installed in 1954, the 48-inch stormwater pipe was composed of galvanized corrugated metal pipe ("CMP").

32. From 1968 to 1969, the Primary Ash Basin was expanded over the original outfall of the 48-inch stormwater pipe. When the Primary Ash Basin was expanded, the 48-inch stormwater pipe was extended using reinforced concrete. After the expansion, the 48-inch stormwater pipe was a total of 1130 feet in length, of which approximately 786 feet was corrugated metal pipe and approximately 344 feet was reinforced concrete pipe ("RCP").

33. The 36-inch stormwater pipe is composed of reinforced concrete pipe that is approximately 600 feet in length.

34. Between 1976 and 1977, the expanded Primary Ash Basin was divided to form a second basin, commonly referred to as the "Secondary Ash Basin."

35. The Primary Ash Basin has a surface area of approximately 27 acres and a total storage capacity of approximately 477 acre-feet (or 155,431,132 gallons). The Secondary Ash Basin has a surface area of approximately 12 acres and a total storage capacity of approximately 187 acre-feet (or 60,934,277 gallons). In 2013, the basins contained a total of

approximately 1,150,000 cubic yards (or 232,270,130 gallons) of coal ash.

36. In a 2009 EPA Dam Safety Assessment, it was noted that the Primary and Secondary coal ash basins were:

> Classified as a significant hazard potential structure due to the environmental damage that would be caused by misoperation or failure of the structure.

DAN RIVER STEAM STATION NPDES PERMIT

37. On January 31, 2013, the State of North Carolina, through its Department of Environment and Natural Resources ("DENR") - Division of Water Resources ("DWR"), issued a new NDPES permit to DUKE ENERGY CAROLINAS. Effective March 2013, NPDES Permit NC0003468 ("the Dan River Permit"), and authorized the discharge of wastewater from specified outfalls at DAN RIVER.

38. The Dan River Permit required, among other things, that the facility meet the dam design and dam safety requirements set forth in North Carolina regulations at 15A NCAC 2K.

39. Pursuant to 15A NCAC 2K.0301, dams such as the Primary Ash Basin at DAN RIVER are subject to annual safety inspections by state authorities.

40. In 2006, DUKE ENERGY CAROLINAS, with the assistance of DUKE ENERGY BUSINESS SERVICES, applied for a NDPES stormwater permit for the 48-inch and the 36-inch pipes. As of February 2, 2014, DENR had not issued DUKE ENERGY CAROLINAS an individual or general NDPES stormwater permit for either the 48-inch or 36-inch pipe.

41. A NPDES stormwater permit is different than the NPDES permit issued for the discharge of wastewater from a treatment system. Stormwater permits generally do not allow the discharge of wastewater or particulates from coal ash basins or other industrial processes.

42. Neither the 48-inch nor the 36-inch stormwater pipe was a permitted outfall under the Dan River permit for wastewater. Neither DUKE ENERGY CAROLINAS nor any predecessor received authorization pursuant to the CWA and NPDES program to discharge wastewater from the coal ash basins or coal ash stored in those basins from either the 48-inch or 36-inch stormwater pipe under the Primary Coal Ash Basin at DAN RIVER.

1979 DOCUMENTED PROBLEMS WITH STORMWATER PIPES

43. In 1979, DUKE ENERGY CAROLINAS (at that time called Duke Power Company) inspected the 48-inch stormwater pipe through its Design Engineering and Station Support group. Although no major leaks were identified, engineers noted water

leaking into the pipe. Repairs to the 48-inch stormwater pipe were undertaken in response to this inspection.

44. Also in 1979, the Design Engineering and Station Support group inspected the 36-inch stormwater pipe. Twenty-two joints in the 36-inch pipe were noted for major leaks. DUKE ENERGY CAROLINAS/Duke Power Company employees recommended that the company repair the leaks or reroute the drain lines, noting that the discharges could be violations of EPA regulations. Repairs to the 36-inch stormwater pipe were undertaken in response to this inspection.

INSPECTIONS OF DAN RIVER COAL ASH BASINS AND DUKE ENERGY'S RESPONSE TO RECOMMENDATIONS

45. Pursuant to the requirements of North Carolina's dam safety laws, from 1981 through 2007, DUKE ENERGY CAROLINAS/Duke Power Company hired consultants to perform inspections of the coal ash basins at DAN RIVER every five years. The consultants generated reports containing their observations and recommendations that were provided to and reviewed by DUKE ENERGY CAROLINAS/Duke Power Company. In the same time period and pursuant to the same laws, DUKE ENERGY CAROLINAS/Duke Power Company performed its own annual inspections of the coal ash basins. DUKE ENERGY CAROLINAS/Duke Power Company also performed less-detailed monthly inspections of the coal ash basins.

46. In 1981, Engineering Firm #1 conducted the first of five independent inspections of DAN RIVER's ash basins. The report clearly identified the 48-inch pipe as part CMP/part RCP and the 36-inch pipe as RCP. **(See Appendix, Diagram 1).**

47. The 1981 report made the following recommendation, among others:

> The culverts which pass beneath the primary basin may become potential sources of problems, particularly as they age. As noted previously, there seemed to be more water leaving the 52/36-inch culvert than entering it. It is recommended that within the next several months the flow rate at each of the culverts be established, then checked at 6-month intervals thereafter. If there is a significantly greater flow of water leaving the pipes than entering them, the pipes should be inspected for leakage, as was done in 1979, and any needed repairs implemented.

48. The original schematic drawings in the 1981 report were maintained on site at DAN RIVER.

49. A 1984 Annual Inspection report prepared by DUKE ENERGY CAROLINAS/Duke Power Company recommended that "[f]low in the culverts beneath the primary basin should continue to be monitored at six month intervals" and that "[t]he corrugated metal pipe at the west end of the basin should be monitored in future inspections for further damage from seepage flow."

50. A 1985 Annual Inspection report prepared by DUKE ENERGY CAROLINAS/Duke Power Company clearly identified the 48-inch stormwater pipe as CMP. At least one of the engineers who participated in the 1985 annual inspection continues to work for

DUKE ENERGY BUSINESS SERVICES, although currently in a different capacity, and, in fact, conducted two inspections of the Primary and Secondary Ash Basins in 2008.

51. In 1986, Engineering Firm #1 conducted the "Second Five-Year Independent Consultant Inspection of the Ash Dikes" at DAN RIVER. The report clearly identified the 48-inch pipe as part CMP/part RCP and the 36-inch pipe as RCP. Employees of DUKE ENERGY CAROLINAS/Duke Power Company accompanied the consultant during field inspections.

52. The 1986 report repeated the recommendation noted in 1981:

> The monitoring program appears adequate, except it would be desirable to quantitatively (rather than qualitatively) monitor the inflow and outflow at the 52/36-inch diameter culvert, as recommended in the 1981 inspection report, to check for joint leakage. It would also be desirable to do quantitative monitoring of inflow and outflow of the 48-inch diameter culvert that also passes beneath the ash basin; part of this culvert is constructed of corrugated metal pipe which would be expected to have less longevity of satisfactory service than the reinforced concrete pipes.
>
> . . .
>
> It is recommended that quantitative monitoring of inflow and outflow be done at the culverts which pass under the ash basin to check for potential leakage. It is recommended that this monitoring be done at 6-month intervals. If there is a significant difference between inflow and outflow, or whenever there is some cause to suspect leakage, the inside of the culverts should be inspected for leakage.

53. In the 1986 Annual Inspection report, engineers for DUKE ENERGY CAROLINAS/Duke Power Company asked the DAN RIVER personnel to perform the following tasks:

> Quantitatively monitor the inflow and outflow at the two culverts that pass under the ash basin. Instructions are provided on the attached form and tables. Monitoring should begin within thirty days after the installation of V-notched weirs at the inlets and continue at six-month intervals. Random tests at various depths of flow should be made using a bucket and stop watch to verify flow rates given in the attached tables before beginning the monitoring schedule. Results of these tests should be transmitted to Design Engineering.

54. DUKE ENERGY CAROLINAS did not install V-notched weirs at the inlets. Flow monitoring, while apparently performed between 1991 and 1998, was not reported on the requested forms.

55. In 1991, Engineering Firm #2 performed the Third Five-Year Independent Consultant Inspection of the ash basins at DAN RIVER. The report noted that the two stormwater pipes passed under the Primary Ash Basin, but incorrectly identified the entire length of the 48-inch pipe as RCP. During the review process and prior to submission to the North Carolina Utilities Commission, engineers for DUKE ENERGY CAROLINAS/Duke Power Company did not correct the error. This erroneous description of the 48-inch stormwater pipe was repeated in the 1998, 2001 and 2007 Five-Year Independent Consultant Inspection reports produced by Engineering Firms #1 and #3 and not corrected by DUKE ENERGY CAROLINAS/Duke Power Company.

56. The 1991 report repeated the prior monitoring recommendations:

> As was previously recommended, the inflow and outflow of the drainage pipes extending under the ash basins should be monitored for the quantity flowing in versus that flowing out and the turbidity of the discharge. If a disparity becomes evident or if there is evidence of turbidity, the pipes should be checked for leaks.

57. The 1998 Fourth Independent Consultant Inspection report prepared by Engineering Firm #1 made the following recommendation for monitoring of the stormwater pipes:

> The outflow of the drainage pipes extending under the primary ash basins to the river should be monitored for turbidity of the discharge, which would be indicative of soil entrance into the pipes through leaks under the basin. The appearance of turbidity would make it advisable to perform a TV camera inspection of the pipe to help determine if the leak or leaks are a threat.

58. The recommendation in the 1998 report was repeated in identical language in the 2001 and 2007 Five-Year Inspection reports prepared by Engineering Firm #1 and #3, respectively.

59. In the 2007 Sixth Five-Year Independent Consultant Inspection report, Engineering Firm #3 noted that DUKE ENERGY CAROLINAS engineers had not performed annual inspections since 2001, and also had not performed monthly inspections in 2003. The firm expressed concern over the qualifications of the DUKE ENERGY CAROLINAS employees assigned to perform monitoring. Engineering Firm #3 recommended "that Duke reinstitute more

clearly defined engineering responsibility for the receiving and plotting of data from the dikes at the individual stations."

60. After 2008, DUKE ENERGY CAROLINAS installed a metal platform over rip rap (large rocks) along the outer wall of the coal ash basin to better enable employees to access the river bank near the outfalls of the 48-inch and 36-inch stormwater pipes. However, DUKE ENERGY CAROLINAS employees were still unable to view the 36-inch stormwater pipe outfall.

61. A 2009 EPA Dam Safety Assessment, prepared for EPA by an engineering contractor, restated the recommendations of the Sixth Five-Year Independent Consultant Inspection report and recommended that DUKE ENERGY CAROLINAS complete the implementation of those recommendations as described in the Sixth Five-Year Independent Consultant Inspection Report. Based on information received from DUKE ENERGY CAROLINAS, the EPA Dam Safety Assessment reported that "[v]isual monitoring of the outflow from the drainage pipes that go under the Primary Basin is performed on a monthly basis." EPA's contractor observed that during its field inspection in May 2009, the outflow from the 48-inch and 36-inch pipes was clear.

62. The last monthly inspection of the stormwater pipes occurred on January 31, 2014. The form created by DUKE ENERGY CAROLINAS for recording observations during the monthly inspections did not provide any specific space for reporting

observations of the stormwater pipes and the DUKE ENERGY CAROLINAS employee who performed the inspection did not independently record any observations of the pipes on the form for the January 31, 2014, inspection. According to the DUKE ENERGY CAROLINAS employee who performed the January 31, 2014, she did not observe turbidity in the water flowing from the 48-inch stormwater pipe. She could not see the discharge from the 36-inch stormwater pipe due to the location of the outfall in relation to her observation point on the scaffolding.

63. Between 1999 and 2008, and again from January 2013 through January 31, 2014, DUKE ENERGY CAROLINAS employees did not perform any visual inspections of the 36-inch stormwater pipe.

64. Between 1999 and 2008, during the months from May to September, DUKE ENERGY CAROLINAS employees were generally not able to conduct visual inspections of the flow from the 48-inch pipe because it was too difficult to access the end of the pipe from land as the result of vegetative growth and the presence of snakes.

65. Each of the DUKE ENERGY CAROLINAS employees responsible for monitoring the flow from the stormwater pipes from 1991 to December 2012 was aware that the 48-inch stormwater pipe was composed of corrugated metal.

ADDITIONAL DUKE ENERGY DOCUMENTATION THAT THE 48-INCH STORMWATER PIPE WAS CMP

66. On or about January 22, 2014, Engineering Firm #4 finished a draft document titled "Design Report - DRAFT Ash Basin Closure - Conceptual Design for Dan River Steam Station." Appendix 4 of the Report identifies the 48-inch stormwater pipe as "CMP," although that information was not separately stated in the body of the report. In preparing the report, Engineering Firm #4 engineers relied on documentation provided by DUKE ENERGY CAROLINAS and DUKE ENERGY BUSINESS SERVICES, including a 2008 schematic of the Primary Ash Basin that correctly identified the 48-inch stormwater pipe as CMP. Engineers with DUKE ENERGY BUSINESS SERVICES' Central Engineering office worked with Engineering Firm #4 in the preparation of the conceptual design and reviewed the draft documents but did not notice the labeling of the 48-inch stormwater pipe in Appendix 4.

67. A 2009 schematic entitled "Rough Grading - Overall Grading Plan for Dan River Combined Cycle" provided to DUKE ENERGY CAROLINAS by one of its contractors also identified the 48-inch stormwater pipe as CMP.

68. As of the date of the Dan River spill, record-keeping and information-sharing practices at DUKE ENERGY CAROLINAS and DUKE ENERGY BUSINESS SERVICES did not ensure that information such as the actual composition of the 48-inch pipe was

communicated from employees with knowledge to engineers and employees making budget decisions. Additionally, engineers in DUKE ENERGY BUSINESS SERVICES, with responsibility for DAN RIVER, had not sufficiently reviewed the records available to them and, therefore, continued to operate under the erroneous belief that the 48-inch pipe was made entirely of RCP.

RECOMMENDATION FOR CAMERA INSPECTIONS
BY DUKE ENERGY PROGRAM ENGINEERING

69. From at least 2011 through February 2014, DUKE ENERGY BUSINESS SERVICES had a group of engineers assigned to support fossil impoundment and dam inspections. The group was known as "Program Engineering."

70. In May 2011, a Senior Program Engineer and a Program Engineer with responsibilities covering DAN RIVER, recommended that the budget for DAN RIVER include camera inspections of the pipes within the Primary and Secondary Ash Basins. The estimated total cost for the camera inspection of four pipes, including the 48-inch stormwater pipe, within the Primary and Secondary Coal Ash Basins was $20,000.

71. DUKE ENERGY CAROLINAS did not provide funding for the camera inspection.

72. Upon learning that the camera inspection was not funded, the DAN RIVER Station Manager called the Vice-President

of Transitional Plants and Merger Integration, who was in charge of approving the budget at DAN RIVER and other facilities. The Station Manager told the Vice-President that DAN RIVER needed the camera inspections, that the station did not know the conditions of the pipes, and that if one of the pipes failed, there would be environmental harm. The request was still denied.

73. In May 2012, the Senior Program Engineer and the Program Engineer again recommended that the budget for DAN RIVER include camera inspections of the 48-inch and 36-inch stormwater pipes underneath the Primary Ash Basin, along with two additional pipes within the Primary and Secondary Ash Basins. The estimated total costs for the camera inspection was $20,000. The reason noted on the budget request form was "internal recommendation due to age of piping system."

74. By e-mail dated May 30, 2012, the Senior Program Engineer indicated his intention to eliminate the camera survey budget line item for stormwater pipes at DAN RIVER in light of the anticipated closure of the basins.

75. In response to the Senior Program Engineer's May 30, 2012, email, the DAN RIVER Equipment Owner, employed by DUKE ENERGY BUSINESS SERVICES and responsible for monitoring the Primary Ash Basin wrote, in part:

> I would think with the basin closing you would want to do the camera survey. I don't think the drains have ever been checked and since they go under the basin I would like to ensure that we are eliminating any risk before closing the basins.

76. In response to the Senior Program Engineer's May 30, 2012, email, another DUKE ENERGY BUSINESS SERVICES employee advised:

> I don't know if this changes your opinion, but [it] isn't likely that the ash basin will close in 2013. We have to submit a plan to the state at least one year prior to closure and we haven't even begun to prepare that.

77. On a date unknown but sometime between May 2012 and July 2012, at an in-person meeting, a DUKE ENERGY BUSINESS SERVICES Program Engineer asked the Vice-President of Transitional Plants and Merger Integration whether camera inspections of the stormwater pipes would be funded. The Vice-President said no.

78. In June 2012, preliminary engineering plans for closing the DAN RIVER coal ash basins called for the removal of both the 48-inch and 36-inch pipes. However, between 2012 and 2014, there was no set date for closing and no formal closure plan had been submitted to DENR. In December 2012, the DAN RIVER ash basin closure was not projected to be completed until 2016.

79. DUKE ENERGY CAROLINAS did not provide funding for the camera inspections of the stormwater pipes and no camera

inspections were performed prior to February 2, 2014. If a camera inspection had been performed as requested, the interior corrosion of the elbow joint in the 48-inch pipe would likely have been visible.

80. From at least January 1, 2012, through February 2, 2014, DUKE ENERGY CAROLINAS and DUKE ENERGY BUSINESS SERVICES failed to take reasonable steps to minimize or prevent discharge of coal ash to the Dan River that would adversely affect the environment and failed to properly operate and maintain the DAN RIVER coal ash basins and the related stormwater pipes located beneath the Primary Coal Ash Basin, thus, negligently violating the DAN RIVER NPDES permit.

FEBRUARY 2014 DISCHARGES INTO THE DAN RIVER

81. On February 2, 2014, a five-foot long elbow joint within the sixty-year-old corrugated metal section of the 48-inch pipe under the Primary Ash Basin at DAN RIVER failed, resulting in the release of coal ash wastewater and coal ash into the Dan River.

82. Later inspection of the elbow joint, after its retrieval from the Dan River, revealed extensive corrosion of the metal of the elbow joint initiating at the bottom center of the elbow. The parties disagree about some of the factors that contributed to the extensive corrosion. Nevertheless, the age of the pipe was at or beyond the reasonably expected serviceable

life for CMP under similar conditions. Ultimately, the combination of the corrosion and the weight of the coal ash basin over the elbow joint caused it to buckle, fail, and be pushed through the end of the 48-inch stormwater pipe into the Dan River.

83. Between approximately 1:30 p.m. and approximately 2:00 p.m. on February 2, 2014, a security guard at DAN RIVER noticed that the level of the wastewater in the Primary Ash Basin had dropped significantly.

84. The security guard immediately notified DUKE ENERGY CAROLINAS employees in the control room for the adjacent natural gas-powered combined cycle plant. The DUKE ENERGY CAROLINAS Shift Supervisor on duty went to the Primary Ash Basin and observed a large sinkhole. The Shift Supervisor saw only residual water and mud left in the basin. The Shift Supervisor alerted other DUKE ENERGY CAROLINAS and DUKE ENERGY BUSINESS SERVICES employees in order to begin response efforts.

85. After the initial discovery of the sinkhole in the Primary Ash Basin on February 2, 2014, an employee who responded to the site circulated photographs of the Primary Ash Basin to other DUKE ENERGY CAROLINAS and DUKE ENERGY BUSINESS SERVICES employees via e-mail at approximately 3:49 p.m.

86. Photographs attached to the 3:49 p.m. e-mail reflected the status of the basin. **(See Appendix, Photographs 1 - 4).**

87. From on or about February 2, 2014, through February 8, 2014, the unpermitted discharge of approximately 27 million gallons of coal ash wastewater and between 30,000 and 39,000 tons of coal ash into the Dan River occurred through the 48-inch pipe from the Primary Coal Ash Basin.

88. According to the U.S. Fish and Wildlife Service, coal ash from the release traveled more than 62 miles down the Dan River, from the Middle District of North Carolina, through the Western District of Virginia, and into the John H. Kerr Reservoir in the Eastern District of North Carolina and Eastern District of Virginia.

89. On or about February 8, 2014, DUKE ENERGY CAROLINAS sealed the outfall of the 48-inch pipe, halting the discharge of coal ash wastewater and coal ash into the Dan River.

DISCHARGES FROM THE 36-INCH STORMWATER PIPE

90. On February 6, 2014, an interior video inspection of the 36-inch stormwater pipe revealed: (1) infiltration of wastewater occurring through a number of joints; (2) water jets from pressurized infiltration at three joints; (3) separation in one joint near the outfall point; (4) cracks running lengthwise through several pipe segments; and (5) sections of ponding water indicating irregular vertical alignment.

91. Analysis of water samples from the 36-inch pipe revealed that the line was releasing wastewater that contained

elevated levels of arsenic. On February 14, 2014, the arsenic concentration in the effluent at the outfall of the 36-inch pipe was 140 ug/L. On February 17, 2014, the arsenic concentration in the effluent at the same point was 180 ug/L. The North Carolina water quality standard for the protection of human health for arsenic is 10 ug/L and the water quality standard for the protection of freshwater aquatic life is 50 ug/L.

92. Discharge of contaminated wastewater continued from the 36-inch pipe between February 6, 2014, and February 21, 2014. The nature of the wastewater infiltration into the 36-inch stormwater pipe and DUKE ENERGY CAROLINAS employees' visual and auditory confirmation of flow from the 36-inch pipe indicates that discharge from the 36-inch pipe began a significant period of time before February 6, 2014. The discharge began at least as early as January 1, 2012, continued until February 21, 2014, and was not authorized by a NPDES permit.

93. On February 21, 2014, DUKE ENERGY CAROLINAS sealed the 36-inch stormwater pipe.

RESPONSE COSTS FOR DAN RIVER RELEASE

94. Thus far, DUKE ENERGY CAROLINAS and federal, state, and local governments have spent over $19 million responding to the spill.

95. Drinking water intakes in the Dan River watershed, including those for the Cities of Danville, Virginia Beach, and Chesapeake and for the Halifax County Service Authority in Virginia were temporarily closed and were required to undertake additional monitoring for contamination. Monitoring results indicated that the water treatment plants along the Dan River were able to adequately treat and remove the coal ash and related contaminants from the spill.

96. The North Carolina Department of Health and Human Services issued an advisory against consuming fish from or recreational contact with the Dan River from the point of the spill to the North Carolina - Virginia border from February 12, 2014, to July 22, 2014.

97. DUKE ENERGY CAROLINAS has reimbursed many entities for their expenditures in the aftermath of the spill. Nonetheless, at least two localities and one federal agency have not yet been fully reimbursed. Those entities and their expenditures are: (1) Virginia Beach, $63,309.45; (2) Chesapeake, Virginia, $125,069.75; and (3) the United States Army Corps of Engineers, $31,491.11.

CAPE FEAR STEAM ELECTRIC PLANT

98. DUKE ENERGY PROGRESS (formerly "Progress Energy Carolinas") owns the Cape Fear Steam Electric Plant ("CAPE

FEAR"), located adjacent to the Cape Fear River, just south of the confluence of the Haw and Deep Rivers and approximately two miles southeast of Moncure, North Carolina.

99. CAPE FEAR has a total of five coal ash basins. Three of the basins, constructed in 1956, 1963, and 1970 have been inactive for many years. Two of the basins, constructed in 1978 and 1985 continued to receive coal ash slurry and other forms of wastewater through at least November 2011.

100. The 1978 ash basin had a storage capacity of 880 acre-feet (approximately 286,749,258 gallons), a surface area of 43 acres, and a maximum structural height of 27 feet. The 1978 ash basin included a "riser," also known as a "stand pipe," used under normal operation to allow the passive and permitted discharge of wastewater treated by settlement from the basin. The riser was constructed of vertically stacked 18-inch diameter concrete pipe sections.

101. The 1985 ash basin had a storage capacity of 1764 acre-feet (approximately 574,801,921 gallons), a surface area of 65 acres, and a maximum structural height of 28 feet. The 1985 ash basin included a riser constructed of vertically stacked 48-inch diameter concrete pipe sections.

102. In a 2009 EPA Dam Safety Assessment, both the 1978 and 1985 coal ash basins at CAPE FEAR were classified as having "significant hazard potential," as previously defined.

103. By December 2011, DUKE ENERGY PROGRESS/Progress Energy Carolinas ceased electric power generation at CAPE FEAR. As a result of the cessation of operation, coal ash slurry was no longer received by the 1978 or 1985 coal ash basin, although each basin continued to receive rainwater or stormwater.

INSPECTIONS OF CAPE FEAR ASH BASINS, MONITORING RECOMMENDATIONS, AND DETECTION OF LEAKING RISERS

104. DUKE ENERGY PROGRESS/Progress Energy Carolinas engaged outside firms to perform annual and five-year inspections of the coal ash basins at CAPE FEAR, as required by state law.

105. On or about May 1, 2008, Engineering Firm #3, hired by DUKE ENERGY PROGRESS/Progress Energy Carolinas, conducted an annual inspection of the CAPE FEAR coal ash basins and generated a report of its observations, conclusions, and recommendations. The report was submitted to DUKE ENERGY PROGRESS/Progress Energy Carolinas and reviewed by the plant manager and environmental coordinator for CAPE FEAR.

106. The 2008 annual inspection report described the condition of the risers in the 1978 and 1985 coal ash basins as "marginal" and estimated that the risers were "likely to develop problems" in two to five years from the date of the report. The report further recommended that DUKE ENERGY PROGRESS/Progress Energy Carolinas perform its own inspections of the risers in

the 1978 and 1985 ash basins by boat, in order to better assess the condition of the risers.

107. The recommendation to inspect the risers using a boat was repeated in annual reports produced by engineering firms and submitted to DUKE ENERGY PROGRESS/Progress Energy Carolinas in 2009 and 2010, and to DUKE ENERGY PROGRESS in 2012 and 2013.

108. At no time from May 1, 2008, until March 2014 did DUKE ENERGY PROGRESS/Progress Energy Carolinas perform inspections of the risers in the 1978 or 1985 ash basins by boat.

109. At some time during the summer of 2011, but on a date unknown, the DUKE ENERGY PROGRESS/Progress Energy Carolinas Environmental Coordinator and the NPDES Subject Matter Expert responsible for CAPE FEAR visited the site. During their visit, they became aware that the risers in the 1978 and 1985 coal ash basins were leaking. During the fall of 2011, but on a date unknown, they informed DUKE ENERGY PROGRESS/Progress Energy Carolinas management that repairs were needed on the risers. No additional inspection or monitoring of the risers was undertaken by DUKE ENERGY PROGRESS/Progress Energy Carolinas as a result of their observations prior to March 2014.

110. The 2012 Five-Year Independent Consultant Report, produced on January 26, 2012, by Engineering Firm #4, noted that the skimmer located at the top of the riser in the 1978 ash basin was corroded and tilted. The skimmer was designed to

prevent debris from being discharged from the basin or clogging the riser.

111. Photographs included with the 2012 Five-Year Independent Consultant Report show the skimmer on the riser in the 1978 coal ash basin sitting askew. **(See Appendix, Photographs 5 & 6)**.

112. Photographs included with the 2012 Five-Year Independent Consultant Report show the skimmer on the riser in the 1985 coal ash basin. **(See Appendix, Photograph 7)**.

113. Annual inspection reports for 2012 and 2013 also reported that the riser in the 1978 ash basin was damaged, deteriorated, and tilted. The annual reports recommended that DUKE ENERGY PROGRESS/Progress Energy Carolinas replace or repair the skimmer on the riser in the 1978 ash basin.

114. At no time from January 26, 2012, through March 2014 did DUKE ENERGY PROGRESS/Progress Energy Carolinas repair or replace the skimmer on the riser in the 1978 coal ash basin.

115. The annual inspection report produced on or about June 24, 2013, by Engineering Firm #4 and submitted to DUKE ENERGY PROGRESS noted that a "trickle of flow" was observed at the outfalls leading from the risers in the 1978 and 1985 ash basins which the report concluded indicated possible leakage.

DEWATERING OF THE ASH BASINS AND REPAIR OF RISERS

116. During the summer of 2013, on a date unknown, an employee of DUKE ENERGY BUSINESS SERVICES contacted a contractor specializing in diving and underwater pipe repair and mentioned the possible need for riser repair at CAPE FEAR. The contractor was not engaged at that time and no schedule for the potential work was discussed.

117. Also during the summer of 2013, DUKE ENERGY PROGRESS and DUKE ENERGY BUSINESS SERVICES were engaged in planning for the closure of the coal ash basins at CAPE FEAR. On or about July 11, 2013, consulting engineers assisting DUKE ENERGY PROGRESS and DUKE ENERGY BUSINESS SERVICES in planning for ash basin closure produced and provided to DUKE ENERGY PROGRESS and DUKE ENERGY BUSINESS SERVICES a "site investigation plan" that included plans for locating, inspecting, and determining the composition of risers and discharge pipes for each ash basin.

118. As part of the ongoing planning for ash basin closure, DUKE ENERGY PROGRESS and DUKE ENERGY BUSINESS SERVICES sought to eliminate the need for NPDES permits for CAPE FEAR, in keeping with its "Ash Basin Closure Strategy." This strategy would reduce continuing operation and maintenance costs at the plant while ash basin closure was pending. DUKE ENERGY PROGRESS and DUKE ENERGY BUSINESS SERVICES knew that in order to eliminate

the NPDES permits, the coal ash basins would have to be in a "no flow" state. To reach that state, DUKE ENERGY PROGRESS needed to eliminate the riser leaks at the 1978 and 1985 coal ash basins as well as lower the level of the contents of the ash basins to prevent water from overtopping the risers during a 25-year rain event. These requirements were discussed by a number of DUKE ENERGY PROGRESS and DUKE ENERGY BUSINESS SERVICES employees during the summer of 2013, including the DUKE ENERGY BUSINESS SERVICES NPDES Subject Matter Expert and the DUKE ENERGY BUSINESS SERVICES Director of Plant Demolition and Retirement.

119. Also as part of the ongoing planning for ash basin closure at CAPE FEAR, DUKE ENERGY PROGRESS and DUKE ENERGY BUSINESS SERVICES recognized that dewatering the ash basins was a necessary and time-consuming part of the process of closing an ash basin. DUKE ENERGY PROGRESS and DUKE ENERGY BUSINESS SERVICES further believed that dewatering the coal ash basins would "lessen hydrostatic pressure" and "over a relatively brief time reduce and/or eliminate seepage." At the time, seepage was the subject of threatened citizen law suits, a series of state-filed civil complaints, and significant public concern.

120. DUKE ENERGY PROGRESS and DUKE ENERGY BUSINESS SERVICES also believed that dewatering the 1978 and 1985 coal ash basins prior to repairing the risers would provide a safer environment

for contractors performing repair work. DUKE ENERGY PROGRESS and DUKE ENERGY BUSINESS SERVICES employees knew that the leaks in the risers were likely being caused by cracks or failures in the grout between the concrete pipe sections that were underwater. The employees did not know how far underwater the leaks or grout failures were or how many sections of the pipe would need repair. Because the risers were filled with air but surrounded by water, underwater repair of the risers could be hazardous to the divers due to a phenomenon known as "differential pressure." DUKE ENERGY PROGRESS and DUKE ENERGY BUSINESS SERVICES employees believed that removing the standing water from the 1978 and 1985 basins to at or below the level of the leaking portions of the risers would eliminate the risk from differential pressure.

121. Beginning on or about August 16, 2013, and continuing through on or about September 30, 2013, employees and contractors for DUKE ENERGY PROGRESS and DUKE ENERGY BUSINESS SERVICES began developing a work plan for pumping water from the 1985 ash basin at CAPE FEAR.

122. On or about September 30, 2013, DUKE ENERGY PROGRESS employees began pumping water from the 1985 ash basin at CAPE FEAR, using a Godwin pump and hoses.

123. On or about October 2, 2013, two days after pumping began at the 1985 ash basin, a DUKE ENERGY BUSINESS SERVICES

engineer assigned to the plant retirement program emailed a representative of a contracting company specializing in underwater pipe repair. In the email, the engineer indicated that there were "several potential opportunities at [the] Cape Fear plant that we would like you to look at." The engineer went on to describe one of the opportunities as:

> Ash pond riser repairs. Two ponds' risers leak. There is a slow trickle out of the discharge of the concrete riser pipes at two ash ponds. We may elect to stop the leak. Could you provide a ballpark for providing the investigation and repair services? Could you also describe what the process would be?

124. On or about October 22, 2013, the underwater pipe repair contractor submitted to DUKE ENERGY PROGRESS and DUKE ENERGY BUSINESS SERVICES a project estimate titled "Abandonment of Intakes and Leak Sealing" that included four tasks, including "Ash Pond Riser Repairs."

125. On or about January 13, 2014, DUKE ENERGY PROGRESS began dewatering operations at the 1978 coal ash basin at CAPE FEAR, using a Godwin pump and hoses similar to those used at the 1985 coal ash basin, as well as the same work plan.

126. On or about January 24, 2014, DUKE ENERGY PROGRESS signed a contract, through DUKE ENERGY BUSINESS SERVICES, acting as its agent, with the underwater pipe repair contractor for various projects at CAPE FEAR relating to plant decommissioning and coal ash basin closure, as addressed in the October 22,

2014, project estimate. One of the projects was repair work on the risers in the 1978 and 1985 coal ash basins. The contract specified that work under the contract would "start on or about January 27, 2014 and shall be completed no later than December 31, 2014." The contract did not identify specifically when the work would begin on the risers.

127. On or about March 11, 2014, DENR officials from both the DWR and the Division of Mineral and Land Resources visited CAPE FEAR to perform an inspection. The DENR officials were accompanied by several DUKE ENERGY PROGRESS and DUKE ENERGY BUSINESS SERVICES employees during their inspection. DENR observed the Godwin pumps at the 1985 and 1978 ash basins along with obvious signs of a significant drop in the water level in the coal ash basins and disturbances in the surface of the coal ash in the basins. **(See Appendix, Photographs 8 - 10).**

128. At the conclusion of the DENR inspection on March 11, 2014, a dispute arose between DENR officials and DUKE ENERGY PROGRESS and DUKE ENERGY BUSINESS SERVICES employees over whether DUKE ENERGY PROGRESS had been authorized by DENR-DWR to discharge water from the coal ash basins using Godwin pumps.

129. On or about March 19 and 20, 2014, an employee of the underwater pipe repair contractor performed video inspections of the risers in the 1978 and 1985 coal ash basins. The contractor observed that in the discharge pipe leading from the riser in

the 1985 coal ash basin, the visibility in one area was "next to nothing." The visibility was negatively impacted by turbidity and debris in the pipe. The contractor observed a "slow trickle" of water intruding into the riser in the 1978 coal ash basin. At the time of the camera inspections, the water level in both coal ash basins had already been lowered below the uppermost joints of the risers and, thus, below the level of some of the leaks.

130. No other camera inspections were conducted of the risers between 2008 and March 19, 2014.

131. On or about March 19 and 20, 2014, employees and agents of the underwater pipe repair contractor replaced and resealed the grout between the concrete pipe sections of the risers in the 1978 and 1985 coal ash basins. **(See Appendix, Photographs 11 through 14).**

132. Between at least January 1, 2012, and January 24, 2014, DUKE ENERGY PROGRESS and DUKE ENERGY BUSINESS SERVICES failed to properly maintain the risers in the 1978 and 1985 coal ash basins at CAPE FEAR in violation of the applicable NPDES permit.

HISTORICAL SEEPS AND DISCHARGES FROM COAL ASH BASINS

133. DUKE ENERGY CAROLINAS' and DUKE ENERGY PROGRESS's coal ash basins are comprised of earthen dams. Over time, "seeps" developed in the dam walls. "Seeps" occur when water, often

carrying dissolved chemical constituents, moves through porous soil and emerges at the surface. Seeps are common in earthen dams. The Defendants have identified nearly 200 distinct seeps at the Defendants' coal ash basins throughout North Carolina in permit modification applications filed in 2014. Not all seeps necessarily reach waters of the United States. However, some of the discharge from seeps is collected and moved through engineered drains or channels to waters of the United States. Other seeps are simply allowed to flow across land surfaces to waters of the United States. Each of the facilities listed in the table at paragraph 12 had seeps of some form.

134. Water from seeps may transport pollutants. Wastewater sampled from various seep locations at DUKE ENERGY CAROLINAS and DUKE ENERGY PROGRESS coal ash basins in 2014 was found to contain constituents including aluminum, arsenic, barium, boron, chloride, chromium, copper, fluoride, lead, manganese, nickel, selenium, thallium, and zinc, and was additionally found to be acidic.

135. On June 7, 2010, EPA issued interim guidance to assist NPDES permitting authorities with establishing appropriate permit requirements for wastewater discharges from coal ash basins at power plants. In the guidance, EPA advised with respect to point source discharges of seepage:

> If the seepage is directly discharged to waters of the United States, it is likely discharged via a discrete conveyance and thus is a point source discharge. Seepage discharges are expected to be relatively minor in volume compared to other discharges at the facility and could be inadvertently overlooked by permitting authorities. Although little data are available, seepage consists of [coal combustion residuals] including fly ash and bottom ash and fly ash transport water and [flue-gas desulfurization] wastewater. If seepage is discharged directly via a point source to a water of the U.S., the discharge must be addressed under the NPDES permit for the facility.

136. Since at least 2010, seepage from DUKE ENERGY CAROLINAS' and DUKE ENERGY PROGRESS's coal ash basins at certain of their 14 coal-fired power plants in North Carolina entered waters of the United States through discrete conveyances.

137. Wetlands may also suffer impacts from the operation of coal-fired plants. Coal ash basins were historically sited near rivers and are, therefore, often located in or near riparian wetlands and some coal ash basins have hydrologic connections to wetlands via groundwater or seeps.

138. Since 2010, as part of the NPDES permitting process in North Carolina, coal-fired plants are required to monitor groundwater to assure natural resources are protected in accordance with federal and state water quality standards. Monitoring of groundwater at coal ash basins owned by DUKE ENERGY CAROLINAS and DUKE ENERGY PROGRESS has shown exceedances of groundwater water quality standards for pollutants under and near the basins including arsenic, boron, cadmium, chromium,

iron, manganese, nickel, nitrate, selenium, sulfate, thallium, and total dissolved solids.

139. At various times between 2010 and 2014 the Defendants included general references to seeps in correspondence and permit applications with DENR and disclosed more detailed information concerning certain seeps, including engineered seeps (i.e., man-made channels). The Defendants did not begin gathering and providing detailed, specific, and comprehensive data concerning seeps, and particularly seeps discharging to waters of the United States, at each of the North Carolina coal ash basins to DENR until after the DAN RIVER spill in 2014.

140. After the coal ash spill at DAN RIVER in 2014, DUKE ENERGY CAROLINAS and DUKE ENERGY PROGRESS, with the assistance of DUKE ENERGY BUSINESS SERVICES, filed NPDES permit renewal and/or modification applications seeking authorization for certain seeps that discharged, via a point source, directly to a water of the United States. These applications are currently pending as DENR considers the impacts of the seeps and discharges on the receiving waters of the United States.

H.F. LEE STEAM ELECTRIC PLANT

141. DUKE ENERGY PROGRESS owns the H. F. Lee Steam Electric Plant ("LEE"), which is located in Goldsboro, North Carolina. LEE (formerly known as the "Goldsboro Plant") began operation

shortly after World War II and added additional coal-fired combustion units in 1952 and 1962. The plant retired the coal-fired units in September of 2012.

142. LEE used several coal ash basins in the past. Only one of the remaining coal ash basins still contains water and ash sluiced from LEE (the "active coal ash basin"). The active ash basin sits on the north side of the Neuse River. **(See Appendix, Photograph 15)**.

143. The active coal ash basin is triangle-shaped and includes a primary basin and a small secondary settling basin. The treatment system is designed so that water discharges from the primary basin into the secondary basin and from the secondary basin into the Neuse River.

144. The NPDES permit No. NC0003417 for LEE, effective November 1, 2009, authorized two discharges into the Neuse River – one from the active coal ash basin ("Outfall 001") and one from the cooling water pond ("Outfall 002"). A 2010 modification of the 2009 permit also authorized a third outfall ("Outfall 003") from a combined cycle generation facility. Water does not currently discharge from the active coal ash basin into the Neuse River via Outfall 001.

145. Beginning at a time unknown but no later than October 2010, DUKE ENERGY PROGRESS/Progress Energy Carolinas identified a seep on the eastern embankment of the active coal ash basin.

This seep was adjacent to an area of seepage that was identified and repaired in 2009 and 2010. This seep in 2010 collected and flowed to a "flowing ditch" outside of the active coal ash basin. This seep was repaired in May of 2011.

146. Additional seeps on the eastern side of the active coal ash basin also flowed into the same drainage ditch as the seep identified in October 2010. The drainage ditch discharged into the Neuse River at latitude 35.379183, longitude -78.067533. The drainage ditch was not an authorized outfall under the NPDES permit. In 2014, DUKE ENERGY PROGRESS identified the GPS coordinates of four seeps on the eastern side of the coal ash basin as: latitude 35.380510, longitude -78.068532; latitude 35.382767, longitude -78.069655; latitude 35.386968, longitude -78.071942; and latitude 35.379492, longitude -78.067718.

147. On February 20, 2013, DENR personnel sampled water in three locations from the drainage ditch. This sampling occurred after DENR personnel from the Land Quality Section observed a seep near the southeast corner of the ash pond dike. The seep collected in the unpermitted discharge ditch and flowed into the Neuse River. Water quality analysis of samples from the drainage ditch showed exceedances of state water quality standards for chloride, arsenic, boron, barium, iron, and manganese. This discharge of wastewater into the Neuse River

from the drainage ditch at LEE was not authorized under the NPDES permit.

148. On March 11, 2014, DENR personnel again sampled wastewater from the drainage ditch referenced previously. The ditch showed exceedances for iron and manganese.

149. Unpermitted discharges, in violation of the applicable NPDES permit, occurred at LEE from at least October 1, 2010, through December 30, 2014.

RIVERBEND STEAM STATION

150. DUKE ENERGY CAROLINAS owns and operates the Riverbend Steam Station ("RIVERBEND"), located in Gaston County, North Carolina, approximately 10 miles from the city of Charlotte and immediately adjacent to Mountain Island Lake, on a bend in the Catawba River. Mountain Island Lake is the primary source of drinking water for residents of Gaston and Mecklenburg Counties.

151. RIVERBEND began commercial operation in 1929 and its combustion units were retired in April 2013, with plans to demolish it after 2016. It has two unlined coal ash basins along Mountain Island Lake, with dams reaching up to 80 feet in height. The RIVERBEND dams are designated in a 2009 EPA Dam Safety Assessment as "Significant Hazard Potential," as previously defined. RIVERBEND contains approximately 2,730,000 million tons of stored coal ash.

152. The RIVERBEND NPDES permit, No. NC0004961, was issued on March 3, 1976, and has been renewed subsequently, with the current NPDES Permit expiring on February 28, 2015. The RIVERBEND NPDES permit allows the facility to discharge wastewater to the Catawba River from three "permitted outfalls" in accordance with the effluent limitations and monitoring requirements regarding flow, suspended solids, oil and grease, fecal coliform, copper, iron, arsenic, selenium, mercury, phosphorus, nitrogen, pH, and chronic toxicity, as well as other conditions set forth therein. Wastewater from the coal ash basin was to be discharged, after treatment by settling, through one of the monitored and permitted outfalls.

153. On December 4 through December 6, 2012, DENR conducted inspections of RIVERBEND and discovered unpermitted discharges of wastewater from the coal ash basin into the Catawba River. Among the unpermitted discharges at RIVERBEND is a seep identified in a 2014 permit modification application as Seep 12, an engineered drain to discharge coal ash contaminated wastewater into the river. RIVERBEND Seep 12 is located at latitude 35.36796809, longitude -80.95935079. **(See Appendix, Photographs 16 through 18)**. At some time unknown, but prior to December 2012, one or more individuals at RIVERBEND created the unpermitted channel that allowed contaminated water from the coal ash basin to be discharged into the river.

154. The unpermitted seep resulted in documented unpermitted discharges from 2011 through 2013 containing elevated levels of arsenic, chromium, cobalt, boron, barium, nickel, strontium, sulfate, iron, manganese, and zinc into the Catawba River.

155. Unpermitted discharges, in violation of the applicable NPDES permit, occurred at RIVERBEND from at least November 8, 2012, through December 30, 2014.

ASHEVILLE STEAM ELECTRIC GENERATING PLANT

156. DUKE ENERGY PROGRESS owns and operates the Asheville Steam Electric Generating Plant ("ASHEVILLE"), in Buncombe County, North Carolina.

157. ASHEVILLE is a coal-powered electricity-generating facility in the Western District of North Carolina. It has two unlined coal ash basins, one constructed in 1964 and the other constructed in 1982. The basins, each approximately 45 acres in size, hold a total of approximately 3,000,000 tons of coal ash waste. **(See Appendix, Photograph 19)**. The basins were each characterized in the 2009 EPA Dam Safety Assessment as "High Hazard Potential," meaning that "failure or mis-operation results will probably cause loss of human life."

158. The ASHEVILLE NPDES permit, number NC0000396, was issued in 2005 and expired in 2010. Progress Energy Carolinas (now DUKE ENERGY PROGRESS) filed a timely permit renewal

application on June 11, 2010. DENR has not yet issued a new permit and ASHEVILLE continues to operate under the terms of the 2005 NPDES permit.

159. On May 13, 2011, DUKE ENERGY PROGRESS/Progress Energy Carolinas sought authority to relocate the settling basin and permitted discharge outfall at ASHEVILLE from its original location near the 1964 coal ash basin to a location approximately 3,000 feet away, latitude 35.47367 and longitude -82.504, in order to allow "stabilization work" on the 1964 ash pond impoundment.

160. On March 11, 2013, DENR staff inspected ASHEVILLE and identified seeps flowing from toe drains at the 1964 coal ash basins. The engineered seep from the 1964 coal ash basin has continued to discharge pollutants. This engineered seep is not authorized under the applicable NPDES permit. Engineered seeps from the 1964 coal ash basin are located at latitude 35.468319, longitude -82.549104 and latitude 35.466943, longitude -82.548502. These engineered seeps discharge through the toe drain to the French Broad River.

161. Unpermitted discharges, in violation of the applicable NPDES permit, occurred at ASHEVILLE from at least May 31, 2011, through December 30, 2014.

BROMIDE IMPACTS FROM FGD SYSTEMS

162. As described above, DUKE ENERGY CAROLINAS owns and operates Belews Creek Steam Station ("BELEWS") in Stokes County, North Carolina, and Cliffside Steam Station ("CLIFFSIDE") in Rutherford and Cleveland Counties, North Carolina.

163. As part of its efforts to comply with the Clean Air Act and North Carolina Clean Smokestacks Act, DUKE ENERGY CAROLINAS installed Flue Gas Desulfurization ("FGD") "scrubbers" to significantly reduce or eliminate certain air pollutants, such as sulfur dioxide and nitrogen oxide at several coal-fired facilities. FGD scrubbers isolate certain pollutants from coal combustion emissions into the air and ultimately divert those pollutants, including bromides, into a gypsum slurry that is eventually routed to the facility's coal ash basins. At times, portions of the slurry may be diverted for reuse in products such as wall board.

164. FGD installation was completed and the scrubbers at BELEWS became fully operational at the end of 2008.

165. When bromide comes into contact with chlorine-based water treatment systems, it can contribute to the formation of compounds known as trihalomethanes ("THMs"). There are no general federal or state water limits for the discharge of bromides to surface water. However, there are state and federal limits for total trihalomethanes ("total THMs") under the Safe

Drinking Water Act. If ingested in excess of the regulatory limits over many years, THMs may cause adverse health effects, including cancer.

DISCHARGE OF BROMIDES AT BELEWS

166. Beginning in 2008 or 2009, the City of Eden ("Eden"), downstream from BELEWS, noted an increase in total THMs in its drinking water.

167. Prior to the installation of the FGD scrubbers, DUKE ENERGY CAROLINAS reported to DENR in its BELEWS NPDES permit applications that bromide occurred in its waste stream at a level too low to detect. When BELEWS applied for a NPDES permit modification in 2009, it made no new disclosures concerning bromide levels because the modification did not relate to bromide and there were no federal or state limitations for bromide discharge.

168. DUKE ENERGY CAROLINAS tested for bromides, as well a number of other potential pollutants, at BELEWS in 2008-2009 to evaluate the effects of the FGD wastewater treatment system. Those test results showed that bromides were discharged from BELEWS into the Dan River. This did not violate the NDPES permit for the facility.

169. In consultation with an outside contractor, in January 2011, Eden determined that an increase in bromides contributed

to the increase in total THMs it had witnessed beginning in 2008-2009.

170. In early 2011, Eden tested the water entering its water treatment facility from the Dan River and performed water tests upstream to determine the source of the bromides.

171. On May 10, 2011, Eden notified DUKE ENERGY CAROLINAS that it was having difficulty with increasing levels of total THMs in its treated drinking water and requested DUKE ENERGY CAROLINAS' bromide sampling data from the outflow of BELEWS. An impending reduction in the threshold for total THMs (required by an EPA rule promulgated under the Safe Drinking Water Act) triggered Eden's particular interest in the pollutant, especially given that Eden was at the upper limit of the then-permissible total THM range.

172. As a result of the water testing, Eden identified the source of the increased bromides as BELEWS, which discharges into the Dan River. Eden shared this information and its test results with DUKE ENERGY CAROLINAS on June 7, 2011.

173. Shortly thereafter, DUKE ENERGY CAROLINAS and DUKE ENERGY BUSINESS SERVICES internally agreed that the increased bromides very likely came from BELEWS and, combined with a number of other factors, had likely caused the THM increase at Eden. DUKE ENERGY CAROLINAS and DUKE ENERGY BUSINESS SERVICES

also agreed internally that the increased bromides were likely the result of the FGD scrubber system.

174. In mid-June 2011, DUKE ENERGY CAROLINAS contacted the Town of Madison ("Madison"), which also draws water from the Dan River and processes that water for drinking and which is closer to BELEWS than Eden. DUKE ENERGY CAROLINAS informed Madison of its findings and Madison asked to be part of the discussions with Eden about reducing bromide levels. DUKE ENERGY CAROLINAS and DUKE ENERGY BUSINESS SERVICES employees met with Eden and Madison several times between June 2011 and April 2012 to discuss reducing total THMs in their drinking water.

175. DUKE ENERGY CAROLINAS informed DENR of the increase in bromide levels in its effluent when it filed its NPDES permit renewal application for BELEWS on August 29, 2011. In the application, DUKE ENERGY CAROLINAS listed bromide as a pollutant present in outfalls 001 (into Belews Lake) and 003 (into Dan River). The largest concentration of bromide was listed as 6.9 mg/L from Outfall 003, which translates to 6.9 parts per million (ppm) or 6907 parts per billion (ppb). This bromide result appears to have been taken from a sample of water collected in January 2011 and analyzed after Eden had brought the issue to DUKE ENERGY CAROLINAS' attention.

176. At the time DUKE ENERGY CAROLINAS filed its NPDES permit renewal application for BELEWS, none of the previous permits had placed any restrictions or limits on bromides.

177. In mid-October 2011, Eden informed DUKE ENERGY CAROLINAS that Madison had violated its limit on total THMs. DUKE ENERGY CAROLINAS was also informed that Henry County, Virginia, (which purchases Eden's water) violated its total THM limit. Dan River Water (another purchaser of Eden's water) also violated its total THM limit.

178. On November 16, 2011, DENR's Winston-Salem Regional Office held a meeting with DUKE ENERGY CAROLINAS, DUKE ENERGY BUSINESS SERVICES, Eden, and Madison regarding the bromide issue. All participants agreed that the total THM problem was caused by bromides entering the Dan River from BELEWS. DUKE ENERGY CAROLINAS was not aware of the relationship between bromides and THMs until Eden brought the matter to DUKE ENERGY CAROLINAS' attention in 2011.

179. Since the November 2011 meeting, DUKE ENERGY CAROLINAS has entered into written agreements with Eden and Madison to assist them with a portion of the costs of modifying and modernizing their water treatment systems.

DISCHARGE OF BROMIDES AT CLIFFSIDE

180. Beginning at about the time DUKE ENERGY CAROLINAS responded to Eden's initial complaints regarding the bromide

discharge at BELEWS, DUKE ENERGY CAROLINAS conducted an initiative to monitor bromide discharge at other locations employing FGD scrubbers.

181. As a result of this initiative, in or about early August 2011, DUKE ENERGY CAROLINAS also internally identified the CLIFFSIDE facility in western North Carolina as one that could pose a potential THM problem in light of the relatively shallow river (the Broad River) into which CLIFFSIDE discharged and the presence of relatively close downstream facilities that drew drinking water from the Broad River.

182. The last CLIFFSIDE NPDES permit was issued in January 2011 and did not reference bromide.

183. DUKE ENERGY CAROLINAS AND DUKE ENERGY BUSINESS SERVICES informed neither downstream communities nor DENR regarding this discharge from CLIFFSIDE. As of the date of this joint factual statement, the parties are not aware of a community downstream from CLIFFSIDE that has reported elevated levels of total THMs due to an increase in bromide discharge from the facility, but acknowledge the possibility that one or more communities may have been affected.

184. In 2013, DUKE ENERGY CAROLINAS installed a spray dry absorber for one of the two FGD scrubber units at the CLIFFSIDE facility which reduced the bromide discharge from CLIFFSIDE.

The other FGD scrubber unit at CLIFFSIDE operates only intermittently.

SUTTON FACILITY

185. DUKE ENERGY PROGRESS owns and operates the L.V. Sutton Steam Station ("SUTTON") in New Hanover County, North Carolina. SUTTON houses two coal ash basins, one constructed in 1971 and one constructed in 1984.

186. Located near SUTTON is the community of Flemington. Flemington's water supply has a history of water-quality problems. In 1978, an adjacent landfill, designated as a "Superfund" site, contaminated Flemington's drinking water and caused authorities to construct new wells.

187. Flemington's new wells are located near SUTTON's coal ash basins. They are located down-gradient from the SUTTON coal ash basins, meaning groundwater ultimately flows from the coal ash basins toward the Flemington wells.

188. DUKE ENERGY PROGRESS/Progress Energy Carolinas has monitored groundwater around SUTTON since 1990. Monitoring particularly focused on a boron plume emanating from the coal ash ponds.

189. From at least 2010 through 2013, the groundwater monitoring wells at SUTTON reported unnaturally elevated levels of some constituents, including manganese, boron, sulfate, and total dissolved solids.

190. Flemington's public utility also tested its water quality. Those tests showed exceedances of barium, manganese, sodium, and sulfate in 2013.

191. In June and July 2013, Flemington's public utility concluded that boron from SUTTON's ash ponds was entering its water supply. Tests of water from various wells at and near SUTTON from that period showed elevated levels of boron, iron, manganese, thallium, selenium, cadmium, and total dissolved solids.

192. In October 2013, DUKE ENERGY PROGRESS entered into an agreement with the Cape Fear Public Utility Authority to share costs for extending a municipal water line to the Flemington community.

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SO AGREED, THIS 20th DAY OF FEBRUARY, 2015.

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Eastern District of North Carolina
North Carolina

JOHN C. CRUDEN
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SO AGREED, this the 20 day of February, 2015.

DUKE ENERGY CAROLINAS, LLC.
Defendant

BY: _____
JULIA S. JANSON
Executive Vice-President,
Chief Legal Officer, and
Corporate Secretary

Authorized Designated Official for
Duke Energy Carolinas, LLC

_____
JAMES P. COONEY, III
Womble Carlyle Sandridge & Rice LLP
Counsel for the Defendant

SO AGREED, this the 20 day of February, 2015.

DUKE ENERGY PROGRESS, INC.
Defendant

BY: _____
JULIA S. JANSON
Executive Vice-President,
Chief Legal Officer, and
Corporate Secretary

Authorized Designated Official for
Duke Energy Progress, Inc.

_____
JAMES P. COONEY, III
Womble Carlyle Sandridge & Rice LLP
Counsel for the Defendant

SO AGREED, this the 20 day of February, 2015.

DUKE ENERGY BUSINESS SERVICES, INC.
Defendant

BY: _____
JULIA S. JANSON
President and Chief Legal Officer

Authorized Designated Official for
Duke Energy Business Services, LLC

_____
JAMES P. COONEY, III
Womble Carlyle Sandridge & Rice LLP
Counsel for the Defendant

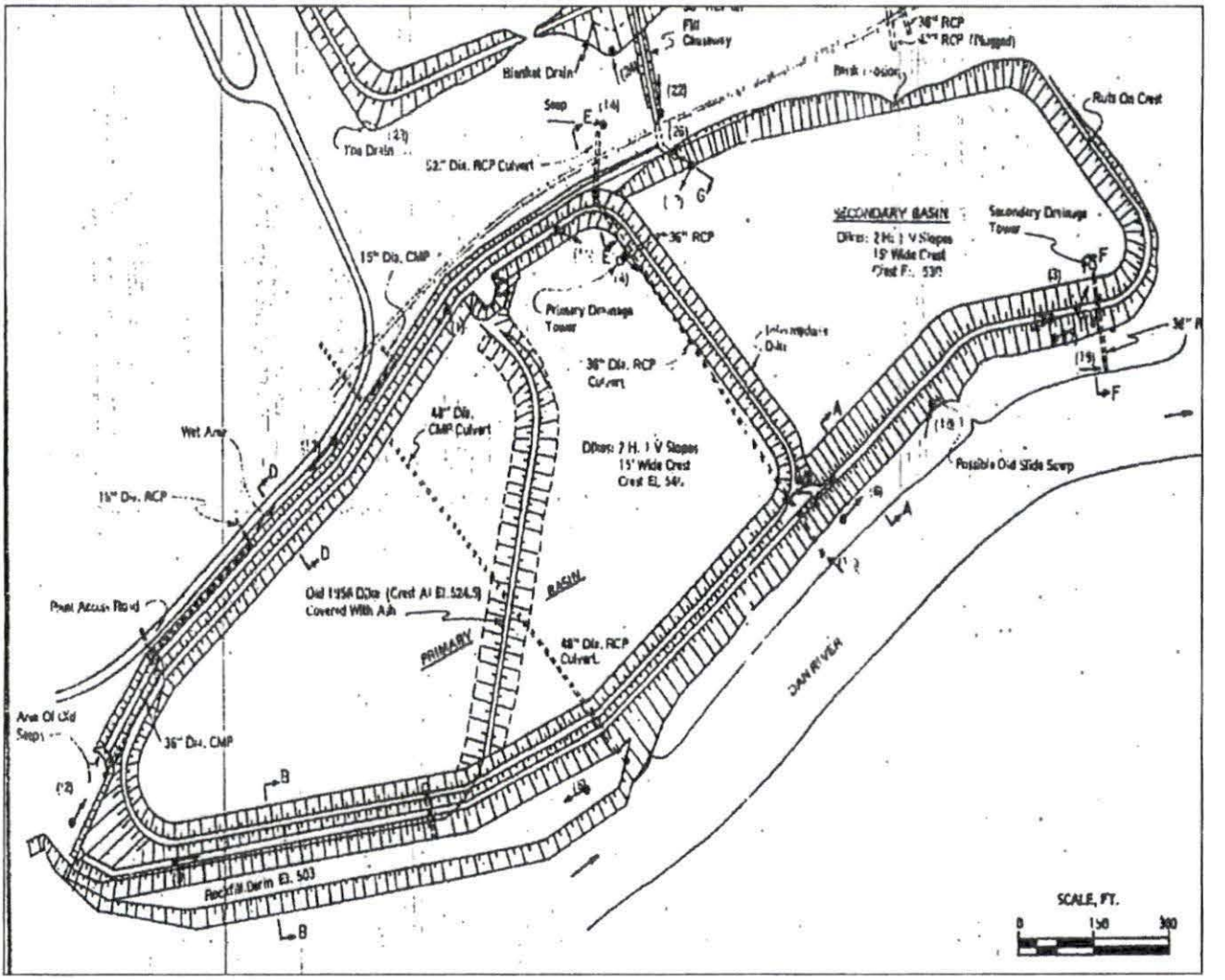
United States v. Duke Energy Business Services LLC, et al.

APPENDIX

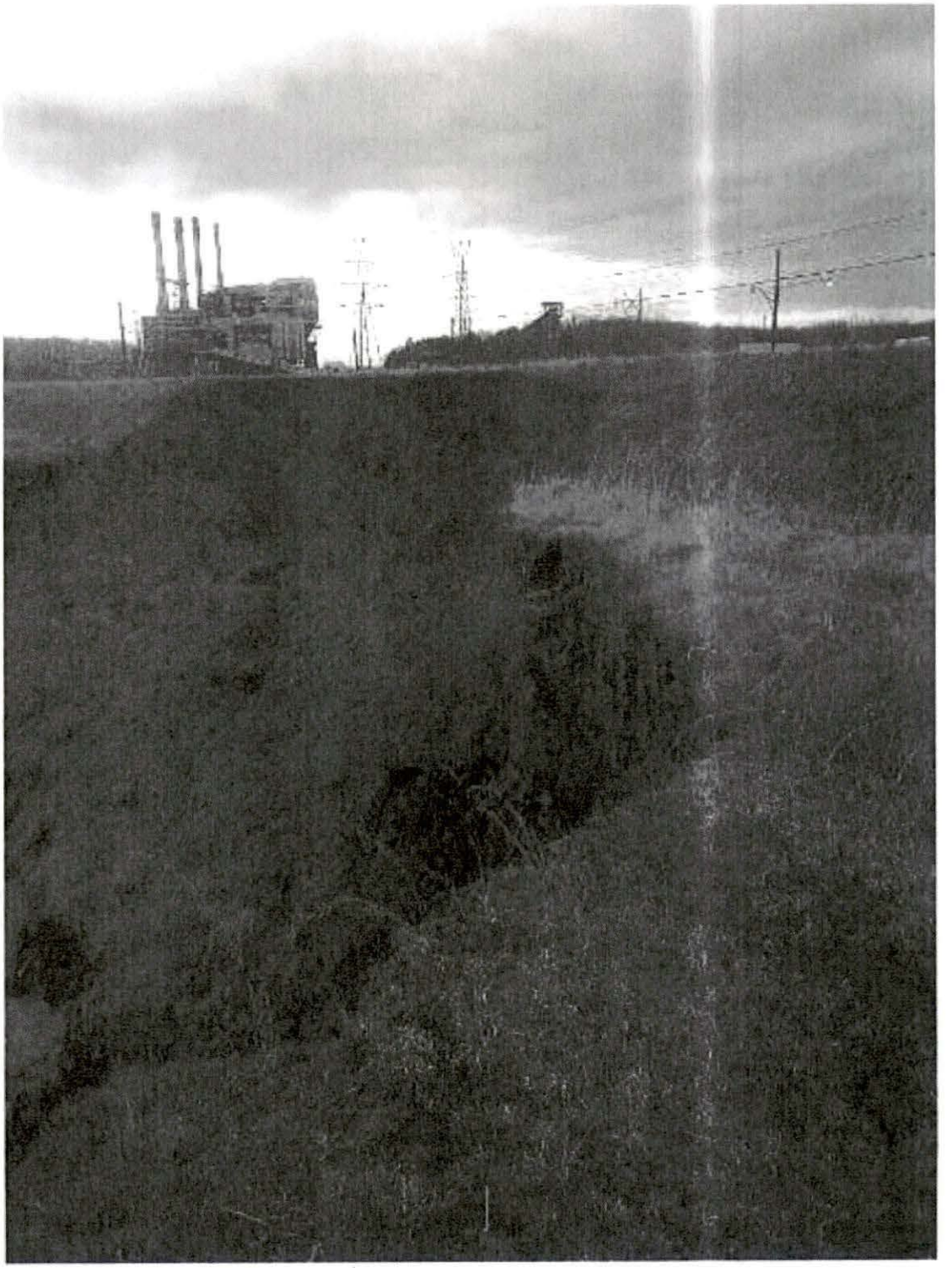
TO JOINT FACTUAL STATEMENT

February 20, 2015

Diagram 1. Engineering Firm #1, Report of Safety Inspection - Duke Power Dan River Steam Station Ash Dikes, at Fig. 4 (1981).

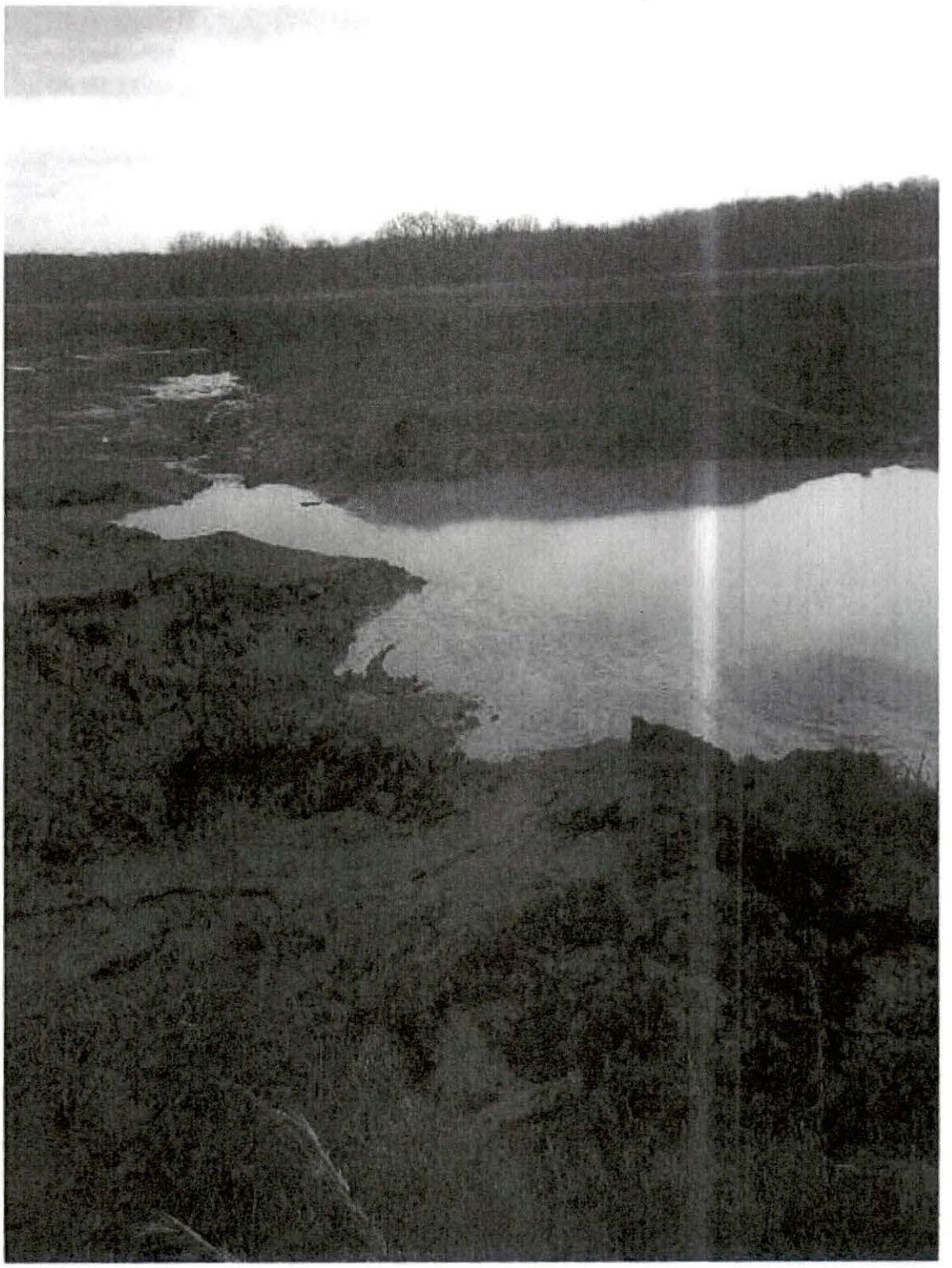


Photograph 1. Photograph of DAN RIVER coal ash basin during spill, attached to 2/2/2014, 3:49 p.m. e-mail from Duke Energy Business Services employee.



Photograph 2. Photograph of DAN RIVER coal ash basin during spill, attached to 2/2/2014, 3:49 p.m. e-mail from Duke Energy Business Services employee.

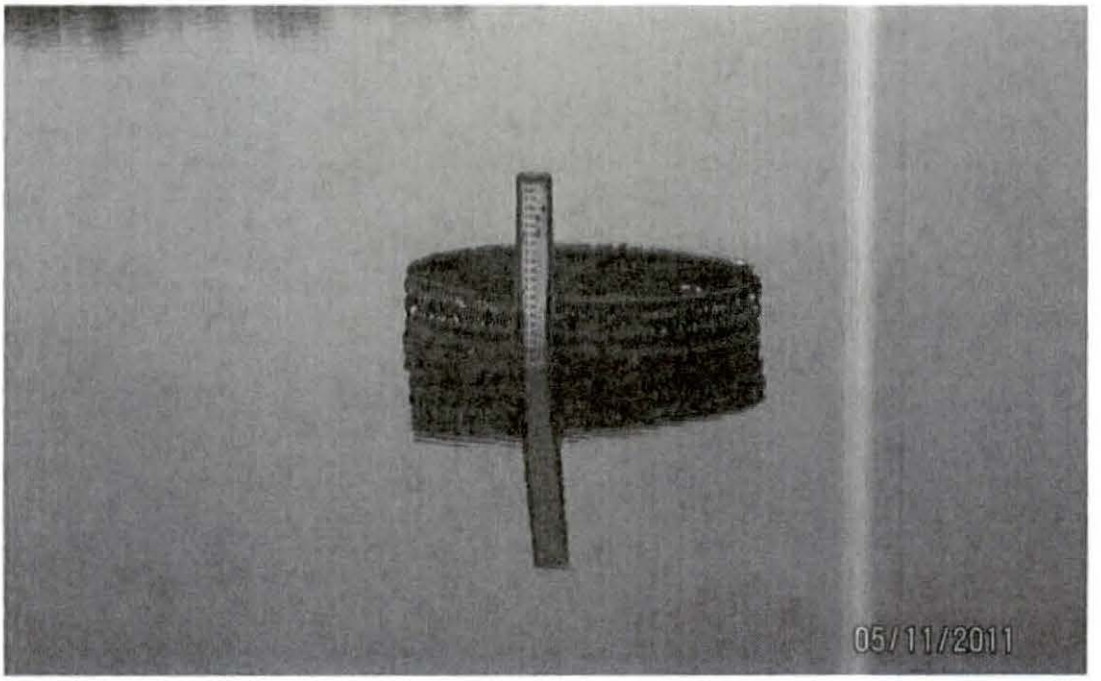
Photograph 3. Photograph of DAN RIVER coal ash basin during spill, attached to 2/2/2014, 3:49 p.m. e-mail from Duke Energy Business Services employee.



Photograph 4. Photograph of DAN RIVER coal ash basin during spill, attached to 2/2/2014, 3:49 p.m. e-mail from Duke Energy Business Services employee.

Photograph 5. Riser in CAPE FEAR 1978 coal ash basin from 2012 Five Year Independent Consultant Report.

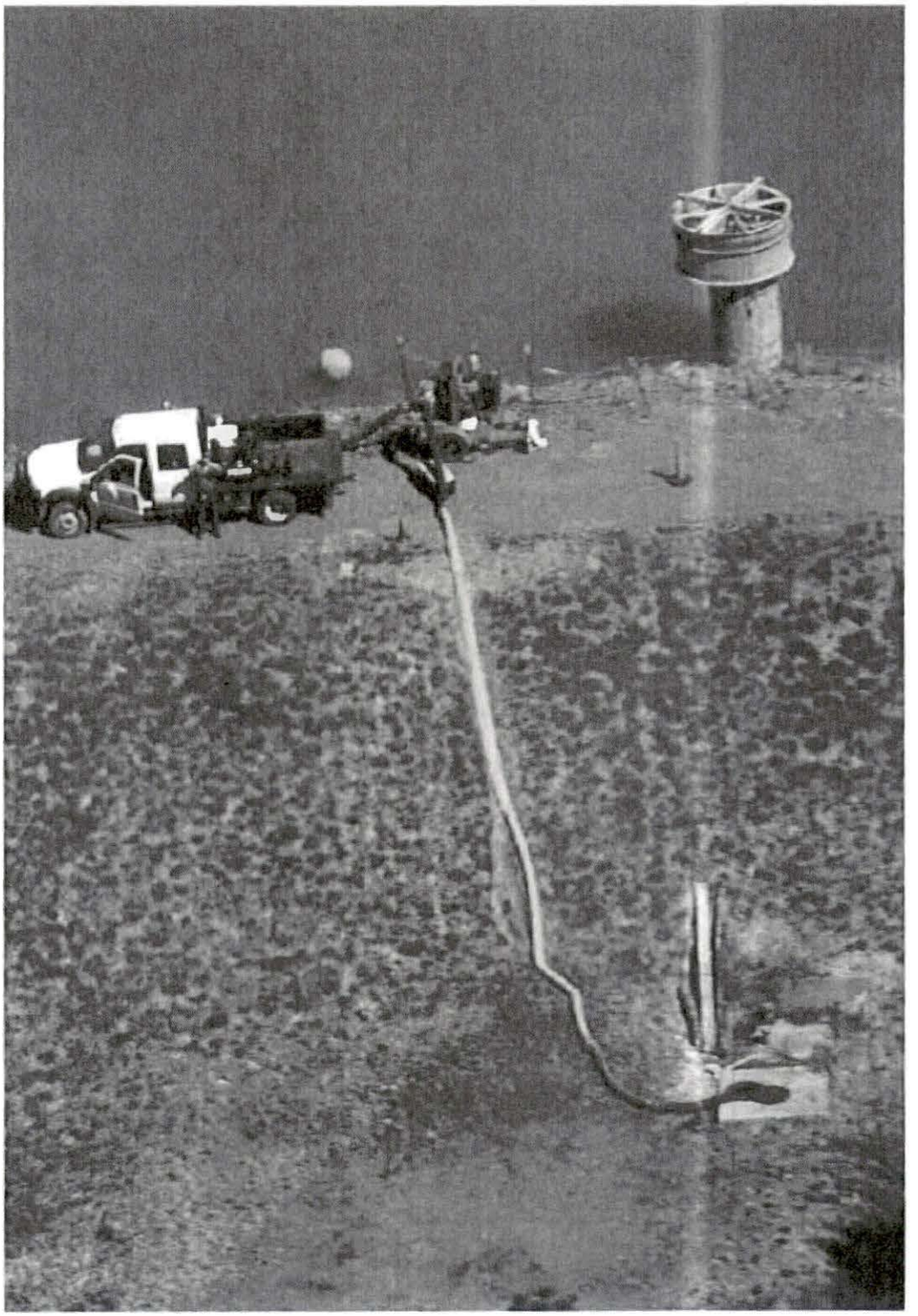
Photograph 6. Riser in CAPE FEAR 1978 coal ash basin from 2012 Five Year Independent Consultant Report.



Photograph 7. Riser in CAPE FEAR 1985 coal ash basin from 2012 Five Year Independent Consultant Report.

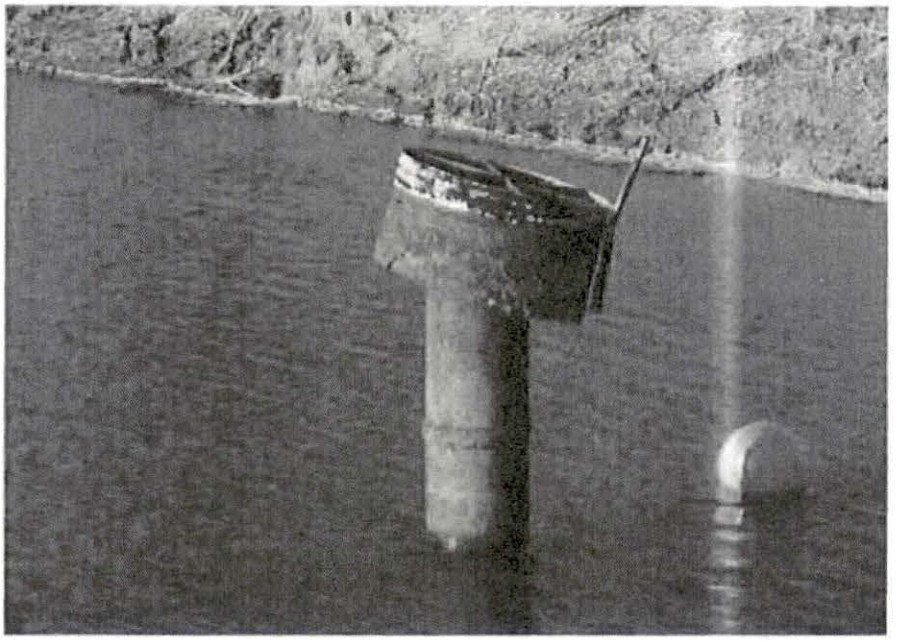
Photograph 8. 3/11/14 aerial photograph of CAPE FEAR 1978 coal ash basin with Godwin pump and truck.

Photograph 9. 3/11/14 aerial photograph of CAPE FEAR 1985 coal ash basin with Godwin pump and truck.



Photograph 10. 3/11/14 aerial photograph of CAPE FEAR 1985 coal ash basin with Godwin pump and truck.

Photograph 11. 3/19/14 photograph of CAPE FEAR 1978 coal ash basin riser, prior to repair work.

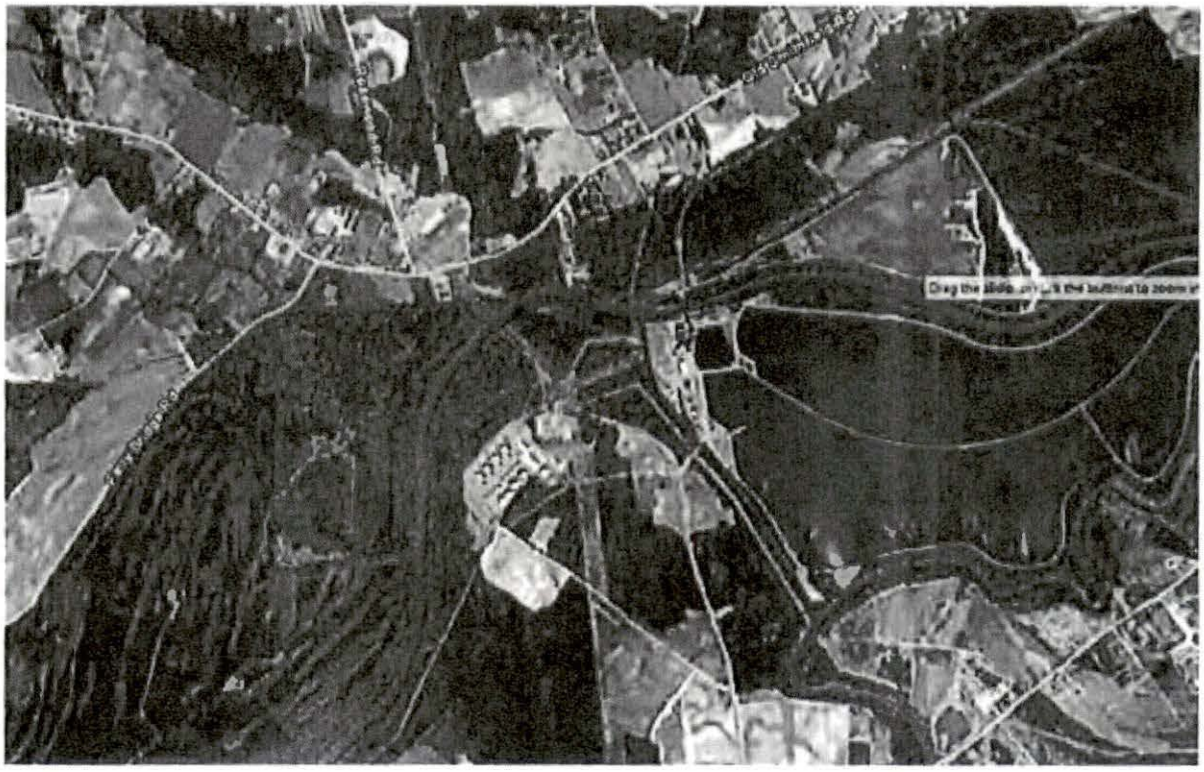


Photograph 12. 3/19/14 photograph of CAPE FEAR 1985 coal ash basin riser, prior to repair work.

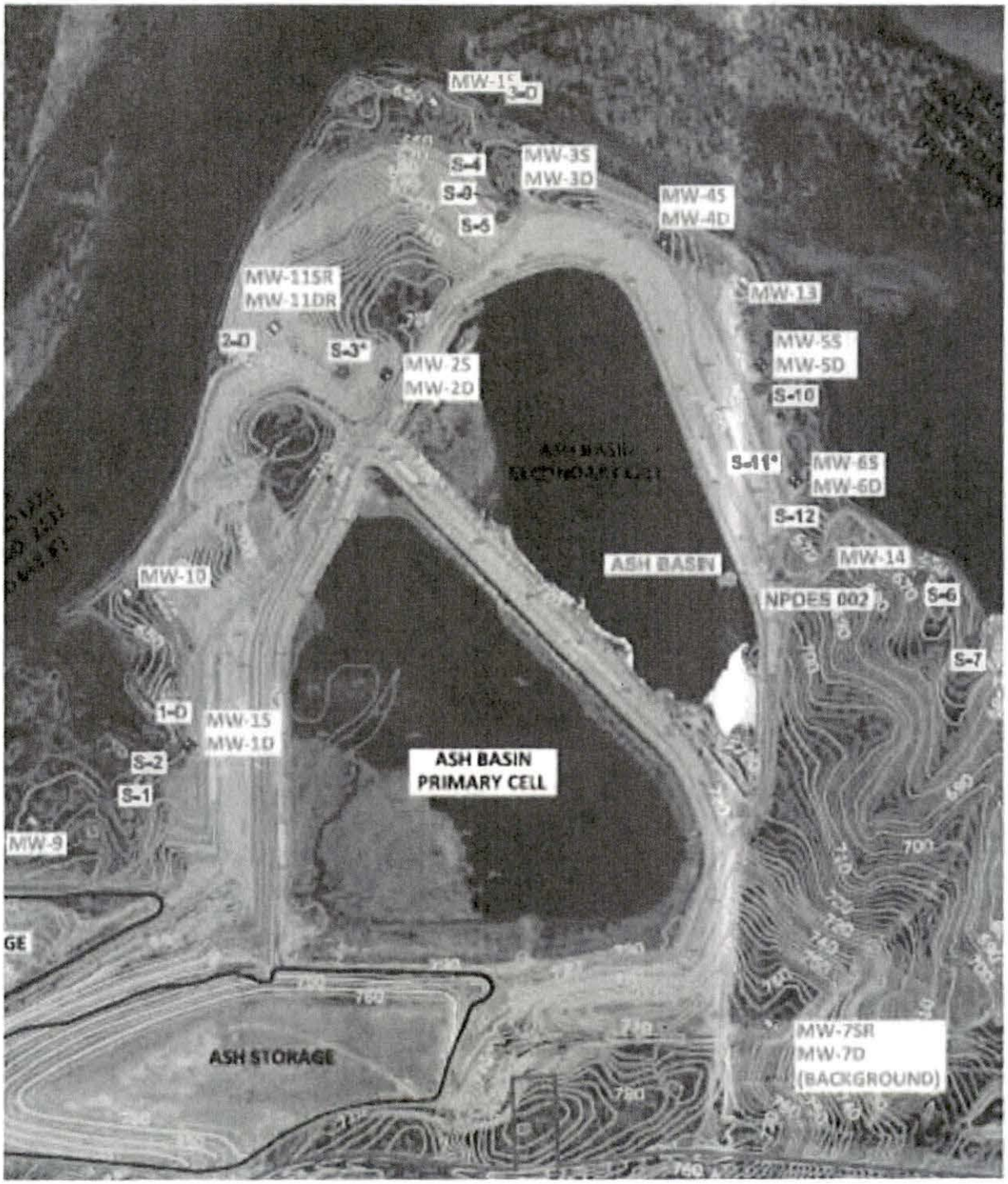
Photograph 13. 3/19/14 photograph of old grout on CAPE FEAR coal ash basin riser.

Photograph 14. 3/19/14 photograph of new grout on CAPE FEAR coal ash basin riser.

Photograph 15. Aerial Photograph of LEE from 2011 EPA Dam Safety Assessment report.



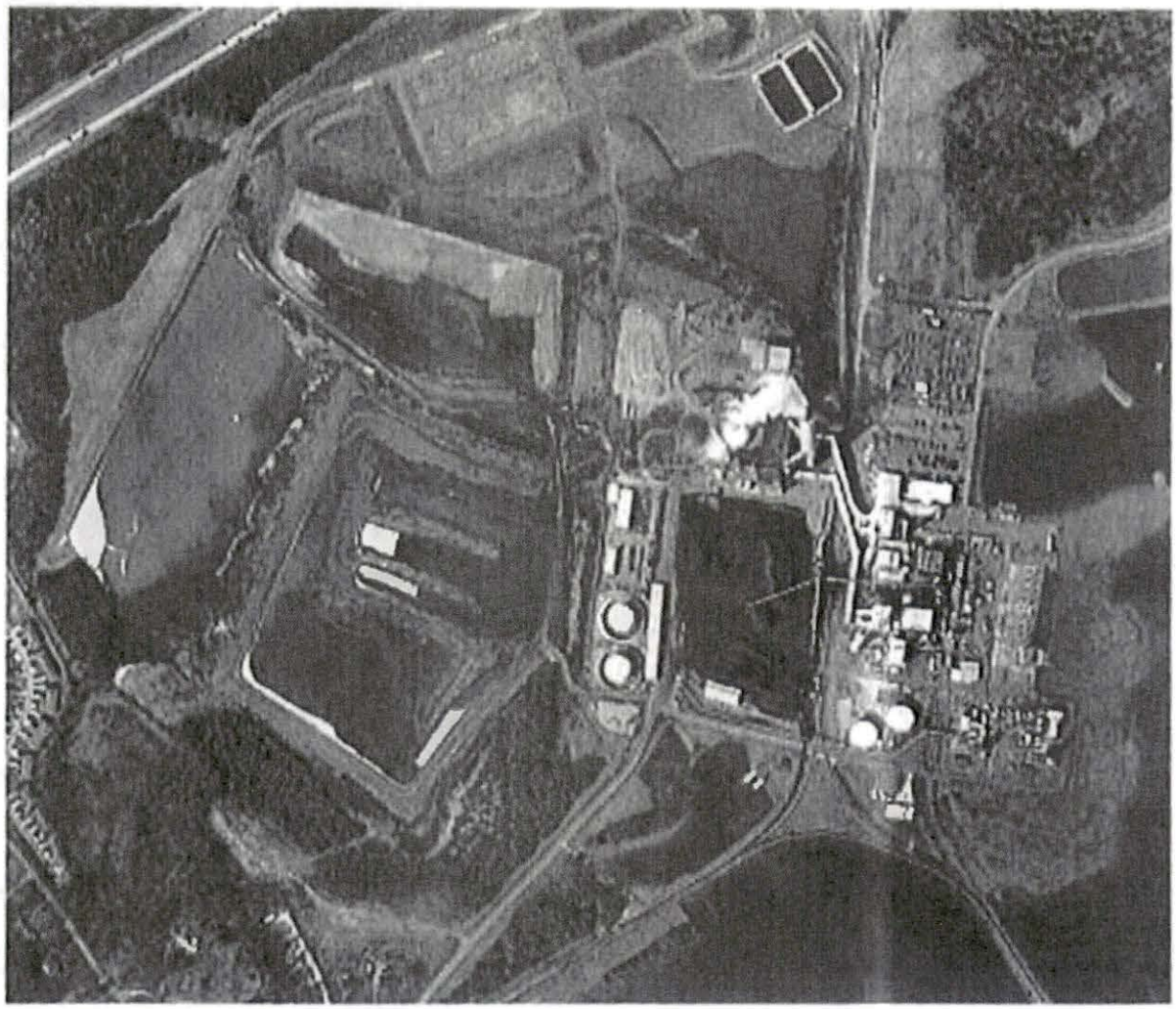
Photograph 16. Aerial photograph depicting location of RIVERBEND Seep 12.



Photograph 17. Photograph of RIVERBEND Seep 12.

Photograph 18. Photograph of RIVERBEND Seep 12.

Photograph 19. Aerial photograph of ASHEVILLE.



- June 21, 2010: EPA proposes to regulate the disposal of CCR from electric utilities for the first time.[5]
- 2010 - 2011: New compliance wells are approved and constructed at each of the coal ash facilities. Sutton Electric Plant originally had wells constructed as early as 1984 but adds additional wells in 2012.
- June 17, 2011: DENR issues a policy concerning compliance evaluation for long-term permitted facilities with no prior groundwater monitoring requirements.
- **February 2, 2014: Over 30,000 tons of coal ash is released into the Dan River due to failure of a storm water pipe under the retired ash pond.**

CAMA and CCR Compliance

- September 20, 2014: The Coal Ash Management Act ("CAMA 2014"), S729, SL 2014-122 is enacted. It requires the closure of all coal ash surface impoundments. Four sites are deemed high priority: Dan River, Riverbend, Asheville, and Sutton. For those sites, excavation and removal of coal ash is the specified method of closure.
- October 19, 2015: EPA Coal Combustion Residuals Rule (CCR Rule)[6] went into effect classifying coal combustion residuals as a non-hazardous solid waste under Subtitle D of the RCRA.
- December 31, 2015: Original deadline in CAMA 2014 for DEQ to issue final classifications of risk of each impoundment. Modified by CAMA 2016, H630, S.L. 2016-95 to provide that final classifications will be determined after the provision of permanent alternate water supplies, October 15, 2018.
- January 1, 2016: DEQ submits report on draft risk classifications to the General Assembly pursuant to CAMA 2014. The report qualifies that determinations of background concentrations for constituents of interest are still on-going at all facilities.[7]
- July 14, 2016: Drinking Water Protection/Coal Ash Cleanup Act ("CAMA 2016"), House Bill 630, S.L. 2016-95 is enacted. The law requires the provision of permanent alternate water supplies and requires DEQ to reclassify ponds according to new criteria related to dam safety and the provision of alternate water supplies. The law also deems three sites as intermediate risk: H.F. Lee, Cape Fear, and Weatherspoon.
- December 31, 2016: CAMA 2014 deadline for Duke to submit closure plans for high risk sites. CAMA 2016 deadline for Duke to submit plans for permanent water supplies.
- February 15, 2017: DEQ sends letter to Duke requesting additional information for the closure plans submitted for high priority sites.[8]

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[5] *Hazardous and Solid Waste Management System; Identification and Listing of Special Wastes; Disposal of Coal Combustion Residuals from Electric Utilities; Proposed* Rule, 40 CFR Parts 257, 261, 264 (June 21, 2010).

[6] 40 CFR Part 257 (signed December 19, 2014 and published in CFR April 17, 2015).

[7] Coal Combustion Residual Impoundment Risk Classifications, January 2016, NC DEQ.

[8] Letter from S. Jay Zimmerman, Director, Division of Water Resources, NC Dep't of Environmental Quality, to Paul Draovitch, Senior Vice President, Environmental Health and Safety, Duke Energy (Feb. 15, 2017) (on file with NC Dep't of Environmental Quality).

SUBCHAPTER 2L - GROUNDWATER CLASSIFICATION AND STANDARDS

SECTION .0100 - GENERAL CONSIDERATIONS

15A NCAC 02L .0101 AUTHORIZATION

(a) N.C. General Statute 143-214.1 directs that the Commission develop and adopt after proper study a series of classifications and standards which will be appropriate for the purpose of classifying each of the waters of the state in such a way as to promote the policy and purposes of the act. Pursuant to this statute, the rules in this Subchapter establish a series of classifications and water quality standards applicable to the groundwaters of the state.

(b) These rules are applicable to all activities or actions, intentional or accidental, which contribute to the degradation of groundwater quality, regardless of any permit issued by a governmental agency authorizing such action or activity except an innocent landowner who is a bona fide purchaser of property which contains a source of groundwater contamination, who purchased such property without knowledge or a reasonable basis for knowing that groundwater contamination had occurred, or a person whose interest or ownership in the property is based or derived from a security interest in the property, shall not be considered a responsible party.

History Note: *Authority G.S. 143-214.1; 143-214.2; 143-215.3(a)(1); 143B-282;*
Eff. June 10, 1979;
Amended Eff. August 1, 1989; July 1, 1988; September 1, 1984; December 30, 1983.

15A NCAC 02L .0102 DEFINITIONS

The definition of any word or phrase used in these Rules shall be the same as given in G.S. 143-212 and G.S. 143-213 except that the following words and phrases shall have the following meanings:

(1) "Bedrock" means any consolidated rock encountered in the place in which it was formed or deposited and which cannot be readily excavated without the use of explosives or power equipment.

(2) "Commission" means the Environmental Management Commission as organized under G.S. 143B.

(3) "Compliance boundary" means a boundary around a disposal system at and beyond which groundwater quality standards may not be exceeded and only applies to facilities which have received a permit issued under the authority of G.S. 143-215.1 or G.S. 130A.

(4) "Contaminant" means any substance occurring in groundwater in concentrations which exceed the groundwater quality standards specified in Rule .0202 of this Subchapter.

(5) "Corrective action plan" means a plan for eliminating sources of groundwater contamination or for achieving groundwater quality restoration or both.

(6) "Director" means Director of the Division of Environmental Management.

(7) "Division" means the Division of Environmental Management.

(8) "Exposure pathway" means a course taken by a contaminant by way of a transport medium after its release to the environment.

(9) "Free product" means a non-aqueous phase liquid which may be present within the saturated zone or in surface water.

(10) "Fresh groundwaters" means those groundwaters having a chloride concentration equal to or less than 250 milligrams per liter.

(11) "Groundwaters" means those waters occurring in the subsurface under saturated conditions.

(12) "Hazardous substance" means any substance as defined by Section 101(14) of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA).

(13) "Licensed geologist" means a person who has been duly licensed as a geologist in accordance with the requirements of G.S. 89E.

(14) "Natural remediation" means those natural processes acting to restore groundwater quality, including dilution, filtration, sorption, ion-exchange, chemical transformation and biodegradation.

(15) "Practical Quantitation Limit" means the lowest concentration of a given material that can be reliably achieved among laboratories within specified limits of precision and accuracy by a given analytical method during routine laboratory analysis.

(16) "Natural conditions" means the physical, biological, chemical and radiological conditions which occur naturally.

(17) "Potable waters" means those waters suitable for drinking by humans.

(18) "Professional Engineer" means a person who has been duly registered and licensed as a professional engineer in accordance with the requirements of G.S. 89C.

(19) "Receptor" means any human, plant, animal, or structure which is, or has the potential to be, adversely effected by the release or migration of contaminants. Any well constructed for the purpose of monitoring groundwater and contaminant concentrations shall not be considered a receptor.

(20) "Review boundary" means a boundary around a permitted disposal facility, midway between a waste boundary and a compliance boundary at which groundwater monitoring is required.

(21) "Saline groundwaters" means those groundwaters having a chloride concentration of more than 250 mg/l.

(22) "Saturated zone" means that part of the subsurface below the water table in which all the interconnected voids are filled with water under pressure at or greater than atmospheric. It does not include the capillary fringe.

(23) "Standards" means groundwater quality standards as specified in Rule .0202 of this Subchapter.

(24) "Suitable for drinking" means a quality of water which does not contain substances in concentrations which, either singularly or in combination if ingested into the human body, may cause death, disease, behavioral abnormalities, congenital defects, genetic mutations, or result in an incremental lifetime cancer risk in excess of 1x10-6, or render the water unacceptable due to aesthetic qualities, including taste, odor or appearance.

(25) "Time of travel" means the time required for contaminants in groundwater to move a unit distance.

(26) "Waste boundary" means the perimeter of the permitted waste disposal area.

(27) "Water table" means the surface of the saturated zone below which all interconnected voids are filled with water and at which the pressure is atmospheric.

History Note: *Authority G.S. 143-214.1; 143-215; 143B-282;*
Eff. June 10, 1979.
Amended Eff. October 1, 1993; August 1, 1989; July 1, 1988; March 1, 1985.

15A NCAC 02L .0103 POLICY

(a) The rules established in this Subchapter are intended to maintain and preserve the quality of the groundwaters, prevent and abate pollution and contamination of the waters of the state, protect public health, and permit management of the groundwaters for their best usage by the citizens of North Carolina. It is the policy of the Commission that the best usage of the groundwaters of the state is as a source of drinking water. These groundwaters generally are a potable source of drinking water without the necessity of significant treatment. It is the intent of these Rules to protect the overall high quality of North Carolina's groundwaters to the level established by the standards and to enhance and restore the quality of degraded groundwaters where feasible and necessary to protect human health and the environment, or to ensure their suitability as a future source of drinking water.

(b) It is the intention of the Commission to protect all groundwaters to a level of quality at least as high as that required under the standards established in Rule .0202 of this Subchapter. In keeping with the policy of the Commission to protect, maintain, and enhance groundwater quality within the State of North Carolina, the Commission will not approve any disposal system subject to the provisions of G.S. 143-215.1 which would result in:

(1) the significant degradation of groundwaters which have existing quality that is better than the assigned standard, unless such degradation is found to be in the best interests of the citizens of North Carolina based upon the projected economic benefits of the facility and a determination that public health will be protected, or

(2) a violation of a groundwater quality standard beyond a designated compliance boundary, or

(3) the impairment of existing groundwater uses or increased risk to the health or safety of the public due to the operation of a waste disposal system.

(c) Violations of standards resulting from groundwater withdrawals which are in compliance with water use permits issued pursuant to G.S. 143-215.15, shall not be subject to the corrective action requirements of Rule .0106 of this Subchapter.

(d) No person shall conduct or cause to be conducted, any activity which causes the concentration of any substance to exceed that specified in Rule .0202 of this Subchapter, except as authorized by the rules of this Subchapter.

(e) Work that is within the scope of the practice of geology and engineering, performed pursuant to the requirements of this Subchapter, which involves site assessment, the interpretation of subsurface geologic conditions, preparation of conceptual corrective action plans or any work requiring detailed technical knowledge of site conditions which is submitted to the Director, shall be performed by persons, firms or professional corporations who are duly licensed to offer geological or engineering services by the appropriate occupational licensing board or are exempted from such licensing by G.S. 89E-6.

Work which involves design of remedial systems or specialized construction techniques shall be performed by persons, firms or professional corporations who are duly licensed to offer engineering services. Corporations that are authorized by law to perform engineering or geological services and are exempt from the Professional Corporation Act, G.S. 55B, may perform these services.

History Note: *Authority G.S. 143-214; 143-214.1; 143-214.2; 143-215.3(e); 143-215.3(a)(1); 143B-282;*
Eff. June 10, 1979;
Amended Eff. August 1, 1989; July 1, 1988; September 1, 1984; December 30, 1983;
RRC Objection Eff. September 17, 1993, due to lack of necessity for Paragraph (e);
Amended Eff. November 4, 1993.

15A NCAC 02L .0104 RESTRICTED DESIGNATION (RS)

(a) The RS designation serves as a warning that groundwater so designated may not be suitable for use as a drinking water supply without treatment. The designation is temporary and will be removed by the Director upon a determination that the quality of the groundwater so designated has been restored to the level of the applicable standards or when the groundwaters have been reclassified by the Commission. The Director is authorized to designate GA or GSA groundwaters as RS under any of the following circumstances:

(1) Where, as a result of man's activities, groundwaters have been contaminated and the Director has approved a corrective action plan, or termination of corrective action, that will not result in the immediate restoration of such groundwaters to the standards established under this Subchapter.

(2) Where a statutory variance has been granted as provided in Rule .0113 of this Subchapter.

(b) Groundwaters occurring within an area defined by a compliance boundary in a waste disposal permit are deemed to be designated RS.

(c) The boundary of a designated RS area may be approximated in the absence of analytical data sufficient to define the dimension of the area. The boundary shall be located at least 250 feet away from the predicted edge of the contaminant plume, and shall include any areas into which the contamination is expected to migrate.

(d) In areas designated RS, the person responsible for groundwater contamination shall establish and implement a groundwater monitoring system sufficient to detect changes in groundwater quality within the RS designated area. Monitoring shall be quarterly for the first year and may be reduced to semi-annually thereafter until the applicable standards have been achieved. If during the monitoring period, contaminant concentrations increase, additional remedial action or monitoring pursuant to these Rules may be required.

(e) The applicant for an RS designation shall also provide written verification that all property owners within and adjacent to the proposed RS area have been notified of the requested RS designation.

(f) The Division shall provide public notice of the intent to designate any groundwater RS in accordance with the following requirements:

(1) Notice shall be published at least 30 days prior to any proposed final action in accordance with G.S. 143-215.4. In addition, notice shall be provided to all property owners identified pursuant to Paragraph (e) of this Rule and to the local County Health Director and the chief administrative officer of the political jurisdiction(s) in which the contamination occurs.

(2) The notice shall contain the following information:

(A) name, address, and phone number of the agency issuing the public notice;

(B) the location and extent of the designated area;

(C) the county title number, county tax identification number, or the property tax book and page identifiers;

(D) a brief description of the action or actions which resulted in the degradation of groundwater in the area;

(E) actions or intended actions taken to restore groundwater quality;

(F) the significance of the RS designation;

(G) conditions applicable to removal of the RS designation;

(H) address and phone number of a Division contact from whom interested parties may obtain further information.

(3) The Director shall consider all requests for a public hearing, and if he determines that there is significant public interest he shall issue public notice and hold a public hearing in accordance with G.S 143-215.4(b) and Rule .0113(e) of this Section.

(4) These requirements shall not apply to groundwaters defined in Paragraph (b) of this Rule.

History Note: *Authority G.S. 143-214.1; 143-215.3(a)(1); 143B-282(2);*
Eff. June 10, 1979;
Amended Eff. October 1, 1993; December 1, 1989; August 1, 1989; December 30, 1983.

15A NCAC 02L .0105 ADOPTION BY REFERENCE

History Note: *Authority G.S. 143-214.1;*
Eff. December 30, 1983;
Repealed Eff. August 1, 1989.

15A NCAC 02L .0106 CORRECTIVE ACTION

(a) Where groundwater quality has been degraded, the goal of any required corrective action shall be restoration to the level of the standards, or as closely thereto as is economically and technologically feasible as determined by the Department in accordance with this Rule. In all cases involving requests to the Secretary, as defined in 15A NCAC 02C .0102, for approval of corrective action plans, or termination of corrective action, the responsibility for providing all information required by this Rule lies with the person(s) making the request.

(b) Any person conducting or controlling an activity that results in the discharge of a waste or hazardous substance or oil to the groundwaters of the State, or in proximity thereto, shall take action upon discovery to terminate and control the discharge, mitigate any hazards resulting from exposure to the pollutants and notify the Department, as defined in 15A NCAC 02C .0102, of the discharge.

(c) Any person conducting or controlling an activity that has not been permitted by the Department and that results in an increase in the concentration of a substance in excess of the standard, other than agricultural operations, shall:

(1) within 24 hours of discovery of the violation, notify the Department of the activity that has resulted in the increase and the contaminant concentration levels;

(2) respond in accordance with Paragraph (f) of this Rule;

(3) submit a report to the Secretary assessing the cause, significance, and extent of the violation; and

(4) implement an approved corrective action plan for restoration of groundwater quality in accordance with a schedule established by the Secretary. In establishing a schedule, the Secretary shall consider a schedule proposed by the person submitting the plan. A report shall be made to the Health Director of the county or counties in which the contamination occurs in accordance with the requirements of Rule .0114(a) in this Section.

Any activity not permitted pursuant to G.S. 143-215.1 or G.S. 130A-294 shall, for the purpose of this Rule, be deemed not permitted by the Department and subject to the provisions of this Paragraph.

(d) Any person conducting or controlling an activity that is conducted under the authority of a permit initially issued by the Department on or after December 30, 1983 pursuant to G.S. 143-215.1 or G.S. 130A-294 and that results in an increase in concentration of a substance in excess of the standards:

(1) at or beyond a review boundary: the person shall demonstrate, through predictive calculations or modeling, that natural site conditions, facility design and operational controls will prevent a violation of standards at the compliance boundary. Alternately, the person may submit a plan for alteration of existing site conditions, facility design, or operational controls that will prevent a violation at the compliance boundary, and implement that plan upon its approval by the Secretary.

(2) at or beyond a compliance boundary: the person shall respond in accordance with Paragraph (f) of this Rule, assess the cause, significance and extent of the violation of standards and submit the results of the investigation, and a plan and proposed schedule for corrective action to the Secretary. The permittee shall implement the plan as approved by and in accordance with a schedule established by the Secretary. In

establishing a schedule the Secretary shall consider any schedule proposed by the permittee, the scope of the project, the extent of contamination, and the corrective action being proposed.

(e) Any person conducting or controlling an activity that is conducted under the authority of a permit initially issued by the Department prior to December 30, 1983 pursuant to G.S. 143-215.1 or G.S. 130A-294, and that results in an increase in concentration of a substance in excess of the standards at or beyond the compliance boundary specified in the permit, shall:

(1) within 24 hours of discovery of the violation, notify the Department of the activity that has resulted in the increase and the contaminant concentration levels;
(2) respond in accordance with Paragraph (f) of this Rule;
(3) submit a report to the Secretary assessing the cause, significance and extent of the violation; and
(4) implement an approved corrective action plan for restoration of groundwater quality at or beyond the compliance boundary, in accordance with a schedule established by the Secretary. In establishing a schedule the Secretary shall consider any schedule proposed by the person submitting the plan. A report shall be made to the Health Director of the county or counties where the contamination occurs in accordance with the requirements of Rule .0114(a) in this Section.

(f) Initial response required to be conducted prior to or concurrent with the assessment required in Paragraphs (c), (d), or (e) of this Rule shall include:

(1) Prevention of fire, explosion, or the spread of noxious fumes;
(2) Abatement, containment, or control of the migration of contaminants;
(3) Removal, treatment, or control of any primary pollution source such as buried waste, waste stockpiles, or surficial accumulations of free products;
(4) Removal, treatment, or control of secondary pollution sources that would be potential continuing sources of pollutants to the groundwaters, such as contaminated soils and non-aqueous phase liquids. Contaminated soils that threaten the quality of groundwaters shall be treated, contained, or disposed of in accordance with rules in this Chapter and in 15A NCAC 13 applicable to such activities. The treatment or disposal of contaminated soils shall be conducted in a manner that will not result in a violation of standards or North Carolina Hazardous Waste Management rules.

(g) The site assessment conducted pursuant to the requirements of Paragraphs (c), (d), or (e) of this Rule, shall include:

(1) The source and cause of contamination;
(2) Any imminent hazards to public health and safety, as defined in G.S. 130A-2, and any actions taken to mitigate them in accordance with Paragraph (f) of this Rule;
(3) All receptors and significant exposure pathways;
(4) The horizontal and vertical extent of soil and groundwater contamination and all significant factors affecting contaminant transport; and
(5) Geological and hydrogeological features influencing the movement, chemical, and physical character of the contaminants.

Reports of site assessments shall be submitted to the Department as soon as practicable or in accordance with a schedule established by the Secretary. In establishing a schedule the Secretary shall consider a proposal by the person submitting the report.

(h) Corrective action plans for restoration of groundwater quality, submitted pursuant to Paragraphs (c), (d), and (e) of this Rule shall include:

(1) A description of the proposed corrective action and reasons for its selection;
(2) Specific plans, including engineering details where applicable, for restoring groundwater quality;
(3) A schedule for the implementation and operation of the proposed plan; and
(4) A monitoring plan for evaluating the effectiveness of the proposed corrective action and the movement of the contaminant plume.

(i) In the evaluation of corrective action plans, the Secretary shall consider the extent of any violations, the extent of any threat to human health or safety, the extent of damage or potential adverse impact to the environment, technology available to accomplish restoration, the potential for degradation of the contaminants in the environment, the time and costs estimated to achieve groundwater quality restoration, and the public and economic benefits to be derived from groundwater quality restoration.

(j) A corrective action plan prepared pursuant to Paragraphs (c), (d), or (e) of this Rule shall be implemented using a remedial technology demonstrated to provide the most effective means, taking into consideration geological and hydrogeological conditions at the contaminated site, for restoration of groundwater quality to the level of the standards. Corrective action plans prepared pursuant to Paragraphs (c) or (e) of this Rule may request an exception as provided in Paragraphs (k), (l), (m), (r), and (s) of this Rule.

(k) Any person required to implement an approved corrective action plan for a site subject to Paragraphs (c) or (e) of this Rule may request that the Secretary approve such a plan without requiring groundwater remediation to the standards. A request submitted to the Secretary under this Paragraph shall include a description of site-specific conditions, including information on the availability of public water supplies for the affected area; the technical basis for the request; and any other information requested by the Secretary to evaluate the request in accordance with Subparagraphs (1) through (7) of this Paragraph. The person making the request shall demonstrate:

(1) that all sources of contamination and free product have been removed or controlled pursuant to Paragraph (f) of this Rule;

(2) that the time and direction of contaminant travel can be predicted with reasonable certainty;

(3) that contaminants have not and will not migrate onto adjacent properties, or that:

(A) such properties are served by an existing public water supply system dependent on surface waters or hydraulically isolated groundwater; or

(B) the owners of such properties have consented in writing to the request;

(4) that the standards specified in Rule .0202 of this Subchapter will be met at a location no closer than one year time of travel upgradient of an existing or foreseeable receptor, based on travel time and the natural attenuation capacity of subsurface materials or on a physical barrier to groundwater migration that exists or will be installed by the person making the request;

(5) that, if the contaminant plume is expected to intercept surface waters, the groundwater discharge will not possess contaminant concentrations that would result in violations of standards for surface waters contained in 15A NCAC 02B .0200;

(6) that public notice of the request has been provided in accordance with Rule .0114(b) of this Section; and

(7) that the proposed corrective action plan would be consistent with all other environmental laws.

(l) Any person required to implement an approved corrective action plan for a site subject to Paragraphs (c) or (e) of this Rule may request that the Secretary approve such a plan based upon natural processes of degradation and attenuation of contaminants. A request submitted to the Secretary under this Paragraph shall include a description of site-specific conditions, including written documentation of projected groundwater use in the contaminated area based on current state or local government planning efforts; the technical basis for the request; and any other information requested by the Secretary to evaluate the request in accordance with Subparagraphs (1) through (10) of this Paragraph. The person making the request shall demonstrate:

(1) that all sources of contamination and free product have been removed or controlled pursuant to Paragraph (f) of this Rule;

(2) that the contaminant has the capacity to degrade or attenuate under the site-specific conditions;

(3) that the time and direction of contaminant travel can be predicted based on subsurface conditions and the contaminant's physical and chemical properties;

(4) that contaminant migration will not result in any violation of applicable groundwater standards at any existing or foreseeable receptor;

(5) that contaminants have not and will not migrate onto adjacent properties, or that:

(A) such properties are served by an existing public water supply system dependent on surface waters or hydraulically isolated groundwater; or

(B) the owners of such properties have consented in writing to the request;

(6) that, if the contaminant plume is expected to intercept surface waters, the groundwater discharge will not possess contaminant concentrations that would result in violations of standards for surface waters contained in 15A NCAC 02B .0200;

(7) that the person making the request will put in place a groundwater monitoring program that, based on subsurface conditions and the physical and chemical properties of the contaminant, will accurately track the degradation and attenuation of contaminants and contaminant by-products within and down gradient of the plume and to detect contaminants and contaminant by-products prior to their reaching any existing or foreseeable receptor at least one year's time of travel upgradient of the receptor and no greater than the distance the groundwater at the contaminated site is predicted to travel in five years;

(8) that all necessary access agreements needed to monitor groundwater quality pursuant to Subparagraph (7) of this Paragraph have been or can be obtained;

(9) that public notice of the request has been provided in accordance with Rule .0114(b) of this Section; and

(10) that the proposed corrective action plan would be consistent with all other environmental laws.

(m) The Department or any person required to implement an approved corrective action plan for a site subject to Paragraphs (c) or (e) of this Rule may request that the Secretary approve termination of corrective action.

(1) A request submitted to the Secretary under this Paragraph shall include:
  (A) a discussion of the duration of the corrective action, the total project cost, projected annual cost for continuance and evaluation of the success of the corrective action;
  (B) an evaluation of alternate treatment technologies that could result in further reduction of contaminant levels, projected capital, and annual operating costs for each technology; and
  (C) the effects, including health and safety impacts, on groundwater users if contaminant levels remain at levels existing at the time corrective action is terminated.

(2) In addition, the person making the request shall demonstrate:
  (A) that continuation of corrective action would not result in a significant reduction in the concentration of contaminants. This demonstration shall show the duration and degree of success of existing remedial efforts to attain standards. For the purpose of this Part, a "significant reduction" is demonstrated by showing that the asymptotic slope of the contaminants curve of decontamination is less than a ratio of 1:40 over a term of one year based on quarterly sampling;
  (B) that contaminants have not and will not migrate onto adjacent properties, or that:
    (i) such properties are served by an existing public water supply system dependent on surface waters or hydraulically isolated groundwater; or
    (ii) the owners of such properties have consented in writing to the request;
  (C) that, if the contaminant plumes are expected to intercept surface waters, the groundwater discharge will not possess contaminant concentrations that would result in violations of standards for surface waters contained in 15A NCAC 02B .0200;
  (D) that public notice of the request has been provided in accordance with Rule .0114(b) of this Section; and
  (E) that the proposed termination would be consistent with all other environmental laws.

(3) The Secretary shall not authorize termination of corrective action for any area that, at the time the request is made, has been identified by a state or local groundwater use planning process for resource development.

(4) The Secretary may authorize the termination of corrective action, or amend the corrective action plan after considering all the information in the request. In making the authorization, the Secretary shall consider health and safety impacts on all existing and foreseeable receptors and the impacts the contaminated plume may have if it reaches them. Upon termination of corrective action, the Secretary shall require implementation of a groundwater monitoring program that, based on subsurface conditions and the physical and chemical properties of the contaminants, will accurately track the degradation and attenuation of contaminants at a location of no less than one year's predicted time of travel upgradient of any existing or foreseeable receptor. The monitoring program shall remain in effect until there is sufficient evidence that the contaminant concentrations have been reduced to the level of the standards. For the purpose of this Part, "sufficient evidence" means that sampling and analyses demonstrate that contaminant concentrations have been reduced to the level of the standards on multiple sampling events.

(n) Upon a determination by the Secretary that continued corrective action would result in no significant reduction in contaminant concentrations, and the contaminated groundwaters can be rendered potable by treatment using technologies that are in use in other applications and shown to be effective for removal of contaminants, the Secretary may designate the remaining area of degraded groundwater RS. Where the remaining degraded groundwaters cannot be made potable by such treatment, the Secretary may consider a request for reclassification of the groundwater to a GC classification as outlined in Rule .0201 of this Subchapter.

(o) If at any time the Secretary determines that a new technology is available that would remediate the contaminated groundwater to the standards specified in Rule .0202 of this Subchapter, the Secretary may require the responsible party to evaluate the economic and technological feasibility of implementing the new technology in an active groundwater corrective action plan in accordance with a schedule established by the Secretary. The Secretary's determination to utilize new technology at any site or for any particular constituent shall include a consideration of the factors in Paragraph (h) of this Rule.

(p) Where standards are exceeded as a result of the application of pesticides or other agricultural chemicals, the Secretary shall request the Pesticide Board or the Department of Agriculture and Consumer Services to assist the Department in determining the cause of the violation. If the violation is determined to have resulted from the use of pesticides, the Secretary shall request the Pesticide Board to take appropriate regulatory action to control the use of the chemical or chemicals responsible for, or contributing to, such violations, or to discontinue their use.

(q) The approval pursuant to this Rule of any corrective action plan, or modification or termination thereof, that permits the migration of a contaminant onto adjacent property, shall not affect any private right of action by any party that may be affected by that contamination.

(r) If a discharge or release is not governed by the rules in Section .0400 of this Subchapter and the increase in the concentration of a substance in excess of the standard resulted in whole or in part from a release from a commercial or noncommercial underground storage tank as defined in G.S. 143-215.94A, any person required to implement an approved corrective action plan pursuant to this Rule and seeking reimbursement for the Commercial or Noncommercial Leaking Petroleum Underground Storage Tank Cleanup Funds shall implement a corrective action plan meeting the requirements of Paragraph (k) or (l) of this Rule unless the person demonstrates to the Secretary that:

(1) contamination resulting from the discharge cannot qualify for approval of a plan based on the requirements of the Paragraphs; or

(2) the cost of making such a demonstration would exceed the cost of implementing a corrective action plan submitted pursuant to Paragraph (c) of this Rule.

(s) If a discharge or release is not governed by the rules in Section .0400 of this Subchapter and the increase in the concentration of a substance in excess of the standard resulted in whole or in part from a release from a commercial or noncommercial underground storage tank as defined in G.S. 143-215.94A, the Secretary may require any person implementing or operating a previously approved corrective action plan pursuant to this Rule to:

(1) develop and implement a corrective action plan meeting the requirements of Paragraphs (k) and (l) of this Rule; or

(2) seek discontinuance of corrective action pursuant to Paragraph (m) of this Rule.

History Note: *Authority G.S. 143-215.1; 143-215.3; 143-215.94A; 143-215.94T; 143-215.94V; 143B-282; 1995 (Reg. Sess. 1996) c. 648, s. 1;*
Eff. August 1, 1989;
Amended Eff. October 1, 1993; September 1, 1992;
Temporary Amendment Eff. January 2, 1998; January 2, 1996;
Amended Eff. July 1, 2016; October 29, 1998.

15A NCAC 02L .0107 COMPLIANCE BOUNDARY

(a) For disposal systems individually permitted prior to December 30, 1983, the compliance boundary is established at a horizontal distance of 500 feet from the waste boundary or at the property boundary, whichever is closer to the source.

(b) For disposal systems individually permitted on or after December 30, 1983, a compliance boundary shall be established 250 feet from the waste boundary, or 50 feet within the property boundary, whichever point is closer to the source.

(c) The boundary shall be established by the Director, or his designee at the time of permit issuance. Any sale or transfer of property which affects a compliance boundary shall be reported immediately to the Director, or his designee. For disposal systems which are not governed by Paragraphs (e) or (f) of this Rule, the compliance boundary affected by the sale or transfer of property will be re-established consistent with Paragraphs (a) or (b) of this Rule, whichever is applicable.

(d) Except as provided in Paragraph (g) of this Rule, no water supply wells shall be constructed or operated within the compliance boundary of a disposal system individually permitted or repermitted after January 1, 1993.

(e) Except as provided in Paragraph (g) of this Rule, a permittee shall not transfer land within an established compliance boundary of a disposal system permitted or repermitted after January 1, 1993 unless:

(1) the land transferred is serviced by a community water system as defined in 15A NCAC 18C, the source of which is located outside the compliance boundary; and

(2) the deed transferring the property:

(A) contains notice of the permit, including the permit number, a description of the type of permit, and the name, address and telephone number of the permitting agency; and

(B) contains a restrictive covenant running with the land and in favor of the permittee and the State, as a third party beneficiary, which prohibits the construction and operation of water supply wells within the compliance boundary; and

(C) contains a restrictive covenant running with the land and in favor of the permittee and the State, as a third party beneficiary, which grants the right to the permittee and the State to enter on such property within the compliance boundary for groundwater monitoring and remediation purposes.

(f) Except as provided in Paragraph (g) of this Rule, if at the time a permit is issued or reissued after January 1, 1993, the permittee is not the owner of the land within the compliance boundary, it shall be a condition of the permit issued or renewed

that the landowner of the land within the compliance boundary, if other than the permittee, execute and file in the Register of Deeds in the county in which the land is located, an easement running with the land which:

(1) contains:

(A) either a notice of the permit, including the permit number, a description of the type of permit, and the name, address and telephone number of the permitting agency; or

(B) a reference to a notice of the permit with book and page number of its recordation if such notice is required to be filed by statute;

(2) prohibits the construction and operation of water supply wells within the compliance boundary; and

(3) reserves the right to the permittee and the State to enter on such property within the compliance boundary for groundwater monitoring and remediation purposes. The easement may be terminated by the Director when its purpose has been fulfilled or the need for the easement no longer exists. Under those conditions the Director shall, upon request by the landowner, file a document terminating the easement with the appropriate Register of Deeds.

(g) The requirements of Paragraphs (d), (e) and (f) of this Rule are not applicable to ground adsorption treatment systems serving four or fewer single family dwellings or multiunit dwellings of four or fewer units.

(h) The boundary shall form a vertical plane extending from the water table to the maximum depth of saturation.

(i) For ground absorption sewage treatment and disposal systems which are permitted under 15A NCAC 18A .1900, the compliance boundary shall be established at the property boundary.

(j) Penalties authorized pursuant to G.S. 143-215.6A(a)(1) will not be assessed for violations of standards within a compliance boundary unless the violations are the result of violations of permit conditions or negligence in the management of the facility.

(k) The Director shall require:

(1) that permits for all activities governed by G.S. 143-215.1 be written to protect the quality of groundwater established by applicable standards, at the compliance boundary;

(2) that necessary groundwater quality monitoring shall be conducted within the compliance boundary; and

(3) that a violation of standards within the compliance boundary resulting from activities conducted by the permitted facility be remedied through clean-up, recovery, containment, or other response when any of the following conditions occur:

(A) a violation of any standard in adjoining classified groundwaters occurs or can be reasonably predicted to occur considering hydrogeologic conditions, modeling, or other available evidence;

(B) an imminent hazard or threat to the public health or safety exists; or

(C) a violation of any standard in groundwater occurring in the bedrock other than limestones found in the Coastal Plain sediments, unless it can be demonstrated that the violation will not adversely affect, or have the potential to adversely affect a water supply well.

History Note: *Authority G.S. 143-215.1(b); 143-215.3(a)(1); 143B-282;*
Eff. August 1, 1989;
Amended Eff. October 1, 1993; November 2, 1992.

15A NCAC 02L .0108 REVIEW BOUNDARY

A review boundary is established around any disposal system midway between the compliance boundary and the waste boundary. When the concentration of any substance equals or exceeds the standard at the review boundary as determined by monitoring, the permittee shall take action in accordance with the provisions of Rule .0106(c)(2)(A) of this Subchapter.

History Note: *Authority G.S. 143-215.1(b); 143-215.3(a)(1); 143B-282;*
Eff. August 1, 1989.

15A NCAC 02L .0109 DELEGATION

(a) The Director is delegated the authority to enter into consent special orders under G.S. 143-215.2 for violations of the standards except when a public meeting is required as provided in 15A NCAC 2H .1203.

(b) The Director is delegated the authority to prepare a proposed special order to be issued by the Commission without the consent of the person affected and to notify the affected person of that proposed order and of the procedure set out in G.S. 150B-23 to contest the proposed special order.
(c) The Director, or his designee shall give public notice of proposed consent special orders as specified in 15A NCAC 2H .1203.

History Note: *Authority G.S. 143-215.2; 143-215.3(a)(1); 143-215.3(a)(4);*
Eff. August 1, 1989;
Amended Eff. October 1, 1993; October 1, 1990.

15A NCAC 02L .0110 MONITORING
(a) Except where exempted by statute or this Subchapter, any person who causes, permits or has control over any discharge of waste, or groundwater cleanup program, shall install and implement a monitoring system, at such locations, and in such detail, as the Director, or his designee may require to evaluate the effects of the discharge upon the waters of the state, including the effect of any actions taken to restore groundwater quality, as well as the efficiency of any treatment facility. The monitoring plan shall be prepared under the responsible charge of a Professional Engineer or Licensed Geologist and bear the seal of the same.
(b) Monitoring systems shall be constructed in a manner that will not result in the contamination of adjacent groundwaters of a higher quality.
(c) Monitoring shall be conducted and results reported in a manner and at a frequency specified by the Director, or his designee.

History Note: *Authority G.S. 143-215.1(b); 143-215.3(a)(1); 143-215.65; 143-215.66; 143B-282;*
Eff. August 1, 1989;
Amended Eff. October 1, 1993.

15A NCAC 02L .0111 REPORTS
(a) Any person subject to the requirements for corrective action specified in Rule .0106 of this Section shall submit to the Director, in such detail as the Director may require, a written report that describes:
(1) the results of the investigation specified in Paragraphs (c) and (d) of Rule .0106 of this Section, including but not limited to:
(A) a description of the sampling procedures followed and methods of chemical analyses used; and
(B) all technical data utilized in support of any conclusions drawn or determinations made.
(2) the results of the predictive calculations or modeling, including a copy of the calculations or model runs and all supporting technical data, used in the demonstration required in Paragraph (d) of Rule .0106 of this Section; and
(3) the proposed methodology and timetable associated with the corrective action for those situations identified in Paragraphs (c) and (d) of Rule .0106 of this Section.
(b) The report shall be prepared under the responsible charge of a Professional Engineer or Licensed Geologist and bear the seal of the same as specified in Rule .0106(d) of this Section.

History Note: *Authority G.S. 143-215.1(b); 143-215.3(a)(1); 143-215.65; 143B-282;*
Eff. August 1, 1989;
Amended Eff. October 1, 1993.

15A NCAC 02L .0112 ANALYTICAL PROCEDURES
Tests or analytical procedures to determine compliance or noncompliance with the standards established in Rule .0202 of this Subchapter will be in accordance with:

(1) The most sensitive of the following methods or procedures for substances where the standard is at or above the method detection limit value:
   (a) The most recent version of Standard Methods for the Examination of Water and Wastewater, published jointly by American Public Health Association, American Water Works Association and Water Pollution Control Federation;
   (b) Methods for Chemical Analysis of Water and Waste, 1979, U.S. Environmental Protection Agency publication number EPA-600/4-79-020, as revised March 1983;
   (c) Test Methods for Evaluating Solid Wastes: Physical/Chemical Methods, 3rd Edition, 1986, U.S. Environmental Protection Agency publication number SW-846;
   (d) Test Procedures for the Analysis of Pollutants Under the Clean Water Act, Federal Register Vol. 49, No. 209, 40 CFR Part 136, October 26, 1984;
   (e) Methods or procedures approved by letter from the Director upon application by the regulated source; or
(2) A method or procedure approved by the Director for substances where the standard is less than the method detection limit value.

History Note: *Authority G.S. 143-215.3(a)(1); 143B-282;*
Eff. August 1, 1989;
Amended Eff. October 1, 1993.

15A NCAC 02L .0113 VARIANCE

(a) The Commission, on its own initiative or pursuant to a request under G.S. 143-215.3(e), may grant variances to the rules of this Subchapter.

(b) Requests for variances are filed by letter from the applicant to the Environmental Management Commission. The application shall be mailed to the chairman of the Commission in care of the Director, Division of Environmental Management, Post Office Box 29535, Raleigh, N.C. 27626-0535.

(c) The application shall contain the following information:
(1) Applications filed by counties or municipalities must include a resolution of the County Board of Commissioners or the governing board of the municipality requesting the variance.
(2) A description of the past, existing or proposed activities or operations that have or would result in a discharge of contaminants to the groundwaters.
(3) Description of the proposed area for which a variance is requested. A detailed location map, showing the orientation of the facility, potential for groundwater contaminant migration, as well as the area covered by the variance request, with reference to at least two geographic references (numbered roads, named streams/rivers, etc.) must be included.
(4) Supporting information to establish that the variance will not endanger the public health and safety, including health and environmental effects from exposure to groundwater contaminants. (Location of wells and other water supply sources including details of well construction within 1/2 mile of site must be shown on a map).
(5) Supporting information to establish that requirements of this Rule cannot be achieved by providing the best available technology economically reasonable. This information must identify specific technology considered, and the costs of implementing the technology and the impact of the costs on the applicant.
(6) Supporting information to establish that compliance would produce serious financial hardship on the applicant.
(7) Supporting information that compliance would produce serious financial hardship without equal or greater public benefit.
(8) A copy of any Special Order that was issued in connection with contaminants in the proposed area and supporting information that applicant has complied with the Special Order.
(9) A list of the names and addresses of any property owners within the proposed area of the variance as well as any property owners adjacent to the site covered by the variance.

(d) Upon receipt of the application, the Director will review it for completeness and request additional information if necessary. When the application is complete, the Director shall give public notice of the application and schedule the matter for a public hearing in accordance with G.S. 143-215.4(b) and the procedures set out in Paragraph (e) of this Rule.

(e) Notice of Public Hearing:

(1) Notice of public hearing on any variance application shall be circulated in the geographical areas of the proposed variance by the Director at least 30 days prior to the date of the hearing:

(A) by publishing the notice one time in a newspaper having general circulation in said county;

(B) by mailing to the North Carolina Department of Environment, Health, and Natural Resources, Division of Environmental Health and appropriate local health agency;

(C) by mailing to any other federal, state or local agency upon request;

(D) by mailing to the local governmental unit or units having jurisdiction over the geographic area covered by the variance;

(E) by mailing to any property owner within the proposed area of the variance, as well as any property owners adjacent to the site covered by the variance; and

(F) by mailing to any person or group upon request.

(2) The contents of public notice of any hearing shall include at least the following:

(A) name, address, and phone number of agency holding the public hearing;

(B) name and address of each applicant whose application will be considered at the meeting;

(C) brief summary of the variance request;

(D) geographic description of a proposed area for which a variance is requested;

(E) brief description of activities or operations which have or will result in the discharge of contaminants to the groundwaters described in the variance application;

(F) a brief reference to the public notice issued for each variance application;

(G) information regarding the time and location for the hearing;

(H) the purpose of the hearing;

(I) address and phone number of premises at which interested persons may obtain further information, request a copy of each application, and inspect and copy forms and related documents; and

(J) a brief description of the nature of the hearing including the rules and procedures to be followed. The notice shall also state that additional information is on file with the Director and may be inspected at any time during normal working hours. Copies of the information on file will be made available upon request and payment of cost or reproduction.

(f) All comments received within 30 days following the date of the public hearing shall be made part of the application file and shall be considered by the Commission prior to taking final action on the application.

(g) In determining whether to grant a variance, the Commission shall consider whether the applicant has complied with any Special Order, or Special Order by Consent issued under G.S. 143-215.2.

(h) If the Commission's final decision is unacceptable, the applicant may file a petition for a contested case in accordance with Chapter 150B of the General Statutes. If the petition is not filed within 60 days, the decision on the variance shall be final and binding.

(i) A variance shall not operate as a defense to an action at law based upon a public or private nuisance theory or any other cause of action.

History Note: *Authority G.S. 143-215.3(a)(1); 143-215.3(a)(3); 143-215.3(a)(4); 143-215.3(e); 143-215.4;*
Eff. August 1, 1989;
Amended Eff. October 1, 1993.

15A NCAC 02L .0114 NOTIFICATION REQUIREMENTS

(a) Any person subject to the requirements of Rule .0106(c) of this Section shall submit to the local Health Director, and the chief administrative officer of the political jurisdictions in which the groundwater contamination has occurred, a report that describes:

(1) The area extent of the contaminant plume;

(2) The chemical constituents in the groundwater which exceed the standards described in Rule .0202 of this Subchapter;

(3) Actions taken and intended to mitigate threats to human health;

(4) The location of any wells installed for the purpose of monitoring the contaminant plume and the frequency of sampling.

The report described in this Rule shall be submitted no later than five working days after submittal of the completed report assessing the cause, significance and extent of the violation as required by Rule .0106(c).

(b) Any person who submits a request under Rule .0106(k), (l), or (m) of this Section shall notify the local Health Director and the chief administrative officer of the political jurisdictions in which the contaminant plume occurs, and all property owners and occupants within or contiguous to the area underlain by the contaminant plume, and under the areas where it is expected to migrate, of the nature of the request and reasons supporting it. Notification shall be made by certified mail concurrent with the submittal of the request to the Director. A final decision by the Director shall be postponed for a period of 30 days following receipt of the request so that the Director may consider comments submitted by individuals interested in the request.
(c) Any person whose request under Rule .0106(k), (l), or (m) of this Section is granted by the Director shall notify parties specified in Paragraph (b) of this Rule of the Director's decision. Notification shall be made by certified mail within 30 days of receipt of the Director's decision.

History Note: *Authority G.S. 143-214.1; 143-215.3(a)(1); 143B-282(2)b;*
Eff. October 1, 1993.

15A NCAC 02L .0115 RISK-BASED ASSESSMENT AND CORRECTIVE ACTION FOR PETROLEUM UNDERGROUND STORAGE TANKS

History Note: *Authority G.S. 143-215.2; 143-215.3(a)(1); 143-215.94A; 143-215.94E; 143-215.94T; 143-215.94V; 143B-282; 1995 (Reg. Sess. 1996) c. 648,s. 1;*
Temporary Adoption Eff. January 2, 1998;
Eff. October 29, 1998;
Recodified to 15A NCAC 02L .0400 Eff. December 1, 2005.

SECTION .0200 - CLASSIFICATIONS AND GROUNDWATER QUALITY STANDARDS

15A NCAC 02L .0201 GROUNDWATER CLASSIFICATIONS
The classifications which may be assigned to the groundwaters will be those specified in the following series of classifications:

(1) Class GA groundwaters; usage and occurrence:
  (a) Best Usage. Existing or potential source of drinking water supply for humans.
  (b) Conditions Related to Best Usage. This class is intended for those groundwaters in which chloride concentrations are equal to or less than 250 mg/l, and which are considered suitable for drinking in their natural state, but which may require treatment to improve quality related to natural conditions.
  (c) Occurrence. In the saturated zone.
(2) Class GSA groundwaters; usage and occurrence:
  (a) Best Usage. Existing or potential source of water supply for potable mineral water and conversion to fresh waters.
  (b) Conditions Related to Best Usage. This class is intended for those groundwaters in which the chloride concentrations due to natural conditions is in excess of 250 mg/l, but which otherwise may be considered suitable for use as potable water after treatment to reduce concentrations of naturally occurring substances.
  (c) Occurrence. In the saturated zone.
(3) Class GC groundwaters: usage and occurrence:
  (a) Best Usage. The best usage of GC groundwaters is as a source of water supply for purposes other than drinking, including other domestic uses by humans.
  (b) Conditions Related to Best Usage. This class includes those groundwaters that do not meet the quality criteria for GA or GSA groundwaters and for which efforts to improve groundwater quality would not be technologically feasible, or not in the best interest of the public. Continued consumption of waters of this class by humans could result in adverse health affects.
  (c) Occurrence. Groundwaters of this class may be defined by the Commission pursuant to Section .0300 of this Subchapter on a case by case basis.

History Note: *Authority G.S. 143-214.1; 143B-282(2);*
Eff. June 10, 1979;
Amended Eff. October 1, 1993; August 1, 1989; September 1, 1984; December 30, 1983.

15A NCAC 02L .0202 GROUNDWATER QUALITY STANDARDS

(a) The groundwater quality standards for the protection of the groundwaters of the state are those specified in this Rule. They are the maximum allowable concentrations resulting from any discharge of contaminants to the land or waters of the state, which may be tolerated without creating a threat to human health or which would otherwise render the groundwater unsuitable for its intended best usage.

(b) The groundwater quality standards for contaminants specified in Paragraphs (h) and (i) of this Rule are as listed, except that:

(1) Where the standard for a substance is less than the practical quantitation limit, the detection of that substance at or above the practical quantitation limit constitutes a violation of the standard.

(2) Where two or more substances exist in combination, the Director shall consider the effects of chemical interactions as determined by the Division of Public Health and may establish maximum concentrations at values less than those established in accordance with Paragraphs (c), (h), or (i) of this Rule. In the absence of information to the contrary, in accordance with Paragraph (d) of this Rule, the carcinogenic risks associated with carcinogens present shall be considered additive and the toxic effects associated with non-carcinogens present shall also be considered additive.

(3) Where naturally occurring substances exceed the established standard, the standard shall be the naturally occurring concentration as determined by the Director.

(4) Where the groundwater standard for a substance is greater than the Maximum Contaminant Level (MCL), the Director shall apply the MCL as the groundwater standard at any private drinking water well or public water system well that may be impacted.

(c) Except for tracers used in concentrations which have been determined by the Division of Public Health to be protective of human health, and the use of which has been permitted by the Division, substances which are not naturally occurring and for which no standard is specified shall not be permitted in concentrations at or above the practical quantitation limit in Class GA or Class GSA groundwaters. Any person may petition the Director to establish an interim maximum allowable concentration for a substance for which a standard has not been established under this Rule. The petitioner shall submit relevant toxicological and epidemiological data, study results, and calculations necessary to establish a standard in accordance with Paragraph (d) of this Rule. Within three months after the establishment of an interim maximum allowable concentration for a substance by the Director, the Director shall initiate action to consider adoption of a standard for that substance.

(d) Except as provided in Paragraph (f) of this Rule, groundwater quality standards for substances in Class GA and Class GSA groundwaters are established as the least of:

(1) Systemic threshold concentration calculated as follows: [Reference Dose (mg/kg/day) x 70 kg (adult body weight) x Relative Source Contribution (.10 for inorganics; .20 for organics)] / [2 liters/day (avg. water consumption)];

(2) Concentration which corresponds to an incremental lifetime cancer risk of 1x10-6;

(3) Taste threshold limit value;

(4) Odor threshold limit value;

(5) Maximum contaminant level; or

(6) National secondary drinking water standard.

(e) The following references, in order of preference, shall be used in establishing concentrations of substances which correspond to levels described in Paragraph (d) of this Rule.

(1) Integrated Risk Information System (U.S. EPA).

(2) Health Advisories (U.S. EPA Office of Drinking Water).

(3) Other health risk assessment data published by the U.S. EPA.

(4) Other relevant, published health risk assessment data, and scientifically valid peer-reviewed published toxicological data.

(f) The Commission may establish groundwater standards less stringent than existing maximum contaminant levels or national secondary drinking water standards if it finds, after public notice and opportunity for hearing, that:

(1) more recent data published in the EPA health references listed in Paragraph (e) of this Rule results in a standard which is protective of public health, taste threshold, or odor threshold;
(2) the standard will not endanger the public health and safety, including health and environmental effects from exposure to groundwater contaminants; and
(3) compliance with a standard based on the maximum contaminant level or national secondary drinking water standard would produce serious hardship without equal or greater public benefit.

(g) Groundwater quality standards specified in Paragraphs (h) and (i) of this Rule and interim maximum allowable concentrations established pursuant to Paragraph (c) of this Rule shall be reviewed by the Director on a triennial basis. Appropriate modifications to established standards shall be made in accordance with the procedure prescribed in Paragraph (d) of this Rule where modifications are considered appropriate based on data published subsequent to the previous review.

(h) Class GA Standards. Unless otherwise indicated, the standard refers to the total concentration in micrograms per liter of any constituent in a dissolved, colloidal or particulate form which is mobile in groundwater. This does not apply to sediment or other particulate matter which is preserved in a groundwater sample as a result of well construction or sampling procedures. The Class GA standards are:

(1) Acenaphthene: 80;
(2) Acenaphthylene: 200;
(3) Acetone: 6 mg/L;
(4) Acrylamide: 0.008;
(5) Anthracene: 2 mg/L;
(6) Arsenic: 10;
(7) Atrazine and chlorotriazine metabolites: 3;
(8) Barium: 700;
(9) Benzene: 1;
(10) Benzo(a)anthracene (benz(a)anthracene): 0.05;
(11) Benzo(b)fluoranthene: 0.05;
(12) Benzo(k)fluoranthene: 0.5;
(13) Benzoic acid: 30 mg/L;
(14) Benzo(g,h,i,)perylene: 200;
(15) Benzo(a)pyrene: 0.005;
(16) Bis(chloroethyl)ether: 0.03;
(17) Bis(2-ethylhexyl) phthalate (di(2-ethylhexyl) phthalate): 3;
(18) Boron: 700;
(19) Bromodichloromethane: 0.6;
(20) Bromoform (tribromomethane): 4;
(21) n-Butylbenzene: 70;
(22) sec-Butylbenzene: 70;
(23) tert-Butylbenzene: 70;
(24) Butylbenzyl phthalate: 1 mg/L;
(25) Cadmium: 2;
(26) Caprolactam: 4 mg/L;
(27) Carbofuran: 40;
(28) Carbon disulfide: 700;
(29) Carbon tetrachloride: 0.3;
(30) Chlordane: 0.1;
(31) Chloride: 250 mg/L;
(32) Chlorobenzene: 50;
(33) Chloroethane: 3,000;
(34) Chloroform (trichloromethane): 70;
(35) Chloromethane (methyl chloride): 3;
(36) 2-Chlorophenol: 0.4;
(37) 2-Chlorotoluene (o-chlorotoluene): 100;
(38) Chromium: 10;
(39) Chrysene: 5;
(40) Coliform organisms (total): 1 per 100 mL;
(41) Color: 15 color units;

(42) Copper: 1 mg/L;
(43) Cyanide (free cyanide): 70;
(44) 2, 4-D (2,4-dichlorophenoxy acetic acid): 70;
(45) DDD: 0.1;
(46) DDT: 0.1;
(47) Dibenz(a,h)anthracene: 0.005;
(48) Dibromochloromethane: 0.4;
(49) 1,2-Dibromo-3-chloropropane: 0.04;
(50) Dibutyl (or di-n-butyl) phthalate: 700;
(51) 1,2-Dichlorobenzene (orthodichlorobenzene): 20;
(52) 1,3-Dichlorobenzene (metadichlorobenzene): 200;
(53) 1,4-Dichlorobenzene (paradichlorobenzene): 6;
(54) Dichlorodifluoromethane (Freon-12; Halon): 1 mg/L;
(55) 1,1-Dichloroethane: 6;
(56) 1,2-Dichloroethane (ethylene dichloride): 0.4;
(57) 1,2-Dichloroethene (cis): 70;
(58) 1,2-Dichloroethene (trans): 100;
(59) 1,1-Dichloroethylene (vinylidene chloride): 350;
(60) 1,2-Dichloropropane: 0.6;
(61) 1,3-Dichloropropene (cis and trans isomers): 0.4;
(62) Dieldrin: 0.002;
(63) Diethylphthalate: 6 mg/L;
(64) 2,4-Dimethylphenol (m-xylenol): 100;
(65) Di-n-octyl phthalate: 100;
(66) 1,4-Dioxane (p-dioxane): 3;
(67) Dioxin (2,3,7,8-TCDD): 0.0002 ng/L;
(68) 1,1– Diphenyl (1,1,-biphenyl): 400;
(69) Dissolved solids (total): 500 mg/L;
(70) Disulfoton: 0.3;
(71) Diundecyl phthalate (Santicizer 711): 100;
(72) Endosulfan: 40;
(73) Endrin, total (includes endrin, endrin aldehyde and endrin ketone): 2;
(74) Epichlorohydrin: 4;
(75) Ethyl acetate: 3 mg/L;
(76) Ethylbenzene: 600;
(77) Ethylene dibromide (1,2-dibromoethane): 0.02;
(78) Ethylene glycol: 10 mg/L;
(79) Fluoranthene: 300;
(80) Fluorene: 300;
(81) Fluoride: 2 mg/L;
(82) Foaming agents: 500;
(83) Formaldehyde: 600;
(84) Gross alpha (adjusted) particle activity (excluding radium-226 and uranium): 15 pCi/L;
(85) Heptachlor: 0.008;
(86) Heptachlor epoxide: 0.004;
(87) Heptane: 400;
(88) Hexachlorobenzene (perchlorobenzene): 0.02;
(89) Hexachlorobutadiene: 0.4;
(90) Hexachlorocyclohexane isomers (technical grade): 0.02;
(91) n-Hexane: 400;
(92) Indeno(1,2,3-cd)pyrene: 0.05;
(93) Iron: 300;
(94) Isophorone: 40;
(95) Isopropylbenzene: 70;
(96) Isopropyl ether: 70;

(97) Lead: 15;
(98) Lindane (gamma hexachlorocyclohexane): 0.03;
(99) Manganese: 50;
(100) Mercury: 1;
(101) Methanol: 4 mg/L;
(102) Methoxychlor: 40;
(103) Methylene chloride (dichloromethane): 5;
(104) Methyl ethyl ketone (2-butanone): 4 mg/L;
(105) 2-Methylnaphthalene: 30;
(106) 3-Methylphenol (m-cresol): 400;
(107) 4-Methylphenol (p-cresol): 40;
(108) Methyl tert-butyl ether (MTBE): 20;
(109) Naphthalene: 6;
(110) Nickel: 100;
(111) Nitrate (as N): 10 mg/L;
(112) Nitrite (as N): 1 mg/L;
(113) N-nitrosodimethylamine: 0.0007;
(114) Oxamyl: 200;
(115) Pentachlorophenol: 0.3;
(116) Petroleum aliphatic carbon fraction class (C5 - C8): 400;
(117) Petroleum aliphatic carbon fraction class (C9 - C18): 700;
(118) Petroleum aliphatic carbon fraction class (C19 - C36): 10 mg/L;
(119) Petroleum aromatics carbon fraction class (C9 - C22): 200;
(120) pH: 6.5 - 8.5;
(121) Phenanthrene: 200;
(122) Phenol: 30;
(123) Phorate: 1;
(124) n-Propylbenzene: 70;
(125) Pyrene: 200;
(126) Selenium: 20;
(127) Silver: 20;
(128) Simazine: 4;
(129) Styrene: 70;
(130) Sulfate: 250 mg/L;
(131) 1,1,2,2-Tetrachloroethane: 0.2;
(132) Tetrachloroethylene (perchloroethylene; PCE): 0.7;
(133) 2,3,4,6-Tetrachlorophenol: 200;
(134) Toluene: 600;
(135) Toxaphene: 0.03;
(136) 2,4,5-TP (Silvex): 50;
(137) 1,2,4-Trichlorobenzene: 70;
(138) 1,1,1-Trichloroethane: 200;
(139) Trichloroethylene (TCE): 3;
(140) Trichlorofluoromethane: 2 mg/L;
(141) 1,2,3-Trichloropropane: 0.005;
(142) 1,2,4-Trimethylbenzene: 400;
(143) 1,3,5-Trimethylbenzene: 400;
(144) 1,1,2-Trichloro-1,2,2-trifluoroethane (CFC-113): 200 mg/L;
(145) Vinyl chloride: 0.03;
(146) Xylenes (o-, m-, and p-): 500; and
(147) Zinc: 1 mg/L.

(i) Class GSA Standards. The standards for this class are the same as those for Class GA except as follows:
(1) chloride: allowable increase not to exceed 100 percent of the natural quality concentration; and
(2) dissolved solids (total): 1000 mg/L.

(j) Class GC Standards.

(1) The concentrations of substances that, at the time of classification, exceed the standards applicable to Class GA or GSA groundwaters shall not be caused to increase, nor shall the concentrations of other substances be caused to exceed the GA or GSA standards as a result of further disposal of contaminants to or beneath the surface of the land within the boundary of the area classified GC.

(2) The concentrations of substances that, at the time of classification, exceed the standards applicable to GA or GSA groundwaters shall not be caused to migrate as a result of activities within the boundary of the GC classification, so as to violate the groundwater or surface water quality standards in adjoining waters of a different class.

(3) Concentrations of specific substances, that exceed the established standard at the time of classification, are listed in Section .0300 of this Subchapter.

History Note: *Authority G.S. 143-214.1; 143B-282(a)(2);*
Eff. June 10, 1979;
Amended Eff. November 1, 1994; October 1, 1993; September 1, 1992; August 1, 1989;
Temporary Amendment Eff. June 30, 2002;
Amended Eff. August 1, 2002;
Temporary Amendment Expired February 9, 2003;
Amended Eff. April 1, 2013; January 1, 2010; April 1, 2005.

SECTION .0300 - ASSIGNMENT OF UNDERGROUND WATER CLASSIFICATIONS

15A NCAC 02L .0301 CLASSIFICATIONS: GENERAL

(a) Schedule of Classifications. The classifications are based on the quality, occurrence and existing or contemplated best usage of the groundwaters as established in Section .0200 of this Subchapter and are assigned statewide except where supplemented or supplanted by specific classification assignments by major river basins.

(b) Classifications and Water Quality Standards. The classifications and standards assigned to the groundwaters are denoted by the letters GA, GSA, or GC. These classifications refer to the classifications and standards established by Rule .0201 of this Subchapter.

History Note: *Authority G.S. 143-214.1; 143B-282(2);*
Eff. December 30, 1983;
Amended Eff. August 1, 1989.

15A NCAC 02L .0302 STATEWIDE

The classifications assigned to the groundwaters located within the boundaries or under the extraterritorial jurisdiction of the State of North Carolina are:

(1) Class GA Waters. Those groundwaters in the state naturally containing 250 mg/l or less of chloride are classified GA.

(2) Class GSA Waters. Those groundwaters in the state naturally containing greater than 250 mg/l chloride are classified GSA.

(3) Class GC Waters. Those groundwaters assigned the classification GC in Rules .0303 - .0318 of this Section.

History Note: *Authority G.S. 143-214.1; 143B-282(2);*
Eff. December 30, 1983;
Amended Eff. August 1, 1989.

15A NCAC 02L .0303 BROAD RIVER BASIN

No classification assignments other than those specified in Rule .0302 are made for the river basin.

History Note: *Authority G.S. 143-214.1;*

Eff. December 30, 1983.

15A NCAC 02L .0304 CAPE FEAR RIVER BASIN
No classification assignments other than those specified in Rule .0302 are made for the river basin.

History Note: *Authority G.S. 143-214.1;*
Eff. December 30, 1983.

15A NCAC 02L .0305 CATAWBA RIVER BASIN
No classification assignments other than those specified in Rule .0302 are made for the river basin.

History Note: *Authority G.S. 143-214.1;*
Eff. December 30, 1983.

15A NCAC 02L .0306 CHOWAN RIVER BASIN
No classification assignments other than those specified in Rule .0302 are made for the river basin.

History Note: *Authority G.S. 143-214.1;*
Eff. December 30, 1983.

15A NCAC 02L .0307 FRENCH BROAD RIVER BASIN
No classification assignments other than those specified in Rule .0302 are made for the river basin.

History Note: *Authority G.S. 143-214.1;*
Eff. December 30, 1983.

15A NCAC 02L .0308 HIWASSEE RIVER BASIN
No classification assignments other than those specified in Rule .0302 are made for the river basin.

History Note: *Authority G.S. 143-214.1;*
Eff. December 30, 1983.

15A NCAC 02L .0309 LITTLE TENNESSEE RIVER BASIN
No classification assignments other than those specified in Rule .0302 are made for the river basin.

History Note: *Authority G.S. 143-214.1;*
Eff. December 30, 1983.

15A NCAC 02L .0310 SAVANNAH RIVER BASIN
No classification assignments other than those specified in Rule .0302 are made for the river basin.

History Note: *Authority G.S. 143-214.1;*
Eff. December 30, 1983.

15A NCAC 02L .0311 LUMBER RIVER BASIN
No classification assignments other than those specified in Rule .0302 are made for the river basin.

History Note: *Authority G.S. 143-214.1;*
Eff. December 30, 1983.

15A NCAC 02L .0312 NEUSE RIVER BASIN
No classification assignments other than those specified in Rule .0302 are made for the river basin.

History Note: *Authority G.S. 143-214.1;*
Eff. December 30, 1983.

15A NCAC 02L .0313 NEW-WATAUGA RIVER BASIN
No classification assignments other than those specified in Rule .0302 are made for the river basin.

History Note: *Authority G.S. 143-214.1;*
Eff. December 30, 1983.

15A NCAC 02L .0314 PASQUOTANK RIVER BASIN
No classification assignments other than those specified in Rule .0302 are made for the river basin.

History Note: *Authority G.S. 143-214.1;*
Eff. December 30, 1983.

15A NCAC 02L .0315 ROANOKE RIVER BASIN
No classification assignments other than those specified in Rule .0302 are made for the river basin.

History Note: *Authority G.S. 143-214.1;*
Eff. December 30, 1983.

15A NCAC 02L .0316 TAR PAMLICO RIVER BASIN
No classification assignments other than those specified in Rule .0302 are made for the river basin.

History Note: *Authority G.S. 143-214.1;*
Eff. December 30, 1983.

15A NCAC 02L .0317 WHITE OAK RIVER BASIN
No classification assignments other than those specified in Rule .0302 are made for the river basin.

History Note: *Authority G.S. 143-214.1;*
Eff. December 30, 1983.

15A NCAC 02L .0318 YADKIN-PEE DEE RIVER BASIN
No classification assignments other than those specified in Rule .0302 are made for the river basin.

History Note: *Authority G.S. 143-214.1;*
Eff. December 30, 1983.

15A NCAC 02L .0319 RECLASSIFICATION
The groundwater classifications as assigned may be revised by the Commission following public notice and subsequent public hearing. Changes may be to a higher or lower classification. Reclassification requests may be submitted to the Director.

History Note: *Authority G.S. 143-214.1; 143-215.3(e); 143B-282(2);*
Eff. December 30, 1983;
Amended Eff. August 1, 1989.

SECTION .0400 - RISK-BASED ASSESSMENT AND CORRECTIVE ACTION FOR PETROLEUM UNDERGROUND STORAGE TANKS

15A NCAC 02L .0401 PURPOSE AND SCOPE
(a) The purpose of this Section is to establish procedures for risk-based assessment and corrective action sufficient to:
(1) protect human health and the environment;
(2) abate and control contamination of the waters of the State as deemed necessary to protect human health and the environment;
(3) permit management of the State's groundwaters to protect their designated current usage and potential future uses;
(4) provide for anticipated future uses of the State's groundwater;
(5) recognize the diversity of contaminants, the State's geology and the characteristics of each individual site; and
(6) accomplish these goals in a cost-efficient manner to assure the best use of the limited resources available to address groundwater pollution within the State.
(b) The applicable portions of Section .0100 not specifically excluded apply to this Section.

History Note: *Authority G.S. 143-215.2; 143-215.3(a)(1); 143-215.94A; 143-215.94E; 143-215.94T; 143-215.94V; 143B-282; 1995 (Reg. Sess. 1996) c. 648,s. 1;*
Recodified from 15A NCAC 02L .0115(a);
Amended Eff. December 1, 2005.

15A NCAC 02L .0402 DEFINITIONS
The definitions as set out in 15A NCAC 02L .0102 apply to this Section.

History Note: *Authority G.S. 143-215.2; 143-215.3(a)(1); 143-215.94A; 143-215.94E; 143-215.94T; 143-215.94V; 143B-282; 1995 (Reg. Sess. 1996) c. 648,s. 1;*
Eff. December 1, 2005.

15A NCAC 02L .0403 RULE APPLICATION

This Section applies to any discharge or release from a "commercial underground storage tank" or a "noncommercial underground storage tank," as those terms are defined in G.S. 143-215.94A, which is reported on or after the effective date of this Section. This Section shall apply to any discharge or release from a "commercial underground storage tank" or a "noncommercial underground storage tank," as those terms are defined in G.S. 143-215.94A which is reported before the effective date of this Section as provided in 15A NCAC 02L .0416 of this Section. The requirements of this Section shall apply to the owner and operator of the underground storage tank from which the discharge or release occurred, a landowner seeking reimbursement from the Commercial Leaking Underground Storage Tank Fund or the Noncommercial Leaking Underground Storage Tank Fund under G.S. 143-215.94E, and any other person responsible for the assessment or cleanup of a discharge or release from an underground storage tank, including any person who has conducted or controlled an activity which results in the discharge or release of petroleum or petroleum products as defined in G.S. 143-215.94A(10) to the groundwaters of the State, or in proximity thereto; these persons shall be collectively referred to for purposes of this Section as the "responsible party." This Section shall be applied in a manner consistent with the rules found in 15A NCAC 2N in order to assure that the State's requirements regarding assessment and cleanup from underground storage tanks are no less stringent than Federal requirements.

History Note: *Authority G.S. 143-215.2; 143-215.3(a)(1); 143-215.94A; 143-215.94E; 143-215.94T; 143-215.94V; 143B-282; 1995 (Reg. Sess. 1996) c. 648,s. 1;*
Recodified from 15A NCAC 02L .0115(b);
Amended Eff. December 1, 2005.

15A NCAC 02L .0404 REQUIRED INITIAL ABATEMENT ACTIONS BY RESPONSIBLE PARTY

A responsible party shall:

(1) take immediate action to prevent any further discharge or release of petroleum from the underground storage tank; identify and mitigate any fire, explosion or vapor hazard; remove any free product; and comply with the requirements of Rules .0601 through .0604 and .0701 through .0703 and .0705 of Subchapter 02N;

(2) incorporate the requirements of 15A NCAC 02N .0704 into the submittal required under Item (3) of this Paragraph or the limited site assessment report required under 15A NCAC 02L .0405 of this Section, whichever is applicable. Such submittals shall constitute compliance with the reporting requirements of 15A NCAC 02N .0704(b);

(3) submit within 90 days of the discovery of the discharge or release a soil contamination report containing information sufficient to show that remaining unsaturated soil in the side walls and at the base of the excavation does not contain contaminant levels which exceed either the "soil-to-groundwater" or the residential maximum soil contaminant concentrations established by the Department pursuant to 15A NCAC 02L .0411 of this Section, whichever is lower. If such showing is made, the discharge or release shall be classified as low risk by the Department;

History Note: *Authority G.S. 143-215.2; 143-215.3(a)(1); 143-215.94A; 143-215.94E; 143-215.94T; 143-215.94V; 143B-282; 1995 (Reg. Sess. 1996) c. 648,s. 1;*
Recodified from 15A NCAC 02L .0115(c)(1)-(3);
Amended Eff. December 1, 2005.

15A NCAC 02L .0405 REQUIREMENTS FOR LIMITED SITE ASSESSMENT

If the required showing cannot be made under 15A NCAC 02L .0404 of this Section, submit within 120 days of the discovery of the discharge or release, or within such other greater time limit approved by the Department, a report containing information needed by the Department to classify the level of risk to human health and the environment posed by a discharge or release under 15A NCAC 02L .0406 of this Section. Such report shall include, at a minimum:

(1) a location map, based on a USGS topographic map, showing the radius of 1500 feet from the source area of a confirmed release or discharge and depicting all water supply wells and, surface waters and designated wellhead protection areas as defined in 42 U.S.C. 300h-7(e) within the 1500-foot radius. For purposes of this Section, source area means point of release or discharge from the underground storage tank system;

(2) a determination of whether the source area of the discharge or release is within a designated wellhead protection area as defined in 42 U.S.C. 300h-7(e);

(3) if the discharge or release is in the Coastal Plain physiographic region as designated on a map entitled "Geology of North Carolina" published by the Department in 1985, a determination of whether the source

area of the discharge or release is located in an area in which there is recharge to an unconfined or semi-confined deeper aquifer which is being used or may be used as a source of drinking water;

(4) a determination of whether vapors from the discharge or release pose a threat of explosion due to the accumulation of vapors in a confined space or pose any other serious threat to public health, public safety or the environment;

(5) scaled site map(s) showing the location of the following which are on or adjacent to the property where the source is located: site boundaries, roads, buildings, basements, floor and storm drains, subsurface utilities, septic tanks and leach fields, underground storage tank systems, monitoring wells, borings and the sampling points;

(6) the results from a limited site assessment which shall include:

(a) the analytical results from soil samples collected during the construction of a monitoring well installed in the source area of each confirmed discharge or release from a noncommercial or commercial underground storage tank and either the analytical results of a groundwater sample collected from the well or, if free product is present in the well, the amount of free product in the well. The soil samples shall be collected every five feet in the unsaturated zone unless a water table is encountered at or greater than a depth of 25 feet from land surface in which case soil samples shall be collected every 10 feet in the unsaturated zone. The soil samples shall be collected from suspected worst-case locations exhibiting visible contamination or elevated levels of volatile organic compounds in the borehole;

(b) if any constituent in the groundwater sample from the source area monitoring well installed in accordance with Sub-item (a) of this Item, for a site meeting the high risk classification in 15A NCAC 02L .0406(1), exceeds the standards or interim standards established in 15A NCAC 02L .0202 by a factor of 10 and is a discharge or release from a commercial underground storage tank, the analytical results from a groundwater sample collected from each of three additional monitoring wells or, if free product is present in any of the wells, the amount of free product in such well. The three additional monitoring wells shall be installed as follows: as best as can be determined, one upgradient of the source of contamination and two downgradient of the source of contamination. The monitoring wells installed upgradient and downgradient of the source of contamination must be located such that groundwater flow direction can be determined; and

(c) potentiometric data from all required wells;

(7) the availability of public water supplies and the identification of properties served by the public water supplies within 1500 feet of the source area of a confirmed discharge or release;

(8) the land use, including zoning if applicable, within 1500 feet of the source area of a confirmed discharge or release;

(9) a discussion of site specific conditions or possible actions which could result in lowering the risk classification assigned to the release. Such discussion shall be based on information known or required to be obtained under this Paragraph; and

(10) names and current addresses of all owners and operators of the underground storage tank systems for which a discharge or release is confirmed, the owner(s) of the land upon which such systems are located, and all potentially affected real property owners. When considering a request from a responsible party for additional time to submit the report, the Division shall consider the extent to which the request for additional time is due to factors outside of the control of the responsible party, the previous history of the person submitting the report in complying with deadlines established under the Commission's rules, the technical complications associated with assessing the extent of contamination at the site or identifying potential receptors, and the necessity for immediate action to eliminate an imminent threat to public health or the environment.

History Note: *Authority G.S. 143-215.2; 143-215.3(a)(1); 143-215.94A; 143-215.94E; 143-215.94T; 143-215.94V; 143B-282; 1995 (Reg. Sess. 1996) c. 648,s. 1;*
Recodified from 15A NCAC 02L .0115(c)(4);
Amended Eff. December 1, 2005.

15A NCAC 02L .0406 DISCHARGE OR RELEASE CLASSIFICATIONS

The Department shall classify the risk of each known discharge or release as high, intermediate or low risk unless the discharge or release has been classified under 15A NCAC 02L .0404(3) of this Section. For purposes of this Section:

(1) "High risk" means that:
- (a) a water supply well, including one used for non-drinking purposes, has been contaminated by the release or discharge;
- (b) a water supply well used for drinking water is located within 1000 feet of the source area of a confirmed discharge or release;
- (c) a water supply well not used for drinking water is located within 250 feet of the source area of a confirmed discharge or release;
- (d) the groundwater within 500 feet of the source area of a confirmed discharge or release has the potential for future use in that there is no source of water supply other than the groundwater;
- (e) the vapors from the discharge or release pose a serious threat of explosion due to accumulation of the vapors in a confined space; or
- (f) the discharge or release poses an imminent danger to public health, public safety, or the environment.

(2) "Intermediate risk" means that:
- (a) surface water is located within 500 feet of the source area of a confirmed discharge or release and the maximum groundwater contaminant concentration exceeds the applicable surface water quality standards and criteria found in 15A NCAC 02B .0200 by a factor of 10;
- (b) in the Coastal Plain physiographic region as designated on a map entitled "Geology of North Carolina" published by the Department in 1985, the source area of a confirmed discharge or release is located in an area in which there is recharge to an unconfined or semi-confined deeper aquifer which the Department determines is being used or may be used as a source of drinking water;
- (c) the source area of a confirmed discharge or release is within a designated wellhead protection area, as defined in 42 U.S.C. 300h-7(e);
- (d) the levels of groundwater contamination for any contaminant except ethylene dibromide, benzene and alkane and aromatic carbon fraction classes exceed 50 percent of the solubility of the contaminant at 25 degrees Celsius or 1,000 times the groundwater standard or interim standard established in 15A NCAC 02L .0202, whichever is lower; or
- (e) the levels of groundwater contamination for ethylene dibromide and benzene exceed 1,000 times the federal drinking water standard set out in 40 CFR 141.

(3) "Low risk" means that:
- (a) the risk posed does not fall within the high or intermediate risk categories; or
- (b) based on review of site-specific information, limited assessment or interim corrective actions, the Department determines that the discharge or release poses no significant risk to human health or the environment.

If the criteria for more than one risk category applies, the discharge or release shall be classified at the highest risk level identified in 15A NCAC 02L .0407 of this Section.

History Note: *Authority G.S. 143-215.2; 143-215.3(a)(1); 143-215.94A; 143-215.94E; 143-215.94T; 143-215.94V; 143B-282; 1995 (Reg. Sess. 1996) c. 648,s. 1;*
Recodified from 15A NCAC 02L .0115(d);
Amended Eff. December 1, 2005.

15A NCAC 02L .0407 RECLASSIFICATION OF RISK LEVELS

(a) The Department may reclassify the risk posed by a release if warranted by further information concerning the potential exposure of receptors to the discharge or release or upon receipt of new information concerning changed conditions at the site. After initial classification of the discharge or release, the Department may require limited assessment, interim corrective action, or other actions which the Department believes will result in a lower risk classification. It shall be a continuing obligation of each responsible party to notify the Department of any changes that might affect the level of risk assigned to a discharge or release by the Department if the change is known or should be known by the responsible party. Such changes shall include, but shall not be limited to, changes in zoning of real property, use of real property or the use of groundwater that has been contaminated or is expected to be contaminated by the discharge or release, if such change could cause the Department to reclassify the risk.

(b) If the risk posed by a discharge or release is determined by the Department to be high risk, the responsible party shall comply with the assessment and cleanup requirements of Rule .0106(c), (g) and (h) of this Subchapter and 15A NCAC 02N

.0706 and .0707. The goal of any required corrective action for groundwater contamination shall be restoration to the level of the groundwater standards set forth in 15A NCAC 02L .0202, or as closely thereto as is economically and technologically feasible. In any corrective action plan submitted pursuant to this Paragraph, natural attenuation shall be used to the maximum extent possible. If the responsible party demonstrates that natural attenuation prevents the further migration of the plume, the Department may approve a groundwater monitoring plan.

(c)If the risk posed by a discharge or release is determined by the Department to be an intermediate risk, the responsible party shall comply with the assessment requirements of 15A NCAC 02L .0106(c) and (g) and 15A NCAC 02N .0706. As part of the comprehensive site assessment, the responsible party shall evaluate, based on site specific conditions, whether the release poses a significant risk to human health or the environment. If the Department determines, based on the site-specific conditions, that the discharge or release does not pose a significant threat to human health or the environment, the site shall be reclassified as a low risk site. If the site is not reclassified, the responsible party shall, at the direction of the Department, submit a groundwater monitoring plan or a corrective action plan, or a combination thereof, meeting the cleanup standards of this Paragraph and containing the information required in 15A NCAC 02L .0106(h) and 15A NCAC 02N .0707. Discharges or releases which are classified as intermediate risk shall be remediated, at a minimum, to a cleanup level of 50 percent of the solubility of the contaminant at 25 degrees Celsius or 1,000 times the groundwater standard or interim standard established in 15A NCAC 02L .0202, whichever is lower for any groundwater contaminant except ethylene dibromide, benzene and alkane and aromatic carbon fraction classes. Ethylene dibromide and benzene shall be remediated to a cleanup level of 1,000 times the federal drinking water standard set out in 40 CFR 141. Additionally, if a corrective action plan or groundwater monitoring plan is required under this Paragraph, the responsible party shall demonstrate that the groundwater cleanup levels are sufficient to prevent a violation of:

(1) the rules contained in 15A NCAC 02B;

(2) the standards contained in 15A NCAC 02L .0202 in a deep aquifer as described in 15A NCAC 02L .0406(2)(b) of this Section; and

(3) the standards contained in 15A NCAC 02L .0202 at a location no closer than one year time of travel upgradient of a well within a designated wellhead protection area, based on travel time and the natural attenuation capacity of the subsurface materials or on a physical barrier to groundwater migration that exists or will be installed by the person making the request.

In any corrective action plan submitted pursuant to this Paragraph, natural attenuation shall be used to the maximum extent possible.

(d) If the risk posed by a discharge or release is determined by the Department to be a low risk, the Department shall notify the responsible party that no cleanup, no further cleanup or no further action will be required by the Department unless the Department later determines that the discharge or release poses an unacceptable risk or a potentially unacceptable risk to human health or the environment. No notification will be issued pursuant to this Paragraph, however, until the responsible party has completed soil remediation pursuant to 15A NCAC 02L .0408 of this Section except as provided in 15A NCAC 02L .0416 of this Section or as closely thereto as economically or technologically feasible. The issuance by the Department of a notification under this Paragraph shall not affect any private right of action by any party which may be affected by the contamination.

History Note: *Authority G.S. 143-215.2; 143-215.3(a)(1); 143-215.94A; 143-215.94E; 143-215.94T; 143-215.94V; 143B-282; 1995 (Reg. Sess. 1996) c. 648,s. 1;*
Recodified from 15A NCAC 02L .0115(e)-(h);
Amended Eff. December 1, 2005.

15A NCAC 02L .0408 ASSESSMENT AND REMEDIATION PROCEDURES

Assessment and remediation of soil contamination shall be addressed as follows:

(1) At the time that the Department determines the risk posed by the discharge or release, the Department shall also determine, based on site-specific information, whether the site is "residential" or "industrial/commercial." For purposes of this Section, a site is presumed residential, but may be classified as industrial/commercial if the Department determines based on site-specific information that exposure to the soil contamination is limited in time due to the use of the site and does not involve exposure to children. For purposes of this Paragraph, "site" means both the property upon which the discharge or release has occurred and any property upon which soil has been affected by the discharge or release.

(2) The responsible party shall submit a report to the Department assessing the vertical and horizontal extent of soil contamination.

(3) For a discharge or release classified by the Department as low risk, the responsible party shall submit a report demonstrating that soil contamination has been remediated to either the residential or industrial/commercial maximum soil contaminant concentration established by the Department pursuant to 15A NCAC 02L .0411 of this Section, whichever is applicable.

(4) For a discharge or release classified by the Department as high or intermediate risk, the responsible party shall submit a report demonstrating that soil contamination has been remediated to the lower of:

(a) the residential or industrial/commercial maximum soil contaminant concentration, whichever is applicable, that has been established by the Department pursuant to 15A NCAC 02L .0411 of this Section; or

(b) the "soil-to-groundwater" maximum soil contaminant concentration that has been established by the Department pursuant to 15A NCAC 02L .0411 of this Section.

History Note: *Authority G.S. 143-215.2; 143-215.3(a)(1); 143-215.94A; 143-215.94E; 143-215.94T; 143-215.94V; 143B-282; 1995 (Reg. Sess. 1996) c. 648,s. 1;*
Recodified from 15A NCAC 02L .0115(i);
Amended Eff. December 1, 2005.

15A NCAC 02L .0409 NOTIFICATION REQUIREMENTS

(a) A responsible party who submits a corrective action plan which proposes natural attenuation or to cleanup groundwater contamination to a standard other than a standard or interim standard established in 15A NCAC 02L .0202, or to cleanup soil other than to the standard for residential use or soil-to-groundwater contaminant concentration established pursuant to this Section, whichever is lowest, shall give notice to: the local Health Director and the chief administrative officer of each political jurisdiction in which the contamination occurs; all property owners and occupants within or contiguous to the area containing the contamination; and all property owners and occupants within or contiguous to the area where the contamination is expected to migrate. Such notice shall describe the nature of the plan and the reasons supporting it. Notification shall be made by certified mail concurrent with the submittal of the corrective action plan. Approval of the corrective action plan by the Department shall be postponed for a period of 30 days following receipt of the request so that the Department may consider comments submitted. The responsible party shall, within a time frame determined by the Department to be sufficient, provide the Department with a copy of the notice and proof of receipt of each required notice, or of refusal by the addressee to accept delivery of a required notice. If notice by certified mail to occupants under this Paragraph is impractical, the responsible party may give notice by posting such notice prominently in a manner designed to give actual notice to the occupants. If notice is made to occupants by posting, the responsible party shall provide the Department with a copy of the posted notice and a description of the manner in which such posted notice was given.

(b) A responsible party who receives a notice pursuant to 15A NCAC 02L .0407(d) of this Section for a discharge or release which has not been remediated to the groundwater standards or interim standards established in Rule .0202 of this Subchapter or to the lower of the residential or soil-to-groundwater contaminant concentrations established under 15A NCAC 02L .0411 of this Section, shall, within 30 days of the receipt of such notice, provide a copy of the notice to: the local Health Director and the chief administrative officer of each political jurisdiction in which the contamination occurs; all property owners and occupants within or contiguous to the area containing contamination; and all property owners and occupants within or contiguous to the area where the contamination is expected to migrate. Notification shall be made by certified mail. The responsible party shall, within a time frame determined by the Department, provide the Department with proof of receipt of the copy of the notice, or of refusal by the addressee to accept delivery of the copy of the notice. If notice by certified mail to occupants under this Paragraph is impractical, the responsible party may give notice by posting a copy of the notice prominently in a manner designed to give actual notice to the occupants. If notice is made to occupants by posting, the responsible party shall provide the Department with a description of the manner in which such posted notice was given.

History Note: *Authority G.S. 143-215.2; 143-215.3(a)(1); 143-215.94A; 143-215.94E; 143-215.94T; 143-215.94V; 143B-282; 1995 (Reg. Sess. 1996) c. 648,s. 1;*
Recodified from 15A NCAC 02L .0115(j) and (k);
Amended Eff. December 1, 2005.

15A NCAC 02L .0410 DEPARTMENTAL LISTING OF DISCHARGES OR RELEASES

To the extent feasible, the Department shall maintain in each of the Department's regional offices a list of all petroleum underground storage tank discharges or releases discovered and reported to the Department within the region on or after the

effective date of this Section and all petroleum underground storage tank discharges or releases for which notification was issued under 15A NCAC 02L .0407(d) of this Section by the Department on or after the effective date of this Section.

History Note: *Authority G.S. 143-215.2; 143-215.3(a)(1); 143-215.94A; 143-215.94E; 143-215.94T; 143-215.94V; 143B-282; 1995 (Reg. Sess. 1996) c. 648,s. 1;*
Recodified from 15A NCAC 02L .0115(l);
Amended Eff. December 1, 2005.

15A NCAC 02L .0411 ESTABLISHING MAXIMUM SOIL CONTAMINATION CONCENTRATIONS

The Department shall publish, and annually revise, maximum soil contaminant concentrations to be used as soil cleanup levels for contamination from petroleum underground storage tank systems. The Department shall establish maximum soil contaminant concentrations for residential, industrial/commercial and soil-to-groundwater exposures as follows:

(1) The following equations and references shall be used in establishing residential maximum soil contaminant concentrations. Equation 1 shall be used for each contaminant with an EPA carcinogenic classification of A, B1, B2, C, D or E. Equation 2 shall be used for each contaminant with an EPA carcinogenic classification of A, B1, B2 or C. The maximum soil contaminant concentration shall be the lower of the concentrations derived from Equations 1 and 2.

(a) Equation 1: Non-cancer Risk-based Residential Ingestion Concentration
Soil mg/kg =[0.2 x oral chronic reference dose x body weight, age 1 to 6 x averaging time noncarcinogens] / [exposure frequency x exposure duration, age 1 to 6 x (soil ingestion rate, age 1 to 6 / 10^6 mg/kg)].

(b) Equation 2: Cancer Risk-based Residential Ingestion Concentration
Soil mg/kg =[target cancer risk of 10^{-6} x averaging time carcinogens] / [exposure frequency x (soil ingestion factor, age adjusted / 10^6mg/kg) x oral cancer slope factor]. The age adjusted soil ingestion factor shall be calculated by: [(exposure duration, age 1 to 6 x soil ingestion rate, age 1 to 6) /(body weight, age 1 to 6)] + [((exposure duration, total - exposure duration, age 1 to 6) x soil ingestion, adult) / (body weight, adult)].

(c) The exposure factors selected in calculating the residential maximum soil contaminant concentrations shall be within the recommended ranges specified in the following references or the most recent version of these references:

(i) EPA, 1990. Exposure Factors Handbook;

(ii) EPA, 1991. Risk Assessment Guidance for Superfund: Volume I Human Health Evaluation Manual (Part B, Development of Risk Based Preliminary Remediation Goals);

(iii) EPA Region III. Risk-based Concentration Tables (RBC Tables). Office of RCRA, Technical and Program Support Branch. Available at: http://www.epa.gov/reg3hwmd/index.html; and

(iv) EPA, 1995. Supplemental Guidance to RAGS: Region 4 Bulletins Human Health Risk Assessment, including future amendments.

(d) The following references or the most recent version of these references, in order of preference, shall be used to obtain oral chronic reference doses and oral cancer slope factors:

(i) EPA. Integrated Risk Information System (IRIS) Computer Database;

(ii) EPA. Health Effects Assessment Summary Tables (HEAST);

(iii) EPA Region III. Risk-based Concentration Tables (RBC Tables). Office of RCRA, Technical and Program Support Branch. Available at: http://www.epa.gov/reg3hwmd/index.html;

(iv) EPA, 1995. Supplemental Guidance to RAGS: Region 4 Bulletins Human Health Risk Assessment, including future amendments; and

(v) Other appropriate, published health risk assessment data, and scientifically valid peer-reviewed published toxicological data.

(2) The following equations and references shall be used in establishing industrial/commercial maximum soil contaminant concentrations. Equation 1 shall be used for each contaminant with an EPA carcinogenic classification of A, B1, B2, C, D or E. Equation 2 shall be used for each contaminant with an EPA carcinogenic classification of A, B1, B2 or C. The maximum soil contaminant concentration shall be the lower of the concentrations derived from Equations 1 and 2.

(a) Equation 1: Non-cancer Risk-based Industrial/Commercial Ingestion Concentration
Soil mg/kg =[0.2 x oral chronic reference dose x body weight, adult x averaging time noncarcinogens] / [exposure frequency x exposure duration, adult x (soil ingestion rate, adult / 10^6 mg/kg) x fraction of contaminated soil ingested].

(b) Equation 2: Cancer Risk-based Industrial/Commercial Ingestion Concentration
Soil mg/kg =[target cancer risk of 10^{-6} x body weight, adult x averaging time carcinogens] / [exposure frequency x exposure duration, adult x (soil ingestion rate, adult / 10^6 mg/kg) x fraction of contaminated soil ingested x oral cancer slope factor].

(c) The exposure factors selected in calculating the industrial/commercial maximum soil contaminant concentrations shall be within the recommended ranges specified in the following references or the most recent version of these references:

(i) EPA, 1990. Exposure Factors Handbook;

(ii) EPA, 1991. Risk Assessment Guidance for Superfund: Volume I Human Health Evaluation Manual (Part B, Development of Risk Based Preliminary Remediation Goals);

(iii) EPA Region III. Risk-based Concentration Tables (RBC Tables). Office of RCRA, Technical and Program Support Branch. Available at: http://www.epa.gov/reg3hwmd/index.html; and

(iv) EPA, 1995. Supplemental Guidance to RAGS: Region 4 Bulletins Human Health Risk Assessment, including future amendments.

(d) The following references or the most recent version of these references, in order of preference, shall be used to obtain oral chronic reference doses and oral cancer slope factors:

(i) EPA. Integrated Risk Information System (IRIS) Computer Database;

(ii) EPA. Health Effects Assessment Summary Tables (HEAST);

(iii) EPA Region III. Risk-based Concentration Tables (RBC Tables). Office of RCRA, Technical and Program Support Branch. Available at http://www.epa.gov/reg3hwmd/index.html;

(iv) EPA, 1995. Supplemental Guidance to RAGS: Region 4 Bulletins Human Health Risk Assessment, including future amendments; and

(v) Other appropriate, published health risk assessment data, and scientifically valid peer-reviewed published toxicological data.

(3) The following equations and references shall be used in establishing the soil-to-groundwater maximum contaminant concentrations:

(a) Organic Constituents:
Soil mg/kg = groundwater standard or interim standard x [(.02 x soil organic carbon-water partition coefficient) + 4 + (1.733 x 41 x Henry's Law Constant (atm.-m3/mole))].

(i) If no groundwater standard or interim standard has been established under Rule .0202 of this Subchapter, the practical quantitation limit shall be used in lieu of a standard to calculate the soil-to-groundwater maximum contaminant concentrations.

(ii) The following references or the most recent version of these references, in order of preference, shall be used to obtain soil organic carbon-water partition coefficients and Henry's Law Constants:

(A) EPA, 1996. Soil Screening Guidance: Technical Background Document. (EPA/540/R95/128);

(B) EPA, 1986. Superfund Public Health Evaluation Manual. Office of Emergency and Remedial Response (EPA/540/1-86/060);

(C) Agency for Toxic Substances and Disease Registry, "Toxicological Profile for [individual chemical]." U.S. Public Health Service;

(D) Montgomery, J.H., 1996. Groundwater Chemicals Desk Reference. CRC Press, Inc;

(E) Sims, R.C., J.L. Sims and S.G. Hansen, 1991. Soil Transport and Fate Database, Version 2.0. EPA Robert S. Kerr Environmental Laboratory; and

(F) Other appropriate, published, peer-reviewed and scientifically valid data.

(b) Inorganic Constituents:

Soil mg/kg = groundwater standard or interim standard x [(20 x soil-water partition coefficient for pH of 5.5) + 4 + (1.733 x 41 x Henry's Law Constant (atm.-m3/mole))].

(i) If no groundwater standard or interim standard has been established under Rule .0202 of this Subchapter, the practical quantitation limit shall be used in lieu of a standard to calculate the soil-to-groundwater maximum contaminant concentrations.

(ii) The following references or the most recent version of these references, in order of preference, shall be used to obtain soil-water partition coefficients and Henry's Law Constants:

(A) EPA, 1996. Soil Screening Guidance: Technical Background Document. (EPA/540/R95/128);

(B) Baes, C.F., III, R.D. Sharp, A.L. Sjoreen, and R.W. Shor, 1984. A Review and Analysis of Parameters for Assessing Transport of Environmentally Released Radionuclides Through Agriculture. Oak Ridge National Laboratory;

(C) Agency for Toxic Substances and Disease Registry, "Toxicological Profile for [individual chemical]." U.S. Public Health Service;

(D) Sims, R.C., J.L. Sims and S.G. Hansen, 1991. Soil Transport and Fate Database, Version 2.0. EPA Robert S. Kerr Environmental Laboratory; and

(E) Other appropriate, published, peer-reviewed and scientifically valid data.

History Note: *Authority G.S. 143-215.2; 143-215.3(a)(1); 143-215.94A; 143-215.94E; 143-215.94T; 143-215.94V; 143B-282; 1995 (Reg. Sess. 1996) c. 648,s. 1;*
Recodified from 15A NCAC 02L .0115(m);
Amended Eff. December 1, 2005.

15A NCAC 02L .0412 ANALYTICAL PROCEDURES FOR SOIL SAMPLES

(a) Analytical procedures for soil samples required under this Section, except as provided in 15A NCAC 02L .0417 of this Section, shall be methods accepted by the US EPA as suitable for determining the presence and concentration of petroleum hydrocarbons for the type of petroleum released.

(b) A sufficient number of soil samples collected, including the most contaminated sample, shall be analyzed as follows in order to determine the risks of the constituents of contamination:

(1) soil samples collected from a discharge or release of low boiling point fuels, including, but not limited to gasoline, aviation gasoline and gasohol, shall be analyzed for volatile organic compounds and additives using EPA Method 8260, including isopropyl ether and methyl tertiary butyl ether;

(2) soil samples collected from a discharge or release of high boiling point fuels, including, but not limited to, kerosene, diesel, varsol, mineral spirits, naphtha, jet fuels and fuel oil no. 2, shall be analyzed for volatile organic compounds using EPA Method 8260 and semivolatile organic compounds using EPA Method 8270;

(3) soil samples collected from a discharge or release of heavy fuels shall be analyzed for semivolatile organic compounds using EPA Method 8270;

(4) soil samples collected from a discharge or release of used and waste oil shall be analyzed for volatile organic compounds using EPA Method 8260, semivolatile organic compounds using EPA Method 8270, polychlorinated biphenyls using EPA Method 8080, and chromium and lead, using procedures specified in Subparagraph (6) of this Paragraph;

(5) soil samples collected from any discharge or release subject to this Section shall be analyzed for alkane and aromatic carbon fraction classes using methods approved by the Director under Rule 2H .0805(a)(1) of this Chapter;

(6) analytical methods specified in Subparagraphs (1), (2), (3), and (4) of this Paragraph shall be performed as specified in the following references or the most recent version of these references: Test Methods for Evaluating Solid Wastes:Physical/Chemical Methods, November 1990, U.S. Environmental Protection Agency publication number SW-846; or in accordance with other methods or procedures approved by the Director under 15A NCAC 2H.0805(a)(1);

(7) other EPA-approved analytical methods may be used if the methods include the same constituents as the analytical methods specified in Subparagraphs (1), (2), (3), and (4) of this Paragraph and meet the detection limits of the analytical methods specified in Subparagraphs (1), (2), (3), and (4) of this Paragraph; and

(8) metals and acid extractable organic compounds shall be eliminated from analyses of soil samples collected pursuant to this Section if these compounds are not detected in soil samples collected during the construction of the source area monitoring well required under 15A NCAC 02L .0405 of this Section.

History Note: *Authority G.S. 143-215.2; 143-215.3(a)(1); 143-215.94A; 143-215.94E; 143-215.94T; 143-215.94V; 143B-282; 1995 (Reg. Sess. 1996) c. 648,s. 1;*
Recodified from 15A NCAC 02L .0115(n);
Amended Eff. December 1, 2005.

15A NCAC 02L .0413 ANALYTICAL PROCEDURES FOR GROUNDWATER SAMPLES

(a) Analytical procedures for groundwater samples required under this Section shall be methods accepted by the US EPA as suitable for determining the presence and concentration of petroleum hydrocarbons for the type of petroleum released.

(b) A sufficient number of groundwater samples, including the most contaminated sample, shall be analyzed as follows in order to determine the risks of the constituents of contamination:

(1) groundwater samples collected from a discharge or release of low boiling point fuels, including, but not limited to, gasoline, aviation gasoline and gasohol, shall be analyzed for volatile organic compounds using Standard Method 6210D or EPA Methods 601 and 602, including xylenes, isopropyl ether and methyl tertiary butyl ether. Samples shall also be analyzed for ethylene dibromide using EPA Method 504.1 and lead using Standard Method 3030C preparation. 3030C metals preparation, using a 0.45 micron filter, must be completed within 72 hours of sample collection;

(2) groundwater samples collected from a discharge or release of high boiling point fuels, including, but not limited to, kerosene, diesel, varsol, mineral spirits, naphtha, jet fuels and fuel oil no. 2, shall be analyzed for volatile organic compounds using EPA Method 602 and semivolatile organic compounds plus the 10 largest non-target peaks identified using EPA Method 625;

(3) groundwater samples collected from a discharge or release of heavy fuels shall be analyzed for semivolatile organic compounds plus the 10 largest non-target peaks identified using EPA Method 625;

(4) groundwater samples collected from a discharge or release of used or waste oil shall be analyzed for volatile organic compounds using Standard Method 6210D, semivolatile organic compounds plus the 10 largest non-target peaks identified using EPA Method 625, and chromium and lead using Standard Method 3030C preparation. 3030C metals preparation, using a 0.45 micron filter, must be completed within 72 hours of sample collection;

(5) groundwater samples collected from any discharge or release subject to this Section shall be analyzed for alkane and aromatic carbon fraction classes using methods approved by the Director under Rule 2H .0805(a)(1) of this Chapter;

(6) analytical methods specified in Subparagraphs (1), (2), (3) and (4) of this Paragraph shall be performed as specified in the following references or the most recent version of these references: Test Procedures for the Analysis of Pollutants under the Clean Water Act, Federal Register Vol. 49 No. 209, 40 CFR Part 136, October 26, 1984; Standard Methods for the Examination of Water and Wastewater, published jointly by American Public Health Association, American Water Works Association and Water Pollution Control Federation; Methods for Determination of Organic Compounds in Drinking Water, U.S. Environmental Protection Agency publication number EPA-600/4-79-020; or in accordance with other methods or procedures approved by the Director under 15A NCAC 2H .0805(a)(1);

(7) other EPA-approved analytical methods may be used if the methods include the same constituents as the analytical methods specified in Subparagraphs (1), (2), (3), and (4) of this Paragraph and meet the detection limits of the analytical methods specified in Subparagraphs (1), (2), (3), and (4) of this Paragraph; and

(8) metals and acid extractable organic compounds shall be eliminated from analyses of groundwater samples collected pursuant to this Section if these compounds are not detected in the groundwater sample collected from the source area monitoring well installed pursuant to 15A NCAC 02L .0405 of this Section.

History Note: *Authority G.S. 143-215.2; 143-215.3(a)(1); 143-215.94A; 143-215.94E; 143-215.94T; 143-215.94V; 143B-282; 1995 (Reg. Sess. 1996) c. 648,s. 1;*
Recodified from 15A NCAC 02L .0115(o);
Amended Eff. December 1, 2005.

15A NCAC 02L .0414 REQUIRED LABORATORY CERTIFICATION

In accordance with 15A NCAC 02H .0804, laboratories are required to obtain North Carolina Division of Water Quality laboratory certification for parameters that are required to be reported to the State in compliance with the State's surface water, groundwater and pretreatment rules.

History Note: *Authority G.S. 143-215.2; 143-215.3(a)(1); 143-215.94A; 143-215.94E; 143-215.94T; 143-215.94V; 143B-282; 1995 (Reg. Sess. 1996) c. 648,s. 1;*
Recodified from 15A NCAC 02L .0115(p);
Amended Eff. December 1, 2005.

15A NCAC 02L .0415 DISCHARGES OR RELEASES FROM OTHER SOURCES

This Section shall not relieve any person responsible for assessment or cleanup of contamination from a source other than a commercial or noncommercial underground storage tank from its obligation to assess and clean up contamination resulting from such discharge or releases.

History Note: *Authority G.S. 143-215.2; 143-215.3(a)(1); 143-215.94A; 143-215.94E; 143-215.94T; 143-215.94V; 143B-282; 1995 (Reg. Sess. 1996) c. 648,s. 1;*
Recodified from 15A NCAC 02L .0115(q);
Amended Eff. December 1, 2005.

15A NCAC 02L .0416 ELIGIBILITY OF SITES TO CONTINUE REMEDIATION UNDER RULES EXISTING BEFORE THE EFFECTIVE DATE OF 15A NCAC 02L .0115

If the risk posed by the discharge or release has been classified by the Department as Class AB under S.L. 1995-648, s. 1 (Reg. Sess., 1996), the discharge or release is classified as high risk under this Section unless and until the Department reclassifies the risk posed by the discharge or release. If the risk posed by the discharge or release has been classified by the Department as Class CDE under S.L. 1995-648, s. 1 (Reg. Sess., 1996), the discharge or release is classified as low risk under this Section unless and until the Department reclassifies the risk posed by the discharge or release. The responsible party shall notify the Department of any factors that might affect the level of risk assigned to Class AB or Class CDE discharges or releases by the Department. Responsible parties for Class AB discharges or releases for which a site assessment pursuant to Rule .0106 (c) and (g) of this Subchapter has been submitted to the Department before the effective date of this Section, shall continue to comply with notices previously received from the Department unless and until the Department determines that application of all or part of this Section is necessary to protect human health or the environment or may result in a more cost effective assessment and cleanup of the discharge or release. If a site assessment pursuant to Rule .0106 (c) and (g) of this Subchapter has not been submitted to the Department for a Class AB or Class CDE discharge or release before the effective date of this Section, the responsible party shall comply with 15A NCAC 02L .0404 of this Section unless the Department has issued a closure notice for the discharge or release. For discharges or releases classified as low risk under this Paragraph and for which a site assessment pursuant to Rule .0106 (c) and (g) of this Subchapter has been submitted to the Department prior to the effective date of this Section, the Department may issue a notification under 15A NCAC 02L .0407(d) of this Section if the responsible party demonstrates that soil contamination does not exceed contamination cleanup levels established (March 1997) in 15A NCAC 02L .0417 of this Section.

History Note: *Authority G.S. 143-215.2; 143-215.3(a)(1); 143-215.94A; 143-215.94E; 143-215.94T; 143-215.94V; 143B-282; 1995 (Reg. Sess. 1996) c. 648,s. 1;*
Recodified from 15A NCAC 02L .0115(r);
Amended Eff. December 1, 2005.

15A NCAC 02L .0417 ESTABLISHING CLEANUP REQUIREMENTS FOR SITES ELIGIBLE TO CONTINUE REMEDIATION UNDER RULES EXISTING BEFORE THE EFFECTIVE DATE OF 15A NCAC 02L .0115

The Department may issue a notification under 15A NCAC 02L .0407(d) of this Section for a discharge or release classified as low risk under 15A NCAC 02L .0416 of this Section if a site assessment pursuant to Rule .0106(c) and (g) of this Subchapter was submitted to the Department prior to the effective date of this Section and the responsible party demonstrates that soil contamination from the discharge or release has been remediated to the final cleanup levels established under this Paragraph. If it has not already done so, a responsible party must submit all information necessary for the Department to establish a cleanup level under this Paragraph, including, but not limited to, the completed forms contained in Tables 1 and 2. The following requirements are used to establish cleanup levels for sites eligible to continue remediation under the rules existing prior to the effective date of this Section.

(1) In establishing a cleanup level, the Department shall determine whether any of the following conditions apply to the discharge or release:
   (a) groundwater is contaminated by the discharge or release;
   (b) contaminated soil in the unsaturated zone is located less than five feet from the seasonal high water table, bedrock or transmissive indurated sedimentary units. Transmissive indurated sedimentary units shall include, but shall not be limited to shell limestone, fractured shale and sandstone; or
   (c) vapors pose a serious threat of explosion or other public health concern due to the accumulation of the vapors in a confined space.

(2) If any of the conditions specified in Item (1) of this Paragraph apply to the discharge or release, the final cleanup level for the discharge or release shall be:
   (a) 10 mg/kg total petroleum hydrocarbons for discharges or releases of low boiling point fuels, including, but not limited to, gasoline, aviation gasoline, and gasohol;
   (b) 40 mg/kg total petroleum hydrocarbons for discharges or releases of medium and high boiling point fuels, including, but not limited to, kerosene, diesel, varsol, mineral spirits, naphtha, jet fuels and fuel oil no. 2; and
   (c) 250 mg/kg total petroleum hydrocarbons for discharges or releases of waste oil and heavy fuels, including, but not limited to fuel oil nos. 4, 5 and 6, motor oil and hydraulic fluid.

(3) If the conditions specified in Item (1) of this Paragraph do not apply to the discharge or releases, the Department shall determine a final cleanup level in the following manner:
   (a) the total site characteristics score shall be determined from Table 1 by recording and adding the five characteristic scores;
   (b) the total site characteristics score shall be used to determine each applicable initial cleanup level on Table 2;
   (c) using Table 3, the applicable Site Code shall be determined; and
   (d) the final contamination cleanup level for the discharge or release shall be determined by multiplying each applicable initial cleanup level determined in Sub-item (b) of this Item by 1 for Code A sites, 2 for Code B sites and 3 for Code C sites.

(4) Any soil samples obtained to determine cleanup levels pursuant to this Paragraph shall be analyzed as follows:
   (a) soil samples collected from a discharge or release of low boiling point fuels including, but not limited to, gasoline, aviation gasoline and gasohol, shall be analyzed using EPA Method modified 8015 (California Method) with EPA Method 5030 preparation;
   (b) soil samples collected from a discharge or release of medium or high boiling point fuels including, but not limited to, kerosene, diesel, varsol, mineral spirits, naphtha, jet fuels and fuel oil no. 2, shall be analyzed using EPA Method modified 8015 (California Method) with EPA Method 3550 preparation; and
   (c) soil samples collected from a discharge or release of waste oil and heavy fuels, including, but not limited to fuel oil nos. 4, 5 and 6, motor oil and hydraulic fluid, shall be analyzed using EPA Method 9071 or another equivalent EPA-approved method that meets the same detection limits.

(5) Analytical methods for any soil samples obtained to determine cleanup levels pursuant to this Paragraph shall be performed as specified in the following references or the most recent version of these references: Test Methods for Evaluating Solid Wastes: Physical/Chemical Methods, November 1990, U.S. Environmental Protection Agency Publication number SW-846 and Guidelines for Addressing Fuel Leaks, D.M. Eisenberg and others, 1985, California Regional Water Quality Control Board, San Francisco Bay Region.

Table 1

SITE CHARACTERISTICS EVALUATION

Characteristic	Condition	Rating	Score
1) Predominant grain size as classified in accordance with the Unified Soil Classification System or the U.S. Department of	Gravel	150	
	Sand	100	
	Silt	50	
	Clay	0	

Agriculture Soil Classification System		
2) Are preferential pathways for contaminant movement such as quartz veins, coarse-grained sediments, fractures and weathered igneous intrusions present in or below the contaminated soil?	Present and intersecting seasonal high water table	10
	Present but not intersecting seasonal high water table	5
	None Present	0
3) Distance between the contaminated/non-contaminated soil interference and the seasonal high water table	5-10 feet	20
	>10-40 feet	10
	>40 feet	0
4) Is the top of bedrock or transmissive indurated sediments located above seasonal high water table?	Yes	20
	No	0
5) Are artificial conduits present within the zone of contamination?	Present and intersecting seasonal high water table	150
	Present but not intersecting seasonal high water table	10
	Not Present	0
	Total Site Characteristics Score	_____

Table 2

CLEANUP LEVEL DETERMINATION

Initial Cleanup Level — Final Cleanup Level

EPA Method 8015/5030 for Low Boiling Point Hydrocarbons such as Gasoline, Aviation Fuels, Gasohol

Total Site Characteristics Score	**Initial** Cleanup Level TPH (mg/kg)
>150	<10
121 - 150	20
91 - 120	40
61 - 90	60
31 - 60	80
0 - 30	100

Select Site Code*	**Final** Cleanup Level
Code A (Multiply initial cleanup level by 1)	1 x ____ = ___mg/kg
Code B (Multiply initial cleanup level by 2)	2 x ____= ____mg/kg
Code C (Multiply initial cleanup level by 3)	3 x ____=____mg/kg

EPA Method 8015/3550 for Medium and High Boiling Point Hydrocarbons

such as Kerosene, Diesel, Varsol, Mineral Spirits, Naptha

Total Site Characteristics Score	**Initial** Cleanup Level TPH (mg/kg)	Select Site Code*	**Final** Cleanup Level
>150	<40	Code A (Multiply initial cleanup level by 1)	1 x ____ = ___mg/kg
121 - 150	80		
91 - 120	160	Code B (Multiply initial cleanup level by 2)	2 x ____= ____mg/kg
61 - 90	240		
31 - 60	320	Code C (Multiply initial cleanup level by 3)	3 x ____=____mg/kg
0 - 30	400		

EPA Method 9071 for Heavy Fuels
such as Fuel Oil (#4,#5,#6), Motor Oil, Hydraulic Fluid, Waste Oil

Total Site Characteristics Score	**Initial** Cleanup Level TPH (mg/kg)	Select Site Code*	**Final** Cleanup Level
>150	<250	Code A (Multiply initial cleanup level by 1)	1 x ____ = ___mg/kg
121 - 150	400		
91 - 120	550	Code B (Multiply initial cleanup level by 2)	2 x ____= ____mg/kg
61 - 90	700		
31 - 60	850	Code C (Multiply initial cleanup level by 3)	3 x ____=____mg/kg
0 - 30	1000		

See Site Code Description, Table 3

TPH – Total Petroleum Hydrocarbons
mg/kg – milligram per kilogram

Table 3
SITE CODE DESCRIPTIONS

Code-A Site meets both of the following criteria:

1. Water supply well(s) are within 1500 feet of the release.
2. Public water supply is not available for connecting water supply well users.

Code-B Site meets both of the following criteria:

1. Water supply well(s) are within 1500 feet of the release.
2. Public water supply is available for connecting water supply well users, however, water supply wells are still being used.

Code-C Site meets the following criterion:

1. No known water supply well(s) are within 1500 feet of the release.

History Note: *Authority G.S. 143-215.2; 143-215.3(a)(1); 143-215.94A; 143-215.94E; 143-215.94T; 143-215.94V; 143B-282; 1995 (Reg. Sess. 1996) c. 648,s. 1;*
Recodified from 15A NCAC 02L .0115(s);
Amended Eff. December 1, 2005.

SECTION .0500 – RISK-BASED ASSESSMENT AND CORRECTIVE ACTION FOR PETROLEUM RELEASES FROM ABOVEGROUND STORAGE TANKS AND SOURCES

15A NCAC 02L .0501 PURPOSE AND SCOPE

(a) The purpose of this Section is to establish procedures for risk-based assessment and corrective action sufficient to:

(1) protect human health and the environment;

(2) abate and control contamination of the waters of the State as deemed necessary to protect human health and the environment;

(3) permit management of the State's groundwaters to protect their designated current usage and potential future uses;

(4) provide for anticipated future uses of the State's groundwater;

(5) recognize the diversity of contaminants, the State's geology, and the characteristics of each individual site; and

(6) accomplish these goals in a cost-efficient manner to assure the best use of the limited resources available to address groundwater pollution within the State.

(b) The applicable portions of Section .0100 not specifically excluded apply to this Section.

History Note: *Authority G.S. 143-215.3(a)(1); 143B-282; 143-215.84; 143-215.104AA;*
Eff. March 1, 2016.

15A NCAC 02L .0502 DEFINITIONS

The definitions as set out in Rule .0102 of this Subchapter apply to this Section, in addition the following definitions apply throughout this Section:

(1) "Aboveground storage tank" or "AST" means any one or a combination of tanks (including underground pipes connected thereto) that is used to contain an accumulation of petroleum.

(2) "AST system" means an aboveground storage tank, connected underground piping, underground ancillary equipment, and containment system, if any.

(3) "Discharge" includes any emission, spillage, leakage, pumping, pouring, emptying, or dumping of oil into groundwater or surface water or upon land in such proximity to such water that it is likely to reach the water and any discharge upon land which is intentional, knowing, or willful.

(4) "Non-UST means as defined in G.S. 143-215.104AA(g) and excludes underground storage tank releases governed by G.S. 143-215.94V.

(5) "Operator" means any person in control of, or having responsibility for the daily operation of the AST system.

(6) "Owner" means any person who owns a petroleum aboveground storage tank or other non-UST petroleum tank, stationary or mobile, used for storage, use, dispensing, or transport.

(7) "Person" means an individual, trust, firm, joint stock company, Federal agency, corporation, state, municipality, commission, political subdivision of a state, or any interstate body. "Person" also includes a consortium, a joint venture, a commercial entity, and the United States Government.

(8) "Petroleum" or "petroleum products" means as defined in G.S. 143-215.94A(10).

(9) "Release" means any spilling, leaking, emitting, discharging, escaping, leaching, or disposing into groundwater, surface water, or surface or subsurface soils.

(10) "Tank" means a device used to contain an accumulation of petroleum and constructed of non-earthen materials (e.g., concrete, steel, plastic) that provides structural support.

History Note: *Authority G.S. 143-212(4); 143-215.3(a)(1); 143-215.77; 143B-282; 143-215.84; 143-215.104AA;*
Eff. March 1, 2016.

15A NCAC 02L .0503 RULE APPLICATION

This Section applies to any non-UST petroleum discharge. The requirements of this Section shall apply to the owner and operator of a petroleum aboveground storage tank or other non-UST petroleum tank, stationary or mobile, from which a discharge or release occurred and any person determined to be responsible for assessment and cleanup of a discharge or release from a non-UST petroleum source. This includes any person who has conducted or controlled an activity that results in the discharge or release of petroleum or petroleum products (as defined in G.S. 143-215.94A(10)) to the groundwaters of the State, or in proximity thereto. These persons shall be collectively referred to as the "responsible party" for purposes of this Section.

History Note: *Authority G.S. 143-215.3(a)(1); 143B-282; 143-215.84; 143-215.104AA; Eff. March 1, 2016.*

15A NCAC 02L .0504 REQUIRED INITIAL RESPONSE AND ABATEMENT ACTIONS BY RESPONSIBLE PARTY

A responsible party shall:

(1) take actions to prevent any further discharge or release of petroleum from the non-UST petroleum source; identify and mitigate any fire, explosion, or vapor hazard; and report the release within 24 hours of discovery, in compliance with G.S. 143-215.83(a), 84(a), and 85(b);

(2) perform initial abatement actions to measure for the presence of a release where contamination is most likely to be present and to confirm the precise source of the release; to investigate to determine the possible presence of free product and to begin free product removal; and to continue to monitor and mitigate any additional fire, explosion, or vapor hazards posed by vapors or by free product; and submit a report to the Department of Environmental Quality, UST Section, Regional Office Supervisor in accordance with 15A NCAC 02B .0309 and .0311, within 20 days after release confirmation summarizing these initial abatement actions;

(3) remove contaminated soil that would act as continuing source of contamination to groundwater. For a new release, no further action shall be necessary where:

(a) initial abatement actions involving control and removal of contaminated materials are initiated within 48 hours from discovery and before contaminated materials begin to impact groundwater; and

(b) analysis, in accordance with the approved methods in Rule .0412 of this Subchapter, of representative samples of remaining soils shows concentrations:

(i) at or below the more stringent of the soil-to-groundwater concentration value and the residential maximum soil contamination concentration value, or

(ii) using other EPA approved analytical methods in accordance with Rule .0412(b)(7) of this Subchapter concentration values below the more stringent of the soil-to-groundwater concentration alkane and aromatic carbon fraction class values and the residential maximum soil contamination concentration alkane and aromatic carbon fraction class values,

Provided that, for new releases, if the abatement actions cannot be initiated within 48 hours of discovery, or if soil concentrations remain above the values in this Paragraph, the responsible party shall conduct all activities under Items (1) through (5) of this Rule;

(4) conduct initial site assessment, assembling information about the site and the nature of the release, including the following:

(a) site history and site characterization, including data on nature and estimated quantity of release and data from available sources and site investigations concerning surrounding populations, water quality, use, and approximate locations of wells, surface water bodies, and subsurface structures potentially effected by the release, subsurface soil conditions, locations of subsurface utilities, climatological conditions, and landuse;

(b) results of free product investigations and free product removal, if applicable;

(c) results of groundwater and surface water investigations, if applicable;

(d) summary of initial response and abatement actions; and submit this information in the report required under Item (5) of this Rule; and

(5) submit as required in Item (2) of this Rule, within 90 days of the discovery of the discharge or release an initial assessment and abatement report containing the site characterization information required in Item (4)

of this Rule; soil assessment information sufficient to show that remaining unsaturated soil in the side walls and at the base of the excavation does not contain contaminant levels which exceed either the "soil-to-groundwater" or the residential maximum soil contaminant concentrations established by the Department pursuant to Rule .0511 of this Section, whichever is lower; and documentation to show that neither bedrock nor groundwater was encountered in the excavation (or if groundwater was encountered, that contaminant concentrations in groundwater were equal to or less than the groundwater quality standards established in Rule .0202 of this Subchapter). If such showing is made, the discharge or release shall be classified as low risk by the Department.

History Note: *Authority G.S. 143-215.3(a)(1); 143B-282; 143-215.84; 143-215.104AA; Eff. March 1, 2016.*

15A NCAC 02L .0505 REQUIREMENTS FOR LIMITED SITE ASSESSMENT

If the required showing cannot be made by the responsible party under Rule .0504 of this Section, the responsible party shall submit within 120 days of the discovery of the discharge or release, a report as required in Rule .0504 of this Section, containing information needed by the Department to classify the level of risk to human health and the environment posed by a discharge or release under Rule .0506 of this Section. The responsible party may request an extension prior to the deadline that demonstrates to the Department that the extension would not increase the risk posed by the release. Such report shall include the following:

(1) a location map, based on a USGS topographic map, showing the radius of 1500 feet from the source area of a confirmed release or discharge and depicting all water supply wells, surface waters, and designated "wellhead protection areas" as defined in 42 U.S.C. 300h-7(e) within the 1500-foot radius. 42 U.S.C. 300h-7(e), is incorporated by reference including subsequent amendments and editions. Copies may be obtained at no cost from the U.S. Government Bookstore's website at http://www.gpo.gov/fdsys/pkg/USCODE-2010-title42/html/USCODE-2010-title42-chap6A-subchapXII-partC-sec300h-7.htm. The material is available for inspection at the Department of Environmental Quality, UST Section, 217 West Jones Street, Raleigh, NC 27603. For purposes of this Section," source area" means point of release or discharge from the non-UST petroleum source, or if the point of release cannot be determined precisely, "source area" means the area of highest contaminant concentrations;

(2) a determination of whether the source area of the discharge or release is within a designated "wellhead protection area" as defined in 42 U.S.C. 300h-7(e);

(3) if the discharge or release is in the Coastal Plain physiographic region as designated on a map entitled "Geology of North Carolina" published by the Department in 1985, a determination of whether the source area of the discharge or release is located in an area in which there is recharge to an unconfined or semi-confined deeper aquifer that is being used or may be used as a source of drinking water;

(4) a determination of whether vapors from the discharge or release pose a threat of explosion due to the accumulation of vapors in a confined space; pose a risk to public health from exposure; or pose any other serious threat to public health, public safety, or the environment;

(5) scaled site map(s) showing the location of the following that are on or adjacent to the property where the source is located:

(a) site boundaries;
(b) roads;
(c) buildings;
(d) basements;
(e) floor and storm drains;
(f) subsurface utilities;
(g) septic tanks and leach fields;
(h) underground and aboveground storage tank systems;
(i) monitoring wells;
(j) water supply wells;
(k) surface water bodies and other drainage features;
(l) borings; and
(k) the sampling points;

(6) the results from a limited site assessment that shall include the following actions:

(a) determine the presence, the lateral and vertical extent, and the maximum concentration levels of soil and, if possible, groundwater contamination and free product accumulations;

(b) install monitoring wells constructed in accordance with 15A NCAC 02C .0108, within the area of maximum soil or groundwater contamination to determine the groundwater flow direction and maximum concentrations of dissolved groundwater contaminants or accumulations of free product. During well construction, the responsible party shall collect and analyze soil samples that represent the suspected highest contaminant-level locations by exhibiting visible contamination or elevated levels of volatile organic compounds, from successive locations at five-foot depth intervals in the boreholes of each monitoring well within the unsaturated zone; collect potentiometric data from each monitoring well; and collect and analyze groundwater or measure the amount of free product, if present, in each monitoring well;

(7) the availability of public water supplies and the identification of properties served by the public water supplies within 1500 feet of the source area of a confirmed discharge or release;

(8) the land use, including zoning if applicable, within 1500 feet of the source area of a confirmed discharge or release;

(9) a discussion of site specific conditions or possible actions that may result in lowering the risk classification assigned to the release. Such discussion shall be based on information known or required to be obtained under this Item; and

(10) names and current addresses of all responsible parties for all petroleum sources for which a discharge or release is confirmed, the owner(s) of the land upon which such petroleum sources are located, and all potentially affected real property owners. Documentation of ownership of ASTs or other sources and of the property upon which a source is located shall be provided. When considering a request from a responsible party for additional time to submit the report, the Department shall consider the following:

(a) the extent to which the request for additional time is due to factors outside of the control of the responsible party;

(b) the previous history of the person submitting the report in complying with deadlines established under the Commission's rules;

(c) the technical complications associated with assessing the extent of contamination at the site or identifying potential receptors; and

(d) the necessity for action to eliminate an imminent threat to public health or the environment.

History Note: *Authority G.S. 143-215.3(a)(1); 143B-282; 143-215.84; 143-215.104AA.*
Eff. March 1, 2016.

15A NCAC 02L .0506 DISCHARGE OR RELEASE CLASSIFICATIONS

The Department shall classify the risk of each known discharge or release as high, intermediate or low risk, unless the discharge or release has been classified under Rule .0504 of this Section. For purposes of this Section:

(1) "High risk" means that:

(a) a water supply well, including one used for non-drinking purposes, has been contaminated by the release or discharge;

(b) a water supply well used for drinking water is located within 1000 feet of the source area of a confirmed discharge or release;

(c) a water supply well not used for drinking water is located within 250 feet of the source area of a confirmed discharge or release;

(d) the groundwater within 500 feet of the source area of a confirmed discharge or release has the potential for future use in that there is no source of water supply other than the groundwater;

(e) the vapors from the discharge or release pose a serious threat of explosion due to accumulation of the vapors in a confined space or pose a risk to public health from exposure; or

(f) the discharge or release poses an imminent danger to public health, public safety, or the environment.

(2) "Intermediate risk" means that:

(a) surface water is located within 500 feet of the source area of a confirmed discharge or release and the maximum groundwater contaminant concentration exceeds the applicable surface water quality standards and criteria found in 15A NCAC 02B .0200 by a factor of 10;

(b) in the Coastal Plain physiographic region as designated on a map entitled "Geology of North Carolina" published by the Department in 1985, the source area of a confirmed discharge or release is located in an area in which there is recharge to an unconfined or semi-confined deeper aquifer that the Department determines is being used or may be used as a source of drinking water;

(c) the source area of a confirmed discharge or release is within a designated wellhead protection area, as defined in 42 U.S.C. 300h-7(e);

(d) the levels of groundwater contamination for any contaminant except ethylene dibromide, benzene, and alkane and aromatic carbon fraction classes exceed 50 percent of the solubility of the contaminant at 25 degrees Celsius or 1,000 times the groundwater standard or interim standard established in Rule .0202 of this Subchapter, whichever is lower; or

(e) the levels of groundwater contamination for ethylene dibromide and benzene exceed 1,000 times the federal drinking water standard as referenced in 15A NCAC 18C .1518 is hereby incorporated by reference including subsequent amendments and editions and is available free of charge at http://reports.oah.state.nc.us/ncac/title 15a - environmental quality/chapter 18 - environmental health/subchapter c/15a ncac 18c .1518.pdf.

(3) "Low risk" means that:

(a) the risk posed does not fall within the high or intermediate risk categories; or

(b) based on review of site-specific information, limited assessment, or interim corrective actions, the Department determines that the discharge or release poses no significant risk to human health or the environment.

If the criteria for more than one risk category applies, the discharge or release shall be classified at the highest risk level identified in Rule .0507 of this Section.

History Note: *Authority G.S. 143-215.3(a)(1); 143B-282; 143-215.84; 143-215.104AA; Eff. March 1, 2016.*

15A NCAC 02L .0507 RECLASSIFICATION OF RISK LEVELS

(a) The Department may reclassify the risk posed by a release if warranted by further information concerning the potential exposure of receptors to the discharge or release or upon receipt of new information concerning changed conditions at the site. After initial classification of the discharge or release, the Department may require limited assessment, interim corrective action, or other actions that the Department believes may result in a lower risk classification. It shall be a continuing obligation of each responsible party to notify the Department of any changes that may affect the level of risk assigned to a discharge or release by the Department if the change is known or should be known by the responsible party. Such changes may include changes in zoning of real property, use of real property, or the use of groundwater that has been contaminated or is expected to be contaminated by the discharge or release.

(b) Remediation of sites with off-site migration shall be subject to the provisions of G.S. 143-215.104AA.

(c) If the risk posed by a discharge or release is determined by the Department to be high risk, the responsible party shall comply with the assessment and cleanup requirements of Rule .0106(c), (g), and (h) of this Subchapter. The goal of any required corrective action for groundwater contamination shall be restoration to the level of the groundwater standards set forth in Rule .0202 of this Subchapter, or as closely thereto as is economically and technologically feasible as determined by the Department. In any corrective action plan submitted pursuant to this Paragraph, natural attenuation may be used when the benefits of its use shall not increase the risk to the environment and human health as determined by the Department. If the responsible party demonstrates that natural attenuation prevents the further migration of the plume, the Department may approve a groundwater monitoring plan.

(d) If the risk posed by a discharge or release is determined by the Department to be an intermediate risk, the responsible party shall comply with the assessment requirements of Rule .0106(c) and (g) of this Subchapter. As part of the comprehensive site assessment, the responsible party shall evaluate, based on site specific conditions, whether the release poses a significant risk to human health or the environment. If the Department determines, based on the site-specific conditions, that the discharge or release does not pose a significant threat to human health or the environment, the site shall be reclassified as a low risk site. If the site is not reclassified, the responsible party shall, at the direction of the Department, submit a groundwater monitoring plan or a corrective action plan, or a combination thereof, meeting the cleanup standards of this Paragraph and containing the information required in Rule .0106(h) of this Subchapter. Discharges or releases that are classified as intermediate risk shall be remediated, at a minimum, to a cleanup level of 50 percent of the solubility of the contaminant at 25 degrees Celsius or 1,000 times the groundwater standard or interim standard established in Rule .0202 of

this Subchapter, whichever is lower for any groundwater contaminant except ethylene dibromide, benzene, and alkane and aromatic carbon fraction classes. Ethylene dibromide and benzene shall be remediated to a cleanup level of 1,000 times the federal drinking water standard as referenced in 15A NCAC 18C .1518 is hereby incorporated by reference including subsequent amendments and editions and is available free of charge at http://reports.oah.state.nc.us/ncac/title 15a - environmental quality/chapter 18 - environmental health/subchapter c/15a ncac 18c .1518.pdf.. Additionally, if a corrective action plan or groundwater monitoring plan is required under this Paragraph, the responsible party shall demonstrate that the groundwater cleanup levels are sufficient to prevent a violation of:

(1) the rules contained in 15A NCAC 02B;

(2) the standards contained in Rule .0202 of this Subchapter in a deep aquifer as described in Rule .0506(2)(b) of this Section; and

(3) the standards contained in Rule .0202 of this Subchapter at a location no closer than one year time of travel upgradient of a well within a designated wellhead protection area, based on travel time and the natural attenuation capacity of the subsurface materials or on a physical barrier to groundwater migration that exists or will be installed by the person making the request.

In any corrective action plan submitted pursuant to this Paragraph, natural attenuation may be used when the benefits of its use shall not increase the risk to the environment and human health and shall not increase the costs of the corrective action.

(e) If the risk posed by a discharge or release is determined by the Department to be a low risk, the Department shall notify the responsible party that no cleanup, no further cleanup, or no further action will be required by the Department, unless the Department later determines that the discharge or release poses an unacceptable risk or a potentially unacceptable risk to human health or the environment. No notification shall be issued pursuant to this Paragraph, however, until the responsible party has completed soil remediation pursuant to Rule .0508 of this Section or as closely thereto as economically or technologically feasible as determined by the Department; has submitted proof of public notification and has recorded any land-use restriction(s), if required; and paid any applicable statutorily authorized fees. The issuance by the Department of a notification under this Paragraph shall not affect any private right of action by any party that may be affected by the contamination.

History Note: *Authority G.S. 143-215.3(a)(1); 143B-282; 143-215.84; 143-215.104AA;*
Eff. March 1, 2016;
Amended Eff. March 1, 2017.

15A NCAC 02L .0508 ASSESSMENT AND REMEDIATION PROCEDURES

Assessment and remediation of soil contamination shall be addressed as follows:

(1) At the time that the Department determines the risk posed by the discharge or release, the Department shall also determine, based on site-specific information, whether the site is "residential" or "industrial/commercial." For purposes of this Section, a site is presumed residential, but may be classified as industrial/commercial if the Department determines based on site-specific information that exposure to the soil contamination is limited in time due to the use of the site and does not involve exposure to children. For purposes of this Item, "site" means both the property upon which the discharge or release has occurred and any property upon that soil has been affected by the discharge or release.

(2) The responsible party shall submit a report to the Department assessing the vertical and horizontal extent of soil contamination.

(3) For a discharge or release classified by the Department as low risk, the responsible party shall submit a report demonstrating that soil contamination has been remediated to either the residential or industrial/commercial maximum soil contaminant concentration established by the Department pursuant to Rule .0511 of this Section, whichever is applicable.

(4) For a discharge or release classified by the Department as high or intermediate risk, the responsible party shall submit a report demonstrating that soil contamination has been remediated to the lower of:

(a) the residential or industrial/commercial maximum soil contaminant concentration, whichever is applicable, that has been established by the Department pursuant to Rule .0511 of this Section; or

(b) the "soil-to-groundwater" maximum soil contaminant concentration that has been established by the Department pursuant to Rule .0511 of this Section.

History Note: *Authority G.S. 143-215.3(a)(1); 143B-282; 143-215.84; 143-215.104AA;*
Eff. March 1, 2016.

15A NCAC 02L .0509 NOTIFICATION REQUIREMENTS

(a) A responsible party who submits a corrective action plan that proposes natural attenuation or to cleanup groundwater contamination to a standard other than a standard or interim standard established in Rule .0202 of this Subchapter, or to cleanup soil other than to the standard for residential use or soil-to-groundwater contaminant concentration established pursuant to this Section, whichever is lowest, shall give notice to:

(1) the local Health Director and the chief administrative officer of each political jurisdiction in which the contamination occurs;

(2) all property owners and occupants within or contiguous to the area containing the contamination; and

(3) all property owners and occupants within or contiguous to the area where the contamination is expected to migrate.

Such notice shall describe the nature of the plan and the reasons supporting it. Notification shall be made by certified mail concurrent with the submittal of the corrective action plan. Approval of the corrective action plan by the Department shall be postponed for a period of 30 days following receipt of the request so that the Department may consider comments submitted. The responsible party shall, within 60 days, provide the Department with a copy of the notice and proof of receipt of each required notice, or of refusal by the addressee to accept delivery of a required notice. If notice by certified mail to occupants under this Paragraph is impractical, the responsible party may give notice by posting such notice in a prominent manner designed to give actual notice to the occupants. If notice is made to occupants by posting, the responsible party shall provide the Department with a copy of the posted notice and a description of the manner in which such posted notice was given.

(b) A responsible party who receives a notice pursuant to Rule .0507(d) of this Section for a discharge or release that has not been remediated to the groundwater standards or interim standards established in Rule .0202 of this Subchapter or to the lower of the residential or soil-to-groundwater contaminant concentrations established under Rule .0511 of this Section, shall, within 30 days of the receipt of such notice, provide a copy of the notice to:

(1) the local Health Director and the chief administrative officer of each political jurisdiction in which the contamination occurs;

(2) all property owners and occupants within or contiguous to the area containing contamination; and

(3) all property owners and occupants within or contiguous to the area where the contamination is expected to migrate.

Notification shall be made by certified mail. The responsible party shall, within 60 days, provide the Department with proof of receipt of the copy of the notice, or of refusal by the addressee to accept delivery of the copy of the notice. If notice by certified mail to occupants under this Paragraph is impractical, the responsible party may give notice by posting a copy of the notice in a prominent manner designed to give actual notice to the occupants. If notice is made to occupants by posting, the responsible party shall provide the Department with a description of the manner in which such posted notice was given.

History Note: *Authority G.S. 143-215.3(a)(1); 143B-282; 143-215.104AA;*
Eff. March 1, 2016.

15A NCAC 02L .0510 DEPARTMENTAL LISTING OF DISCHARGES OR RELEASES

To the extent feasible, the Department shall maintain in each of the Department's regional offices a list of all non-UST petroleum discharges or releases discovered and reported to the Department within the region.

History Note: *Authority G.S. 143-215.3(a)(1); 143B-282;*
Eff. March 1, 2016.

15A NCAC 02L .0511 ESTABLISHING MAXIMUM SOIL CONTAMINATION CONCENTRATIONS

For purposes of risk-based assessment and remediation for non-UST petroleum releases, refer to Rule .0411 of this Subchapter for establishment of maximum soil contamination concentrations.

History Note: *Authority G.S. 143-215.3(a)(1); 143B-282; 143-215.84; 143-215.104AA;*
Eff. March 1, 2016.

15A NCAC 02L .0512 ANALYTICAL PROCEDURES FOR SOIL SAMPLES

For purposes of risk-based assessment and remediation for non-UST petroleum releases, refer to Rule .0412 of this Subchapter for analytical procedures for soil samples.

History Note: *Authority G.S. 143-215.3(a)(1); 143B-282; 143-215.84; 143-215.104AA;*

Eff. March 1, 2016.

15A NCAC 02L .0513 ANALYTICAL PROCEDURES FOR GROUNDWATER SAMPLES

For purposes of risk-based assessment and remediation for non-UST petroleum releases, refer to Rule .0413 of this Subchapter for analytical procedures for groundwater samples.

History Note: *Authority G.S. 143-215.3(a)(1); 143B-282; 143-215.84; 143-215.104AA; Eff. March 1, 2016.*

15A NCAC 02L .0514 REQUIRED LABORATORY CERTIFICATION

In accordance with 15A NCAC 02H .0804, laboratories shall obtain North Carolina Division of Water Resources laboratory certification for parameters that shall be reported to the State in compliance with the State's surface water, groundwater, and pretreatment rules.

History Note: *Authority G.S. 143-215.3(a)(1); 143B-282; 143-215.84; 143-215.104AA; Eff. March 1, 2016.*

15A NCAC 02L .0515 DISCHARGES OR RELEASES FROM OTHER SOURCES

This Section shall not relieve any person responsible for assessment or cleanup of contamination from a source other than a non-UST petroleum release from its obligation to assess and clean up contamination resulting from such discharge or releases.

History Note: *Authority G.S. 143-215.3(a)(1); 143B-282; 143-215.84; 143-215.104AA; Eff. March 1, 2016.*

I/A

Doc. Ex. 757

UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF NORTH CAROLINA
WESTERN DIVISION

NO. _____

UNITED STATES OF AMERICA	)	
	)	
v.	)	MEMORANDUM OF PLEA AGREEMENT
	)	
DUKE ENERGY PROGRESS, INC.	)	

Pursuant to Rule 11(c)(1)(C) of the Federal Rules of Criminal Procedure, the United States of America, by and through the United States Attorneys for the Eastern District of North Carolina, the Middle District of North Carolina, and the Western District of North Carolina as well as the Environmental Crimes Section of the United States Department of Justice (collectively referred to herein as "the United States" or "the Government"), and the Defendant, DUKE ENERGY PROGRESS, INC., (referred to herein as "the Defendant" or "DUKE ENERGY PROGRESS") with the advice and concurrence of the Defendant's counsel, Julia S. Janson (Executive Vice-President, Secretary, and Chief Legal Officer, DUKE ENERGY PROGRESS) and James P. Cooney, III (Womble Carlyle Sandridge & Rice LLP) have agreed that the above-captioned case should be concluded in accordance with this Memorandum of Plea Agreement as follows:

1. This Memorandum constitutes the full and complete record of the Plea Agreement for criminal conduct in each of the prosecuting districts, that is, the Eastern District, Middle District, and Western District of North Carolina and as alleged in the following charging documents (hereinafter referred to collectively as the "Criminal Informations"):

United States v. Duke Energy Business Services LLC, and Duke Energy Progress, Inc., **insert case no.** (EDNC);

United States v. Duke Energy Business Services LLC, Duke Energy Carolinas, LLC, and Duke Energy Progress, Inc., **Insert Case No.** (MDNC); And

United States v. Duke Energy Business Services LLC, Duke Energy Carolinas, LLC, and Duke Energy Progress, Inc., **insert case no.** (WDNC).

Sierra Club-Kerin
Cross Exhibit-2

There are no other agreements between the parties in addition to or different from the terms herein.

2. The United States and the Defendant agree:

a. That this Plea Agreement ("Agreement") is made pursuant to Rule 11(c)(1)(C) of the Federal Rules of Criminal Procedure ("Fed. R. Crim. P.") and that the sentence set forth herein is the appropriate disposition of this case. If the Court rejects this Agreement, it is further agreed that the Defendant may withdraw its plea and all of the parties may withdraw from this Agreement.

b. The parties further acknowledge that based upon the Joint Factual Statement, a copy of which is attached hereto as Exhibit A, the Court has sufficient information in the record to enable it to meaningfully exercise its sentencing authority. Accordingly, if acceptable to the Court, the parties agree to waive the presentence investigation and report pursuant to Fed. R. Crim. P. 32(c), and to request that the Defendant be sentenced at the time the guilty plea is entered.

c. The parties further agree and acknowledge that the Defendant's parent corporation, Duke Energy Corporation, shall guarantee all monetary penalties (criminal fine, restitution, community service, and mitigation) imposed upon the Defendant and the funding and performance due from the Defendant in connection with the nationwide and statewide environmental compliance plans under this Agreement as more fully set forth in the Guaranty Agreement, a copy of which is attached hereto at Exhibit B (without attachments) and fully incorporated herein by reference. The parties further agree and acknowledge that Duke Energy Corporation shall consent to the jurisdiction of the United States District Court for the Eastern District of North Carolina for the purpose of enforcing the Guaranty Agreement.

d. Pursuant to Fed. R. Crim. P. 11(c)(1)(C), the parties agree that the following sentence is warranted in this case:

i. Criminal Fines: At the time of imposition of sentencing, the Defendant shall make a payment of Criminal Fines totaling $14.4 million ($14,400,000) as follows:

H.F. Lee Violations

(1) $3.9 million ($3,900,000) for the negligent Clean Water Act discharge in violation of the applicable NPDES permit at H.F. Lee Steam Electric Plant, a fine within the statutory penalty range of $2,500 to $25,000 per day of violation pursuant to 33 U.S.C. § 1319(c)(1)(A) and 18 U.S.C. § 3571(c) and (d).

Cape Fear Violations

(2) $3.5 million ($3,500,000) for negligent Clean Water Act failure to maintain the coal ash impoundments and related appurtenances (the riser in the 1978 coal ash impoundment) as required by the applicable NPDES permit for the Cape Fear Steam Electric Plant, a fine within the statutory penalty range of $2,500 to $25,000 per day of violation pursuant to 33 U.S.C. § 1319(c)(1)(A) and 18 U.S.C. § 3571(c) and (d).

(3) $3.5 million ($3,500,000) for negligent Clean Water Act failure to maintain the coal ash impoundments and related appurtenances (the riser in the 1985 coal ash impoundment) as required by the applicable NPDES permit for the Cape Fear Steam Electric Plant, a fine within the statutory penalty range of $2,500 to $25,000 per day of violation pursuant to 33 U.S.C. § 1319(c)(1)(A) and 18 U.S.C. § 3571(c) and (d).

Asheville Violations

(4) $3.5 million ($3,500,000) for the negligent Clean Water Act discharge in violation of the applicable NPDES permit at Asheville Steam Electric Generating Plant, a fine within the statutory penalty range of $2,500

to $25,000 per day of violation pursuant to 33 U.S.C. § 1319(c)(1)(A) and 18 U.S.C. § 3571(c) and (d).

ii. Probation: A statutory-maximum term of five (5) years of probation is warranted. 18 U.S.C. § 3561(c)(2). Probation shall include the standard conditions of probation and the following special conditions, pursuant to 18 U.S.C. § 3563(a) and (b):

(1) Compliance with the Law: The Defendant shall not commit another federal, state, or local crime during the term of probation.

(2) Cooperation with Probation Office: The Defendant shall fully cooperate with the United States Probation Office. The Defendant shall answer truthfully all inquiries by the Probation Officer; shall provide full access to any of the Defendant's operating locations; shall give ten (10) days' prior notice of any intended change in principal business or mail address; and shall provide notice of any material change in the Defendant's economic circumstances that might affect the Defendant's ability to pay the fines and other financial obligations set forth herein.

(3) Nationwide Environmental Compliance Plan: Under the terms of its plea agreement, co-defendant Duke Energy Business Services LLC ("DEBS") is required to develop, adopt, implement, and fund a comprehensive nationwide environmental compliance plan ("NECP") during its term of probation, consistent with sentencing policies set forth in USSG §8D1.4 and which incorporates all of the agreed-upon obligations set forth in Paragraph 3(u)(v) of this Agreement. The Defendant shall take all steps necessary or required to assist DEBS in meeting this obligation.

(4) Statewide Environmental Compliance Plan: The Defendant, along with its co-defendants Duke Energy Carolinas, LLC ("DEC") and DEBS, shall develop, adopt, implement, and fund a comprehensive statewide environmental compliance plan ("ECP-NC") during its term of probation, consistent with sentencing policies set forth in USSG §8D1.4 and which incorporates all of the agreed-upon obligations set forth in Paragraph 3(u)(vi) of this Agreement.

(5) Notice to Employees and Shareholders: Upon approval by the Court of the NECP and ECP-NC, the Defendant shall notify its employees of its criminal behavior, the NECP, and the ECP-NC. In addition, the Defendant shall cause a notice containing the same information to be sent to the shareholders of Duke Energy Corporation. Such notice shall be in a form prescribed by the Court-Appointed Monitor ("CAM") and at a time designated by the CAM.

(6) Community Service Payment: Pursuant to USSG §8B1.3 and in furtherance of the sentencing principles provided for under 18 U.S.C. § 3553(a), at the time of sentencing, the Defendant shall make a community service payment totaling $10.5 million ($10,500,000), through the National Fish and Wildlife Foundation ("NFWF"), to fund environmental projects, studies, and initiatives designed to benefit, preserve, and restore the riparian environment and ecosystems of North Carolina and Virginia affected by the Defendant's conduct, as set forth in Paragraph 3 (aa) of this Agreement.

(7) Mitigation: In order to compensate for impacts to wetlands and other jurisdictional waters of the United States impacted as a result of the Defendant's conduct, including temporal and secondary effects, at its facilities in North Carolina with coal ash impoundments, the Defendant shall provide $5 million ($5,000,000) to an authorized

wetlands mitigation bank or conservation trust, approved by the Court, for the purchase of riparian wetland and/or riparian land and/or restoration equivalent located in the Broad River Basin, French Broad River Basin, Cape Fear River Basin, Catawba River Basin, Dan River Basin, Yadkin-Pee Dee River Basin, Neuse River Basin, Lumber River Basin, and Roanoke River Basin as set forth in more detail in Paragraph 3(bb) of this Agreement.

iii. Payment Liability/Financial Assurances: The Defendant shall be liable for and pay all fines, restitution, community service, and mitigation payments and shall fund the NECP and ECP-NC, all as set forth herein. The Defendant shall further be liable for any additional restitution payments as determined by the CAM.

(1) Reservation of Funds by Defendant: The Defendant further shall record appropriate reserves on financial statements for the purpose of recognizing the projected obligation to retire its coal ash impoundments in North Carolina. This obligation is currently estimated at a total of $1.4 billion ($1,400,000,000) on the Defendant's balance sheet. Each year during the term of probation, beginning on the date that the Agreement is accepted by the Court and occurring by March 31 of each year thereafter, the Defendant shall cause the Chief Financial Officer of Duke Energy Corporation, as further directed under the Guaranty Agreement attached hereto, to certify to the United States and the CAM that the Defendant and Duke Energy Corporation have sufficient assets reserved to meet the obligations imposed by law or regulation or as may otherwise be necessary to fulfill the Defendant's obligations with respect to its coal ash impoundments within the State of North Carolina. If the CAM has any concerns regarding the assets available to meet obligations imposed by the Judgment

in this case, the CAM shall immediately notify the Court and the parties.

(2) Reservation of Funds by Parent Company: The Defendant further shall cause its parent holding company, Duke Energy Corporation, to record appropriate reserves on its consolidated financial statements for the purpose of recognizing the projected obligation to retire all coal ash impoundments, including those in North Carolina. This obligation is currently estimated at a total of $3.4 billion ($3,400,000,000) on Duke Energy Corporation's balance sheet for all coal ash impoundments (including those owned by the Defendant and co-defendant DEC). Each year during the term of probation, beginning on the date that the Agreement is accepted by the Court and occurring by March 31 of each year thereafter, the Defendant shall cause the Chief Financial Officer of Duke Energy Corporation, as further directed under the Guaranty Agreement attached hereto, to certify to the United States and the CAM that the Defendant and Duke Energy Corporation have sufficient assets reserved to meet the obligations imposed by law or regulation or as may otherwise be necessary to fulfill the Defendant's obligations with respect to its coal ash impoundments within the State of North Carolina. If the CAM has any concerns regarding the assets available to meet obligations imposed by the Judgment in this case, the CAM shall immediately notify the Court and the parties.

(3) Security: Through the entire term of probation, the Defendant shall further maintain unused borrowing capacity in the amount of $250 million ($250,000,000) under the Master Credit Facility as security to meet its obligations under this Agreement for the closing and remediation of coal ash impoundments, as more fully set forth in Paragraph 3(k) of this Agreement. The Defendant shall certify this set aside to

the CAM on an annual basis, or more frequently as the CAM requires. If the CAM has any concerns regarding the security available to meet the obligations imposed by the Judgment in this case, the CAM shall immediately notify the Court and the parties.

iv. Restitution for Counts of Conviction: Pursuant to 18 U.S.C. §§ 3663, 3663A, and 3563(b)(2), the Defendant shall make restitution to any victim in whatever amount the Court may order. Said restitution shall be due and payable immediately.

v. Restitution for Relevant Conduct to Be Paid During Term of Probation: Pursuant to 18 U.S.C. § 3663, the Defendant shall pay restitution as directed by the CAM through the claims process set forth in Paragraphs 3(x)(iii)-(vi) of this Agreement. Said restitution shall also include payment to the Cape Fear Public Utility Authority for all costs, whenever incurred, associated with the extension of the Flemington water line, which was necessary to ensure that the community had clean drinking water.

vi. Special Assessment: The Defendant shall pay special assessments, totaling $500.00, before or at the time of sentencing, and shall provide a receipt from the Clerk of Court for the Eastern District of North Carolina to the United States as proof of payment.

vii. Public Apology: Consistent with USSG §8D1.4(a), the Defendant and co-defendants DEBS and DEC shall place a full-page public apology in at least two national newspapers and three major North Carolina newspapers (one in Raleigh, one in Greensboro, and one in Charlotte) and on its publicly accessible company website.

3. The Defendant agrees:

a. Consent to Transfer: To consent to Rule 20 transfers for purposes of the entry of guilty pleas to the charges in the following matters:

i. United States v. Duke Energy Business Services LLC, Duke Energy Carolinas, LLC, and Duke Energy Progress, Inc., No. _____ (MDNC); and

ii. United States v. Duke Energy Business Services LLC, Duke Energy Carolinas, LLC, and Duke Energy Progress, Inc., No. _____ (WDNC).

b. Restitution for Counts of Conviction: Pursuant to 18 U.S.C. §§ 3663, 3663A, and 3562(b)(2), to make restitution in any amount as ordered by the Court and as set forth in this Agreement. Said restitution shall be due and payable immediately.

c. Restitution for Relevant Conduct to Be Paid During Term of Probation: In addition to any order of restitution in connection with the counts of conviction, to make restitution to the following entities, as determined and directed by the CAM during the term of probation and pursuant to the agreed-upon claims process set forth in Paragraphs 3(x)(iii)-(vi):

i. Local Governments with drinking water treatment systems impacted by bromide discharges from other facilities owned by the Defendant:

(1) For all costs, whenever incurred, associated with water treatment system upgrades resulting from the increase of trihalomethanes including, but not limited to, maintenance costs.

(2) All costs associated with investigating and responding to increased discharges of bromide and/or the increase of trihalomethanes.

ii. Cape Fear Public Utility Authority:

(1) For all costs, whenever incurred, associated with the extension of the Flemington water line, which was necessary to ensure that the community had clean drinking water.

d. Crime Victims' Rights Act: Except as provided herein, at the time of the execution of this

Agreement, the parties are not aware of any other victim as that term is defined by 18 U.S.C. §§ 3663, 3663A, and 3771. The Defendant understands that the United States intends to fully comply with all obligations under 18 U.S.C. § 3771, including victim notification and restitution provisions.

e. Appeal Waiver: To waive knowingly and expressly the right to appeal the conviction and whatever sentence is imposed on any ground, including any appeal pursuant to 18 U.S.C. § 3742, and further to waive any right to contest the conviction or the sentence in any post-conviction proceeding, including any proceeding under 28 U.S.C. § 2255, excepting an appeal or motion based upon grounds of ineffective assistance of counsel or prosecutorial misconduct not known to the Defendant at the time of the Defendant's guilty plea. The foregoing appeal waiver does not constitute or trigger a waiver by the United States of any of its rights to appeal provided by law.

f. Waiver of Rights to Records: To waive all rights, whether asserted directly or through a representative, to request or receive from the United States any records pertaining to the investigation or prosecution of this matter, except as provided in the Fed. R. Crim. P. This waiver includes, but is not limited to, rights conferred by the Freedom of Information Act and the Privacy Act of 1974.

g. Special Assessment: To pay a special assessment of $125.00 for each misdemeanor count pursuant to the provisions of 18 U.S.C. § 3013. The assessment shall be paid by the Defendant at sentencing. The Defendant or Defendant's counsel shall provide a check in payment of the said assessment directly to the Clerk of Court, U.S. District Court-EDNC.

h. Financial Statement: To complete and submit a financial statement under oath to the United States no later than two weeks prior to the entry of the guilty plea. The Defendant can satisfy this condition by submitting its most recent financial statement filed with the Securities and Exchange Commission.

i. Reservation of Funds by Defendant: To record appropriate reserves on financial statements for the purpose of recognizing the projected obligation to retire its coal ash impoundments in North Carolina, and, during each year during the term of probation, to certify that it has sufficient assets reserved to meet the obligations imposed by law and regulation as more fully set forth in Paragraph 2(d)(iii)(1) above. This obligation is currently estimated at a total of $1.4 billion ($1,400,000,000) on the Defendant's balance sheet.

j. Reservation of Funds by Parent Company: To cause its parent holding company, Duke Energy Corporation, to record appropriate reserves on its consolidated financial statements for the purpose of recognizing the projected obligation to retire all coal ash impoundments, including those in North Carolina, and during each year during the term of probation, to cause its parent holding company to certify that it has sufficient assets reserved to meet the obligations imposed by law and regulation as more fully set forth in Paragraph 2(d)(iii)(2) above. This obligation is currently estimated at a total of $3.4 billion ($3,400,000,000) on Duke Energy Corporation's balance sheet for all coal ash impoundments (including those owned by the Defendant and co-defendant DEC).

k. Security: Through the entire term of probation, to maintain unused borrowing capacity in the amount of $250 million ($250,000,000) under the Master Credit Facility as security to meet its obligations under this Agreement for the closing and remediation of coal ash impoundments, as more fully set forth in Paragraph 2(iii)(3) of this Agreement. A copy of the certification for 2015 shall be filed with the Court at the time of entry of this Agreement.

l. Cooperation: The Defendant shall continue to cooperate fully with the United States, and with all other authorities and agencies designated by the United States, and shall truthfully disclose all information with respect to the activities of the Defendant and its present and former directors, officers, employees, agents, consultants, contractors, and subcontractors thereof, regarding

the conduct underlying the Criminal Informations about which the Defendant has any knowledge or about which the United States shall inquire. This obligation of truthful disclosure includes the obligation of the Defendant to provide to the United States, upon request, any document, record, or other tangible evidence regarding the conduct underlying the Criminal Informations about which the United States shall inquire of the Defendant. Compliance with such cooperation requirements shall not be construed as requiring or effecting a waiver of the attorney-client privilege or work product protections.

m. Such cooperation set forth in Paragraph (l) above shall include but not be limited to: (a) promptly disclosing any and all related criminal or potentially criminal conduct of which the Defendant is currently aware; (b) promptly producing all documents requested by the federal government or by grand jury subpoena; (c) promptly making employees available to the investigation team upon request for interview or for testimony in any proceeding, subject to those employees' own legal rights; and (d) making reasonable efforts to ensure its employees provide full and truthful information.

n. If the Defendant, through its employees acting within the scope of their employment, provides false, incomplete, or misleading information or testimony, or fails to abide by any term of cooperation set forth in Paragraphs (l) and (m) above, this would constitute a material breach of this Agreement by the Defendant, and the Defendant shall be subject to prosecution for any federal criminal violation not barred by the applicable statute of limitations (or as waived pursuant to Paragraph 3(hh)) or other legal prohibition. Any information provided by the Defendant may be used against the Defendant in that prosecution.

o. Additionally, the Defendant agrees that in the event of the Defendant's material breach of this Agreement, the following are admissible against the Defendant in any prosecution or action against the Defendant: (i) any statements made by the Defendant, under oath, at the guilty plea hearing (before either a Magistrate

Judge or a District Judge); (ii) the Joint Factual Statement supporting this Agreement; and (iii) any evidence derived from such statements. This includes the prosecution of the charges that are the subject of this Agreement or any charges that the United States agreed to dismiss or not file as part of this Agreement, but later pursues because of a material breach by the Defendant. Additionally, the Defendant knowingly and voluntarily waives any argument under the United States Constitution, any statute, Rule 410 of the Federal Rules of Evidence, Fed. R. Crim. P. 11(f), and/or any other federal rule, that the statements or any evidence derived from any statements should be suppressed or are inadmissible.

p. Compliance with the Law: Except as provided otherwise herein and in Paragraph (q) below, the Defendant agrees that it shall commit no new violations of federal, state, or local law, including those laws and regulations for which primary enforcement has been delegated to state authorities, and shall conduct its operations in accordance with the environmental laws of the United States and the State of North Carolina. If the Defendant learns of any such violations committed by its agents or employees during the term of probation, the Defendant shall notify the United States of the violations in accordance with the terms of the environmental compliance plans.

i. The Defendant understands that the Government shall not consider there to be a violation of the conditions of probation if the Defendant complies with federal environmental laws when there is a direct conflict between the state and federal environmental laws.

q. The Defendant shall comply with all federal, state, and other regulations relating to coal ash, and will have no new notices of violation, notices of deficiency, or other criminal, civil, or administrative enforcement actions based on conduct (including the failure to act) occurring after entry of the guilty plea.

i. The Defendant understands that it shall be considered a violation of the conditions of

probation if the Defendant engages in the above conduct and such conduct or condition results in a final assessment (after conclusion of any appeals) in an amount greater than $5,000 and imposed after the entry of the guilty plea and which the CAM deems material. Any conduct or conditions resulting in a final assessment in an amount greater than $15,000 shall be presumed to be material.

ii. It shall not be considered a violation of probation if the enforcement action is based upon information disclosed by the Defendant in its 2014 Topographic Map and Discharge Assessment Plan(s) and/or its 2014 NDPES permit renewal application(s) for its facilities in North Carolina.

r. The Defendant shall comply with all legislative and regulatory mandates concerning closure of the coal ash impoundments which it operates, and shall complete full excavation and closure of all of the coal ash impoundments at its Sutton and Asheville facilities in accordance with federal and state laws, including the United States Environmental Protection Agency's ("EPA") 2014 final rule governing the disposal of coal combustion residuals from electric utilities ("CCR Rule") and North Carolina's Coal Ash Management Act of 2014, by the dates dictated in those laws, currently the calendar year 2019. In so doing, the Defendant shall act diligently and in good faith to meet projected critical milestones in its closure plans for each site as set forth in the following documents: Duke Energy's L.V. Sutton Electric Plant Coal Ash Excavation Plan dated November 13, 2014; and Duke Energy's Asheville Steam Electric Generating Plant Coal Ash Excavation Plan dated November 13, 2014 (collectively referred to as "Excavation Plans"), as may be amended with the approval of the North Carolina Department of Environment and Natural Resources ("DENR").

i. With respect to excavated coal ash, the removed ash shall be stored in a lined CCR landfill space or lined impoundment meeting all requirements established by applicable statute, law, and regulation, including but not limited to 40 CFR

Part 258 (Subtitle D of RCRA). Nothing in this Paragraph shall prohibit the Defendant from the disposition of ash through beneficial reuse as contemplated by the CCR Rule.

ii. Every six months, or on a more frequent basis as determined by the CAM, the Defendant shall provide the CAM with a detailed description of its efforts to excavate coal ash and close all of the coal ash impoundments at Sutton and Asheville and whether it has met the critical milestones set forth in the Excavation Plans in the time period since the last report. The Defendant shall also include the status of all permits and permit applications with any regulatory body, including but not limited to DENR. The Defendant shall also make such reports publicly available on its website.

(1) If the CAM has any concerns regarding whether the Defendant acted diligently or in good faith to meet its obligations under this provision, including the critical milestones set forth in the Excavation Plans, the CAM shall immediately notify the Court and the parties.

iii. The Defendant shall contemporaneously provide an executive summary of the report in subparagraph (ii) above to the United States Attorneys' Offices for the Eastern, Middle, and Western Districts of North Carolina; the Department of Justice - Environmental Crimes Section; the United States Environmental Protection Agency - Criminal Investigation Division; and the United States Environmental Protection Agency - Legal Counsel Division. Upon request, the Defendant shall provide the full report for inspection and review by any of the governmental parties.

(1) If the Government has any concerns regarding whether the Defendant acted diligently or in good faith to meet its obligation under this provision, including the critical milestones set forth in the Excavation Plans, the Government may elect to notify either the

CAM or the Court, and may seek additional penalties as may be appropriate.

iv. Six months prior to the end of the term of probation, the Defendant shall provide the Court, the CAM, and the Government with a full report of its efforts to excavate coal ash and to close all of the coal ash impoundments at Sutton and Asheville and the anticipated completion date.

v. The Government may seek additional fines and penalties should the Defendant fail to comply with such legislative or regulatory mandates and closure requirements under this Paragraph unless the compliance is delayed by a "force majeure" as that term is defined herein. The parties recognize that a change in law making performance impossible may be raised under the "force majeure" clause herein, but final determination shall be made by the Court.

vi. The Defendant understands that the Government shall not consider there to be a violation of the conditions of probation if the Defendant complies with federal environmental laws when there is a direct conflict between the state and federal environmental laws. The Defendant, however, shall immediately notify the Court, the CAM, and the Government of the conflict of laws and the impact on any excavation and closure plans.

s. Criminal Fine: The Defendant shall pay a total criminal fine in the amount of $14.4 million ($14,400,000), allocated as set forth in Paragraph 2(d)(i) above.

t. Stipulated Factual Basis for Fine: The Defendant stipulates that there is a factual basis for the imposition of a criminal fine in the amount of $14.4 million ($14,400,000) pursuant to 33 U.S.C. §§ 1319(c)(1)(A) and/or 18 U.S.C. § 3571(c) and (d) and that the payments made pursuant to Paragraph 2(d)(i) do not together exceed the statutory maximum fine available under each of the applicable statutes. The Defendant further waives any right to a jury or bench trial as to those payments.

u. Environmental Compliance Plans: As a special condition of probation, the Defendant shall cause, assist, and otherwise take all steps necessary to effectuate the obligation of co-defendant DEBS to develop, adopt, implement, and fund the NECP designed to ensure compliance with applicable environmental laws and regulations at all of the coal ash impoundments owned and operated (whether active or inactive) by any wholly-owned subsidiary of Duke Energy Corporation. In addition to requirements to be applied nationwide, the Defendant, along with co-defendants DEBS and DEC, shall develop, implement, and enforce the ECP-NC that also incorporates all of the requirements of the NECP. Both the NECP and the ECP-NC shall be filed with the Court as separate documents. Components of the NECP and the ECP-NC include, but are not limited to, the following:

i. Timing for Submission of NECP and ECP-NC: Defendant DUKE ENERGY PROGRESS, along with its co-defendants DEBS and DEC, shall develop and adopt the NECP and ECP-NC within seventy (70) days of the selection of the CAM. The final NECP and ECP-NC shall be submitted to the Court with copies to the United States Probation Office; the United States Attorneys' Offices for the Eastern, Middle, and Western Districts; the Department of Justice - Environmental Crimes Section; the Environmental Protection Agency - Criminal Investigation Division; and the United States Environmental Protection Agency - Legal Counsel Division. The Court must approve both the NECP and ECP-NC.

(1) The United States acknowledges that two (2) wholly-owned subsidiaries of Duke Energy Corporation, Duke Energy Commercial Enterprises, Inc. (an indirect wholly-owned subsidiary) and Duke Energy SAM, LLC (a direct wholly-owned subsidiary) have entered into a purchase and sale agreement with a subsidiary of Dynegy Inc. in which Dynegy Inc. will acquire Duke Energy Ohio's unregulated Midwest generation business (which has been classified as Discontinued Operations on the Condensed Consolidated Statement of Operations). Approval is

pending before the Federal Energy Regulatory Commission. Both of the subsidiaries handle coal ash.

(2) If the sale above has not been closed at the time of the submission of the NECP to the Court for approval, it is expressly understood and agreed that these assets need not be included within the NECP with the following exception: if the sale is not closed within ninety (90) days of the approval of the NECP by the Court, the CAM may, at his/her option, require the NECP to be amended to include these subsidiaries.

ii. Best Efforts: Defendant DUKE ENERGY PROGRESS, along with its co-defendants DEBS and DEC, shall use best efforts to comply with each and all of the obligations under both the NECP and ECP-NC.

(1) The requirement that the Defendant exercise "best efforts" to fulfill the obligation includes using commercially reasonable efforts to anticipate any potential "force majeure" event (as defined herein at Paragraph 3(y)) and to address the effects of any potential "force majeure" event: (a) as it is occurring, and (b) following the potential "force majeure" event, such that the delay is minimized to the greatest extent possible.

(2) If the CAM believes that the Defendant has not used "best efforts" to fulfill its obligations, the CAM shall provide written notice immediately to the Court and the parties.

(3) The final determination of whether the Defendant used "best efforts" shall be made by the Court with the advice of and recommendations from the CAM.

(4) If the Court concludes that the Defendant failed to exercise "best efforts" to fulfill an obligation of this Agreement, the Court may impose and the Government will be

entitled to seek additional monetary penalties.

iii. Selection and Funding of CAM:

(1) Funding: As part of the NECP and the ECP-NC, Defendant DUKE ENERGY PROGRESS, along with its co-defendants DEBS and DEC, shall pay for a CAM who will be appointed by and report to the Court during the full period of probation.

(2) Qualifications: The object of the selection process for the CAM is to select the most qualified candidate to oversee implementation of the NECP, the ECP-NC, and the bromide claims process. Therefore, the CAM must have staff, or be able to retain staff, with the following experience: (a) expertise and competence in the regulatory programs under the United States and State of North Carolina environmental laws; (b) sufficient expertise and competence to assess whether the Defendant, DEBS, and DEC have adequate management systems in place to ensure regulatory compliance, document such noncompliance, and prevent future noncompliance; and (c) sufficient expertise and competence to review claims for reimbursement under the process for identifying, verifying, and providing restitution for claims relating to bromide discharges described herein.

(3) Nomination and Veto by Government: Within thirty (30) days of the entry of the Judgment, Defendant DUKE ENERGY PROGRESS, along with its co-defendants DEBS and DEC, shall submit a list of three qualified candidates for the position of CAM from which the Court will select and appoint one of the candidates. Any nomination will include a detailed curriculum vitae or similar documentation setting forth the qualifications of the candidate. The Government shall have fifteen (15) days from the receipt of the nominations to file any

reasonable objection to any or all of the proposed candidates. If the Government lodges an objection, then Defendant DUKE ENERGY PROGRESS, along with its co-defendants DEBS and DEC, must nominate a replacement candidate(s). The Government again shall have the right to lodge any reasonable objection to any replacement candidate; and the Court may adjust the time frame for the selection of the CAM as necessary to ensure that the best possible candidate is selected.

(4) Court Selection: Upon receipt of a final list of candidates, the Court shall select one candidate as CAM by written order. In the event that the Court does not find any of the candidates satisfactory or if, during any point in the term of probation, the Court does not find the work of the selected CAM satisfactory, the Court may request Defendant DUKE ENERGY PROGRESS, along with its co-defendants DEBS and DEC, to nominate additional candidates. The Court may adjust the time frame for the nominations of the CAM as necessary to ensure that the best possible candidates are nominated.

iv. Reporting by CAM: On an annual basis, or more often as the Court directs, the CAM shall provide reports in writing to the Court, through the United States Probation Office, demonstrating compliance with the NECP and the ECP-NC by DUKE ENERGY PROGRESS and its co-defendants, DEBS and DEC. The report shall include, among other things, a detailed description of: (1) all excavation, closure, and/or proper remediation of the coal ash impoundments located in North Carolina and addressed in the ECP-NC; and (2) all three co-defendants' compliance with all appropriate environmental laws and regulations in connection with the management of their coal ash impoundments in North Carolina and elsewhere.

(1) Public Access to Information: The CAM shall ensure, and the Defendant shall facilitate, the posting of copies of any environmental

compliance audits, annual reports, and/or any other reports prepared pursuant to the NECP or ECP-NC on a company web page with public access.

- Subject to the approval of the CAM, the Defendant may redact confidential business information or any information it reasonably believes could impair the security of its operations before such audits or reports are posted for public access.

- The CAM shall inspect such proposed redactions to determine the propriety of the redactions.

- Notwithstanding the foregoing, unredacted copies shall be provided to the Court. The Defendant may seek to have the filings placed under seal to protect any information that the CAM has deemed to warrant redaction.

(2) The CAM will contemporaneously provide copies of the reports (as posted) to the United States Attorneys' Offices for the Eastern, Middle, and Western Districts of North Carolina; the Department of Justice - Environmental Crimes Section; the United States Environmental Protection Agency - Criminal Investigation Division; and the United States Environmental Protection Agency - Legal Counsel Division. If the reports contain redactions, any of these parties may inspect the redactions and challenge the propriety of the redactions. The Court shall be the final arbiter of any challenge.

v. Nationwide ECP: The NECP shall include, among other things:

(1) Organizational Funding: Co-Defendant DEBS shall maintain and fund the operation of all of the company compliance organizations created in the wake of the Dan River

release, including: ABSAT, the Coal Combustion Products organization, and the National Ash Management Advisory Board. Subject to the approval of the CAM, DEBS may transfer operations and responsibilities between internal organizations or adjust funding of such organizations as appropriate, as long as the obligations of this Agreement are being met. To the extent necessary or required, the Defendant shall fund or otherwise pay for its proportionate share of the continued maintenance and operations of these compliance organizations.

(2) Compliance Officer ("CO"): The Defendant, and its co-defendants DEBS and DEC, each shall identify or establish a position at the Vice President level or higher who will liaise directly with the CAM. The Defendant's designated CO shall have, among other duties, the primary responsibility for ensuring compliance with applicable environmental requirements and requirements of the NECP and ECP-NC.

- The COs shall submit detailed reports discussing the development, implementation, and enforcement of the NECP and ECP-NC at intervals deemed necessary by the CAM. The first report shall also include an explanation of the current corporate structure responsible for the operation and control of the coal ash impoundments and the names of the individuals filling the relevant positions. With the concurrence of the CAM, the COs may elect to submit a joint report detailing the required information for all three co-defendants. Any changes to the corporate coal ash oversight structure shall be immediately forwarded to the CAM and included in the next regular report.

- Subject to the approval of the CAM, the Defendant may redact confidential business information or any information it

reasonably believes could impair the security of its operations before such reports are posted for public access.

- The CAM shall inspect such proposed redactions to determine the propriety of the redactions.

- Notwithstanding the foregoing, unredacted copies shall be provided to the Court. The Defendant may seek to have the filings placed under seal to protect any information that the CAM has deemed to warrant redaction.

- The CAM will contemporaneously provide copies of the reports (as posted) to the United States Attorneys' Offices for the Eastern, Middle, and Western Districts of North Carolina; the Department of Justice - Environmental Crimes Section; the United States Environmental Protection Agency - Criminal Investigation Division; and the United States Environmental Protection Agency - Legal Counsel Division. If the reports contain redactions, any of these parties may inspect the redactions and challenge the propriety of the redactions. The Court shall be the final arbiter of any challenge.

(3) Environmental Audits: Within the first ninety (90) days of his or her appointment, the CAM shall establish a schedule for conducting environmental audits of each of Duke Energy Corporation's and its affiliates' wholly-owned or operated domestic facilities with Duke Energy Corporation or affiliate-managed or affiliate-controlled coal ash impoundments outside North Carolina on an annual basis.

- Each year the Defendant can request that the CAM accept any full environmental audit prepared by ABSAT or a similar organization in that same calendar year

for its facilities subject to the audits under the NECP.

- The CAM can reject any such request by the Defendant if the CAM concludes that the proposed environmental audit is not sufficiently comprehensive or not prepared by a competent organization.

- Copies of the environmental audit reports shall be posted on the Defendant's company webpage accessible to the public.

- Subject to the approval of the CAM, the Defendant may redact confidential business information or any information it reasonably believes could impair the security of its operations before such audits or reports are posted for public access.

- The CAM shall inspect such proposed redactions to determine the propriety of the redactions.

- Notwithstanding the foregoing, unredacted copies shall be provided to the Court and the United States Probation Officer. The Defendant may seek to have the filings placed under seal to protect any information that the CAM has deemed to warrant redaction.

- The CAM will contemporaneously provide copies of the reports (as posted) to the United States Attorneys' Offices for the Eastern, Middle, and Western Districts of North Carolina; the Department of Justice - Environmental Crimes Section; the United States Environmental Protection Agency - Criminal Investigation Division; and the United States Environmental Protection Agency - Legal Counsel Division. If the reports contain redactions, any of these parties may inspect the redactions to determine the propriety of the redactions.

The Court shall be the final arbiter of any challenge.

(4) Toll-Free Hotline/Electronic Mail Inbox: The Defendant, along with co-defendants DEBS and DEC, will establish and maintain a toll-free hotline that will be answered twenty-four (24) hours a day, seven (7) days a week, through which any person may report suspected violations of applicable environmental laws or regulations, or violations of the NECP or ECP-NC. The Defendant may utilize existing toll-free hotlines subject to approval by the CAM. In addition, the Defendant, along with co-defendants DEBS and DEC, shall create an electronic mail inbox accessible from its webpages and accessible through a share link, through which any employee of Duke Energy Corporation, its subsidiaries, or its affiliates, or any other person may report suspected violations of applicable environmental laws or regulations or violations of the NECP or ECP-NC.

- Co-defendant DEBS shall periodically apprise employees and the public of the availability of the toll-free hotline and electronic mail inbox by posting notices on the Internet, Intranet (known within Duke Energy Corporation as the "Portal"), by distributing notice via its electronic mail system, by providing notices in appropriate employee work areas, and by publication in community outlets.

- All reports to the toll-free hotline or electronic mail inbox of suspected violations of applicable environmental requirements, the NECP, or the ECP-NC shall promptly be provided to the appropriate CO for further action, and the appropriate CO shall maintain a record of the investigation and disposition of each such matter and disclose such matters in reports to the CAM.

(5) Environmental Training Program: The Defendant, along with co-defendants DEBS and DEC, shall adopt, implement, and enforce a comprehensive training program to educate all domestic employees of Duke Energy Corporation and its wholly-owned or operated affiliates on the environmental impact of coal ash impoundment operations and to be aware of the procedures and policies that form the basis of the NECP and ECP-NC.

- The goal of this training program is to ensure that every domestic employee of Duke Energy Corporation and its wholly-owned or operated affiliates understands applicable compliance policies and is able to integrate the compliance objectives in the performance of his/her job. The training shall include applicable notice and reporting requirements in the event of a release or discharge. Subject to the approval of the CAM, the Defendant may develop different training programs that are tailored to the employee's specific job description and responsibilities as long as the overall goal of the training requirement is met.

- Additionally, the Defendant and co-defendants DEBS and DEC shall provide training and written materials describing the safe and proper handling of pollutants, hazardous substances, and/or wastes.

- Copies of all written materials and training curricula shall be provided to the CAM.

vi. Statewide ECP: The ECP-NC, in addition to incorporating all of the requirements of the NECP, shall include, among other things, the following conditions:

(1) Point of Contact ("POC"): With respect to each of its facilities with coal ash impoundments in North Carolina, the

Defendant and co-defendant DEBS shall identify or establish a POC for the CAM within each of the following three business services: (1) ABSAT; (2) Environmental, Health & Safety; and (3) Coal Combustion Products.

(2) Environmental Audits: Within the first ninety (90) days of his/her appointment, the CAM shall establish a schedule for conducting environmental audits of each of the Defendant's facilities with coal ash impoundments in North Carolina on an annual basis.

- Each year the Defendant can request that the CAM accept any full environmental audit prepared by ABSAT or a similar organization in that same calendar year for two of its facilities subject to the audits. The Defendant cannot make the request for the same facilities in consecutive years.

- The CAM can reject any such request by the Defendant if the CAM concludes that the proposed environmental audit is not sufficiently comprehensive or not prepared by a competent organization.

- Copies of the environmental audit reports shall be posted on the Defendant's company webpage accessible to the public.

- Subject to the approval of the CAM, the Defendant may redact confidential business information or any information it reasonably believes could impair the security of its operations before such audits or reports are posted for public access.

- The CAM shall inspect such proposed redactions to determine the propriety of the redactions.

- Notwithstanding the foregoing, unredacted copies shall be provided to the Court and the United States Probation Officer. The Defendant may seek to have the filings placed under seal to protect any information that the CAM has deemed to warrant redaction.

- The CAM will contemporaneously provide copies of the reports (as posted) to the United States Attorneys' Offices for the Eastern, Middle, and Western Districts of North Carolina; the Department of Justice - Environmental Crimes Section; the United States Environmental Protection Agency - Criminal Investigation Division; and the United States Environmental Protection Agency - Legal Counsel Division. If the reports contain redactions, any of these parties may inspect the redactions to determine the propriety of the redactions. The Court shall be the final arbiter of any challenge.

v. The Defendant shall ensure that any new, expanded, or reopened coal ash or coal ash wastewater impoundment facilities are lined to ensure no unpermitted discharges of coal ash or coal ash wastewater to any water of the United States. This includes all engineered, channelized, or naturally occurring seeps.

w. Recordkeeping of Coal Ash Impoundment Volumes: Every six months, the Defendant shall determine the volume of wastewater and coal ash in each of its wet-storage coal ash impoundments in North Carolina. Additional determinations shall be made following the conclusion of activities that significantly change the volumes of materials in the impoundments, including but not limited to temporary rerouting of waste streams other than sluiced coal ash to the ash impoundment, dredging, and dewatering. Written or electronic records of the volumes shall be maintained by the Defendant in a location(s) accessible to facility staff and to any of the Defendant's employees responsible for making environmental or emergency reports.

x. Bromide Remediation Claims and Costs:

i. Identification: Within the first year of probation, or within ninety (90) days of the installation of a new Flue Gas Desulfurization ("FGD") scrubber system thereafter, the Defendant shall identify:

(1) all facilities operated by it in North Carolina that utilize or will utilize FGD scrubbers that will result in an increase in bromide discharge into surface waters; and

(2) all local governments that are downstream from such FGD scrubbers and draw water into water treatment facilities.

ii. Notification: Within the first year of probation, or within ninety (90) days of the installation of a new FGD scrubber system thereafter, the Defendant shall: (1) notify in writing the identified local governments of the increase or potential increase in bromide discharge; and (2) cooperate in studies of whether there has been or will be an impact on these water treatment facilities. The Defendant shall further advise the local government of the claims process established by the CAM, as described below. The Defendant will further note that the local government is not obligated to submit a claim through the process, is not bound by any recommendation of the CAM, and may pursue any civil and/or administrative remedies available to it. Copies of such correspondence shall be provided to the CAM, United States Probation Officer, and each of the prosecuting districts.

iii. Claims Process: The CAM shall establish a procedure by which local governments that are downstream of the Defendant's facilities with FGD scrubbers and experience increases in trihalomethanes at their water treatment facilities related to increases in bromide released by those facilities may submit evidence

of these impacts and claims for restitution stemming from these impacts.

(1) In these claims, the local governments bear the burden of proving by a preponderance of the evidence to the CAM that trihalomethanes have increased and that the Defendant's facility's discharge of bromide substantially contributed to the increase.

(2) The Defendant shall be permitted an opportunity to respond to any evidence or material submitted by local governments in this process.

(3) The CAM shall review proposed remediation actions and costs or anticipated costs associated with investigating, responding to, and remediating increased bromides and trihalomethanes for reasonableness in determining the correct amount of restitution. The CAM shall issue a written decision on every claim submitted. If the CAM determines that restitution to a local government in any amount is appropriate, the Defendant shall also reimburse the local government for costs associated with investigating and preparing its submission to the CAM, including reasonable attorneys' fees.

iv. Appeals Process: Once the written decision is issued, the Defendant or the local government may appeal the decision to the United States District Court. In such an appeal, the decision of the CAM shall be subject to a rebuttable presumption of correctness. If the Defendant unsuccessfully appeals a written decision of the CAM, the Defendant shall bear all of the costs of the appeal, including the costs of the CAM and the reasonable attorneys' fees of the local government, with the Court making the final determination of the reasonableness of such fees. If the Defendant is successful on appeal, the Defendant shall bear the costs of the CAM and the local government shall bear the costs of its attorneys' fees.

v. Payment of Claims: Once the CAM has issued its written opinion, the Defendant shall pay the approved costs to the claimant within thirty (30) days of the opinion, unless it files an appeal to the United States District Court as provided above. If, after appeal, the Court concurs with the CAM's opinion approving such costs, the Defendant shall pay the approved costs to the claimant and submit proof of payment to the Court within thirty (30) days of the Court's opinion. Nothing in this subparagraph will bar the CAM or the Court from ordering a different payment schedule as appropriate.

vi. Deadline for Filing Claims: Local governments shall have until sixty (60) days prior to the end of the five-year probationary term to submit a claim.

y. Force Majeure. For purposes of this Agreement, a "force majeure" is defined as any event arising from causes beyond the reasonable control of the Defendant, any entity controlled by the Defendant, or its contractors that delays or prevents performance of any obligation despite the best efforts to fulfill the obligation and includes but is not limited to war, terrorism, civil unrest, labor dispute, act of God, change in law making performance impossible, or act of a governmental or regulatory body delaying performance or making performance impossible, including, without limitation, any appeal or decision remanding, overturning, modifying, or otherwise acting (or failing to act) on a permit or similar permission or action that prevents or delays an action needed for the performance of any work such that it prevents or substantially interferes with the Defendant's ability to perform. Force majeure does not include financial inability to complete the work, increased cost of performance, or changes in business or economic circumstances.

i. If the Defendant seeks to rely on "force majeure" to excuse performance or timely performance with any term of this Agreement, the Defendant must apply to the CAM with copies of such application

provided to the Government and the United States Probation Officer.

ii. The final determination of "force majeure" shall be made by the Court with the advice and recommendation from the CAM.

iii. If the Court concludes that the Defendant's failure to fulfill an obligation of this Agreement was not excused by a "force majeure," the Court may impose and the Government will be entitled to seek additional monetary penalties.

z. Funding of NECP and ECP-NC: A failure to fund or implement the NECP or ECP-NC during its term of probation would constitute a breach of this Agreement by the Defendant, and the Defendant shall be subject to prosecution for any federal criminal violation not barred by the applicable statute of limitations (or as waived pursuant to Paragraph 3(hh)) or other legal prohibition. Any information provided by the Defendant may be used against the Defendant in such a prosecution.

aa. Community Service Payment: In addition to the community service payment made by co-defendant DEC, the Defendant, as guaranteed by Duke Energy Corporation and set forth in the Guaranty attached to this Agreement, shall pay $10.5 million ($10,500,000) to the National Fish and Wildlife Foundation ("NFWF"), a nonprofit organization established pursuant to 16 U.S.C. §§ 3701-3710, as community service by an organization. With respect to the work described in this Paragraph below, the Defendant shall assume no responsibilities or obligations other than making the payments described in Paragraph 3(aa)(i) below. The Defendant shall not seek any reduction in its tax obligations as a result of these community service payments nor shall the Defendant characterize, publicize, or refer to these payments as voluntary donations or contributions. Additionally, the Defendant shall not seek or take credit for any project performed using funds disbursed by NFWF pursuant to this Agreement in any related civil or administrative proceeding, including but not limited to, the Natural Resources Damages Assessment process.

i. The Defendant will make the $10.5 million ($10,500,000) payment within sixty (60) days of entry of Judgment. Payments shall be made by certified check payable to the National Fish and Wildlife Foundation and mailed to the attention of its Chief Financial Officer at 1133 15th Street, NW, Suite 1100, Washington, DC 20005, and include a reference to the case number in this proceeding; or by electronic funds transfer in accordance with written instructions to be provided to the Defendant by NFWF at the time of transfer.

ii. NFWF shall use the money it receives from the Defendant pursuant to this Agreement for the benefit, preservation, restoration, and improvement of the water resources of North Carolina and Virginia that have been impacted by the operation of coal ash storage ponds owned by the Defendant. NFWF shall conduct or fund projects in the following federal districts, in the following amounts:

(1) Eastern District of North Carolina: $3.5 million ($3,500,000);

(2) Middle District of North Carolina: $3.5 million ($3,500,000); and

(3) Western District of North Carolina: $3.5 million ($3,500,000).

iii. The projects and initiatives considered by NFWF should include, but not be limited to: monitoring, study, restoration, and preservation of fish, wildlife, and plant resources; monitoring, study, clean up, remediation, sampling, and analysis of pollution and other threats to the riparian environment and ecosystem; research, study, planning, repair, maintenance, education, and public outreach relating to the riparian environment and ecosystem; environmental education and training relating to the protection and preservation of riparian resources; and the protection and support of public drinking water systems.

iv. The projects and initiatives considered by NFWF should be focused on the following river basins or watersheds: Broad River, Cape Fear River, Catawba River, Dan River, French Broad River, Lumber River, Roanoke River, Neuse River, and Yadkin River. NFWF shall make every effort to fund at least one project and/or initiative in each of the river basins or watersheds.

v. NFWF shall consult with appropriate state resource managers in North Carolina and Virginia, as well as federal resource managers, that have statutory authority for coordination or cooperation with private entities to help identify projects and maximize the environmental benefits of such projects. Specifically, NFWF should consult with the United States Environmental Protection Agency, the United States Fish and Wildlife Service, the United States Army Corps of Engineers, the North Carolina Department of Environment and Natural Resources, the North Carolina Wildlife Resources Commission, the Virginia Department of Environmental Quality, the Virginia Department of Conservation and Recreation, and the Virginia Department of Game and Inland Fisheries. NFWF shall further consult with localities as appropriate. NFWF is not bound by any recommendations from any of the state or federal agencies, resource managers, or localities consulted.

vi. Projects shall be identified and funding obligated within five (5) years of the date of entry of Judgment in this case.

vii. In identifying and selecting projects to receive funding pursuant to this Agreement and related Judgment, NFWF shall not incur liability of any nature in connection with any act or omission, made in good faith, in the administration of the funds or otherwise pursuant to this Agreement, excepting, however, liability resulting from NFWF's gross negligence or willful misconduct. In addition, if and to the extent NFWF grants funds to or contracts with any governmental

entity to implement any project under this Agreement and related Judgment: (a) NFWF shall be deemed to act solely as an administrative agent in contracting for, granting to, and disbursing funds for any such project; and (b) NFWF shall not be deemed to incur liability of any nature in connection with the design, engineering, construction, operation, or maintenance of any such project, including, without limitation, any impact or consequences of any such project on fish, wildlife, plant, or other natural resources, personal injury, or property damage.

viii. NFWF's use of funds received pursuant to this Agreement and related Judgment shall be subject to the reporting requirements of 16 U.S.C. § 3706. In addition, NFWF shall report to the United States Probation Office and to the parties regarding the status and disposition of money it has received pursuant to this Agreement and related Judgment, on at least an annual basis, until all such money has been spent.

bb. Mitigation: Within ninety (90) days of sentencing, in order to mitigate impacts to wetlands and other jurisdictional waters of the United States impacted as a result of the Defendant's operation of coal ash impoundments and any relevant criminal conduct, including temporal and secondary effects, at its facilities in North Carolina with coal ash impoundments, and in addition to the mitigation payment made by its co-defendant DEC, the Defendant shall provide $5 million ($5,000,000), which represents its share after apportionment of a total $10 million ($10,000,000) payment, to an authorized wetlands mitigation bank for the purchase of wetland and/or riparian land and/or restoration equivalent located in the Broad River Basin, French Broad River Basin, Cape Fear River Basin, Catawba River Basin, Dan River Basin, Yadkin-Pee Dee River Basin, Neuse River Basin, Lumber River Basin, and Roanoke River Basin. This mitigation payment is in addition to, and does not replace, Duke Energy Corporation's public commitment to fund its $10 million ($10,000,000) Water Resources Fund for environmental and other philanthropic projects along lakes and rivers in the Southeast.

i. Such wetland restoration shall be made through an authorized wetlands mitigation bank with no affiliation to any current or former employee of the North Carolina Department of Environment and Natural Resources in that employee's individual capacity.

ii. The Defendant, along with its co-defendants DEBS and DEC, shall provide a list of three (3) proposed mitigation banks from which the Court will select the mitigation bank to receive the funds. If the Defendant is unable after reasonable efforts to identify one or more mitigation banks, the Defendant may substitute one or more conservation trust funds within the State of North Carolina in its proposal as long as all other conditions of this section are being met.

iii. Such property must be purchased in the State of North Carolina by the selected authorized wetlands mitigation bank or conservation trust within four (4) years from the date of entry of Judgment.

iv. Such property shall be held by and titled in the name of a third-party (with no affiliation to the Defendant or any of the Defendant's sister or parent corporations).

v. Such property shall be held in permanent conservation status for the benefit of the citizens of North Carolina.

vi. The Defendant shall ensure that the selected authorized wetlands mitigation bank or conservation trust provides a full accounting of all mitigation property purchased to the Court and the CAM and documentary evidence that the property has been placed in permanent conservation status.

cc. <u>No Credit in Civil or Administrative Proceedings</u>: The Defendant shall not seek or take credit for any fine, restitution, community service payment, mitigation payment, or funding of the environmental

compliance plan (including the costs associated with the hiring or payment of staff or consultants needed to assist the CAM) under this Agreement in any related civil or administrative proceeding, including, but not limited to, the Natural Resources Damages Assessment process.

dd. No Capitalization or Tax Deduction: The Defendant shall agree that: (1) it shall not capitalize into inventory or basis or take as a tax deduction, in the United States or elsewhere, any portion of the monetary payments (fine, restitution, community service, mitigation, or funding of the environmental compliance plans) made pursuant to this Agreement. Provided, however, that nothing in this Agreement shall bar or prevent the Defendant from appropriately capitalizing or seeking an appropriate tax deduction for restitution in connection with the remediation of bromide claims set forth in this Agreement or for costs which would have been incurred by the Defendant irrespective of the environmental compliance plans. Costs that would have been incurred irrespective of the environmental compliance plans include, by way of example only, costs for staffing and operating Central Engineering Services, ABSAT, Coal Combustion Products, or other similar organizations.

ee. No Rate Increase Based Upon Monetary Penalties: The Defendant shall not reference the burden of, or the cost associated with, compliance with the criminal fines, the restitution related to counts of conviction, the community service payments, the mitigation obligation, the costs of the clean-up in response to the February 2, 2014, release at Dan River Steam Station, and/or the funding of the environmental compliance plans in any request or application for a rate increase on customers. Provided, however, that nothing in this Agreement shall bar or prevent the Defendant from seeking appropriate recovery for restitution in connection with the remediation of bromide claims set forth in this Agreement or for costs which would have been incurred by the Defendant irrespective of the environmental compliance plans. Costs that would have been incurred irrespective of the environmental compliance plans include, by way of example only, costs for staffing and operating Central Engineering

Services, ABSAT, Coal Combustion Products, or other similar organizations.

ff. Public Apology: Consistent with USSG §8D1.4(a), and in conjunction with its co-defendants DEBS and DEC, the Defendant shall place a full-page advertisement in at least two national newspapers and three major North Carolina newspapers (one in Raleigh, one in Greensboro, and one in Charlotte) and on its publicly accessible company website. The full page advertisement shall run within five (5) days of entry of the plea. The language of the public apology must be agreed upon by each of the federal districts and is appended to this Agreement as Exhibit C.

gg. The Defendant shall not reference this Agreement, any payments pursuant hereto, or other compliance herewith in any public relations, marketing, or advertising. The Defendant shall be permitted to make required disclosures under applicable securities laws.

hh. Tolling of Statute of Limitations: To ensure compliance with the terms of the Agreement, the Defendant waives any statute of limitations as of the date of this Agreement through the full term of Defendant's probation and until all of the Defendant's obligations under this Agreement have been satisfied with regard to any conduct relating to or arising out of the conduct set forth in the Criminal Informations.

ii. The Defendant waives any claim under the Hyde Amendment, 18 U.S.C. § 3006A (Statutory Note), for attorneys' fees and other litigation expenses arising out of the investigation or prosecution of this matter.

jj. The Defendant agrees to withdraw from and not to participate in any joint defense agreement, informal or formal, in connection with the defense by any person designated as a "target" or "subject" of, or indicted for, any potential criminal charges relating to the Clean Water Act violations in North Carolina that are the subject of this Agreement and any allegations of violations of Title 18 of which the Defendant is aware or becomes aware. The Defendant

agrees to submit a written statement, signed by counsel and the appropriate corporate officer, reflecting this commitment to the United States prior to entry of this Agreement.

kk. Term of Supervised Probation: The Defendant and the Government agree that the Defendant shall be placed on organizational supervised probation for a period of five (5) years from the date of sentencing pursuant to 18 U.S.C. § 3561(c)(2) and USSG §§8D1.1 and 8D1.2.

4. The Defendant represents and/or acknowledges:

a. That the Defendant has had the assistance of an attorney in connection with the charges against it. That the attorney has carefully reviewed this Agreement with those persons designated by law and its bylaws to act on behalf of the Defendant (hereinafter referred to as "Designated Corporate Representative") and that this Agreement has been signed by a person authorized by law and the bylaws of the Defendant to execute agreements on behalf of the Defendant.

b. That its Designated Corporate Representative has reviewed and discussed the Criminal Informations filed in each of the federal districts involved in this matter with the Defendant's attorney and that the attorney has explained the Government's evidence to that Designated Corporate Representative.

c. That as a corporation, it is vicariously liable for the criminal acts of its employees acting within the scope of their employment for the benefit of the corporation.

d. That it understands that this Agreement does not provide or promise any waiver of any civil or administrative actions, sanctions, or penalties that may apply, including but not limited to: fines; penalties; claims for damages to natural resources; suspension, debarment, listing to restrict rights and opportunities of the Defendant to contract with or receive assistance, loans, and benefits from United States agencies; licensing; injunctive relief; or remedial action to comply with any applicable

regulatory requirement. The Defendant understands that this Agreement has no effect on any proceedings against any party not expressly mentioned herein, including the actual or potential criminal liability of any individuals.

e. Guaranty: That it has sought and obtained a guarantee of its obligations under this Agreement from its parent holding company, Duke Energy Corporation, a copy of which is attached hereto as Exhibit B and incorporated herein by reference. Duke Energy Corporation further consents to the jurisdiction of the United States District Court for the Eastern District of North Carolina for the purpose of enforcing the Guaranty Agreement.

f. Resolution: That it has filed with the Court prior to entry of this Agreement the original resolution from the board of directors (or equivalent written authorization as recognized by law) that gives the authority described in Paragraph 4(a) above to the Designated Corporate Representative and that authorizes such employee to execute this Agreement on behalf of the Defendant. A copy of the Resolution, attached hereto as Exhibit D, provides as follows:

i. The Defendant is a legally viable entity, authorized to plead guilty to the charges set forth in the Criminal Informations;

ii. The Defendant shall be bound by the specific terms of this Agreement;

iii. The parent corporation, Duke Energy Corporation, is authorized to guarantee all payments (criminal fine, restitution, community service, and mitigation), and funding and performance due from the Defendant in connection with its obligations under the NECP and ECP-NC under this Agreement, as set forth in the Guaranty Agreement.

iv. Any legal successor or assignee of Duke Energy Corporation shall remain liable, as the case may be, for the guarantee of the Defendant's payment obligations and the funding and performance of both the NECP and ECP-NC hereunder, and an agreement to so remain liable shall be included

by Duke Energy Corporation in the terms of any sale, acquisition, or merger.

v. Any legal successor or assignee of the Defendant shall remain liable for the Defendant's obligations in this Agreement, and an agreement to so remain liable shall be included by the Defendant in the terms of any sale, acquisition, or merger of the Defendant with or by any other entity. Subject to the requirements of this subparagraph, nothing shall prevent the Defendant from undergoing a corporate reorganization or change in form. The Defendant shall record a copy of the Judgment with the Register of Deeds in each of the counties in North Carolina in which it owns and operates facilities with coal ash impoundments. Upon written request from the Defendant made only after fulfillment of all of the conditions of this Agreement and related Judgment, the Government shall take the necessary steps through the Register of Deeds to facilitate the removal of the notice of the Judgment.

5. The Defendant understands, agrees, and admits:

a. That as to each Count of the Criminal Informations to which the Defendant is pleading guilty, the charge, code section, elements, and applicable penalties are as follows:

United States v. Duke Energy Business Services LLC, and Duke Energy Progress, Inc.,
No. _____ (EDNC)

Violations at H.F. Lee Steam Electric Plant

COUNT ONE

(1) Clean Water Act violation for the unpermitted discharge from a drainage ditch at the coal ash impoundment at the H.F. Lee Steam Electric Plant and aiding and abetting

(2) Code Sections violated: 33 U.S.C. §§ 1311, 1319(c)(1)(A), and 1342; and 18 U.S.C. § 2

(3) Offense date: No later than October 1, 2010, through December 30, 2014

(4) Elements of the Offense:

First: The Defendant did discharge a pollutant, to wit, coal ash and coal ash wastewater;

Second: from a point source;

Third: into a water of the United States;

Four: the Defendant did so in violation of a permit;

Five: the Defendant acted negligently in so doing; and

Six: the Defendant aided and abetted another in so doing.

(5) Maximum term of probation for a corporation: 5 years pursuant to 18 U.S.C. § 3561(c)(2) and USSG §8D1.2(a)(2)

(6) Minimum term of probation for a corporation: 0 years pursuant to 18 U.S.C. § 3561(c)(2) and USSG §8D1.2(a)(2)

(7) Maximum fine: Pursuant to 18 U.S.C. § 3571(c) and (d), the greater of: not less than $2,500 nor more than $25,000 per day of violation (33 U.S.C. § 1319(c)(1)(A)); $200,000.00; or twice the gross gain or loss.

(8) Restitution pursuant to 18 U.S.C. §§ 3663, 3663A, and 3563(b)(2), and as agreed to in Paragraphs 2(iv)-(v) and 3(b)-(c) above.

(9) Special assessment: $ 125.00

(10) Other penalties: Public Notice of Violation; Development of a Compliance Program; Community Service; and Remediation

Doc. Ex. 799

United States v. Duke Energy Business Services LLC, Duke Energy Carolinas, LLC, and Duke Energy Progress, Inc.,
No. _____ (MDNC)[1]

Violations at Cape Fear Steam Electric Plant

COUNT FIVE

(1) Clean Water Act violation for the failure to properly maintain the riser within the 1978 coal ash impoundment at the Cape Fear Steam Electric Plant and aiding and abetting

(2) Code Sections violated: 33 U.S.C. §§ 1319(c)(1)(A) and 1342; and 18 U.S.C. § 2

(3) Offense date: No later than January 1, 2012, through January 24, 2014

(4) Elements of the Offense:

First: The Defendant did violate a condition of its NDPES permit issued by the State of North Carolina pursuant to the Clean Water Act; to wit, the requirement to properly maintain its equipment as more fully described in the Criminal Information;

Second: the Defendant acted negligently in so doing; and

Third: the Defendant aided and abetted another in so doing.

(5) Maximum term of probation for a corporation: 5 years pursuant to 18 U.S.C. § 3561(c)(2) and USSG §8D1.2(a)(2)

(6) Minimum term of probation for a corporation:

[1] Counts One through Four are captured by the Plea Agreement in United States v. Duke Energy Carolinas, LLC, No. **insert no**

0 years pursuant to 18 U.S.C. § 3561(c)(2) and USSG §8D1.2(a)(2)

(7) Maximum fine: Pursuant to 18 U.S.C. § 3571(c) and (d), the greater of: not less than $2,500 nor more than $25,000 per day of violation (33 U.S.C. § 1319(c)(1)(A)); $200,000.00; or twice the gross gain or loss.

(8) Restitution pursuant to 18 U.S.C. §§ 3663, 3663A, and 3563(b)(2), and as agreed to in Paragraphs 2(iv)-(v) and 3(b)-(c) above.

(9) Special assessment: $ 125.00

(10) Other penalties: Public Notice of Violation; Development of a Compliance Program; Community Service; and Remediation

COUNT SIX

(1) Clean Water Act violation for the failure to properly maintain the riser within the 1985 coal ash impoundment at the Cape Fear Steam Electric Plant and aiding and abetting

(2) Code Sections violated: 33 U.S.C. §§ 1319(c)(1)(A) and 1342; and 18 U.S.C. § 2

(3) Offense date: No later than January 1, 2012, through January 24, 2014

(4) Elements of the Offense:

First: The Defendant did violate a condition of its NDPES permit issued by the State of North Carolina pursuant to the Clean Water Act; to wit, the requirement to properly maintain its equipment as more fully described in the Criminal Information;

Second: the Defendant acted negligently in so doing; and

Third: the Defendant aided and abetted another in so doing.

(5) Maximum term of probation for a corporation: 5 years pursuant to 18 U.S.C. § 3561(c)(2) and USSG §8D1.2(a)(2)

(6) Minimum term of probation for a corporation: 0 years pursuant to 18 U.S.C. 3561(c)(2) and USSG §8D1.2(a)(2)

(7) Maximum fine: Pursuant to 18 U.S.C. § 3571(c) and (d), the greater of: not less than $2,500 nor more than $25,000 per day of violation (33 U.S.C. § 1319(c)(1)); $ 200,000.00; or twice the gross gain or loss.

(8) Restitution pursuant to 18 U.S.C. §§ 3663, 3663A, and 3563(b)(2), and as agreed to in Paragraphs 2(iv)-(v) and 3(b)-(c) above.

(9) Special assessment: $ 125.00

(10) Other penalties: Public Notice of Violation; Development of a Compliance Program; Community Service; and Remediation

United States v. Duke Energy Business Services LLC, Duke Energy Carolinas, LLC, and Duke Energy Progress, Inc., No._____(WDNC)[2]

Violations at Asheville Steam Electric Generating Plant

COUNT TWO

(1) Clean Water Act violation for the unpermitted discharge from a toe drain at the coal ash impoundment at the Asheville Steam Electric Generating Plant and aiding and abetting

(2) Code Sections violated: 33 U.S.C. §§ 1311, 1319(c)(1)(A), and 1342; and 18 U.S.C. § 2

[2] Count One is captured by the Plea Agreement in United States v. Duke Energy Carolinas, LLC, No. **insert no**

(3) Offense date: No later than May 31, 2011, through December 30, 2014

(4) Elements of the Offense:

First: The Defendant did discharge a pollutant, to wit, coal ash and coal ash wastewater;

Second: from a point source;

Third: into a water of the United States;

Four: the Defendant did so in violation of a permit;

Five: the Defendant acted negligently in so doing; and

Six: the Defendant aided and abetted another in so doing.

(5) Maximum term of probation for a corporation: 5 years pursuant to 18 U.S.C. § 3561(c)(2) and USSG §8D1.2(a)(2)

(6) Minimum term of probation for a corporation: 0 years pursuant to 18 U.S.C. § 3561(c)(2) and USSG §8D1.2(a)(2)

(7) Maximum fine: Pursuant to 18 U.S.C. § 3571(c) and (d), the greater of: not less than $2,500 nor more than $25,000 per day of violation (33 U.S.C. § 1319(c)(1)(A)); $200,000.00; or twice the gross gain or loss.

(8) Restitution pursuant to 18 U.S.C. §§ 3663, 3663A, and 3563(b)(2), and as agreed to in Paragraphs 2(iv)-(v) and 3(b)-(c) above.

(9) Special assessment: $ 125.00

(10) Other penalties: Public Notice of Violation; Development of a Compliance Program; Community Service; and Remediation

Total Statutory Penalties: a maximum of 5 years of probation; a minimum fine of $10,850,000; a maximum fine of $108,500,000; and a $500.00 special assessment.

6. The United States agrees:

a. That pursuant to Fed. R. Crim. P. 11(c)(1)(C), the sentence set forth in Paragraph 2 above is warranted.

b. That it reserves the right at sentencing to present any evidence and information pursuant to 18 U.S.C. § 3661, to offer argument or rebuttal, to recommend imposition of restitution, and to respond to any motions or objections filed by the Defendant.

c. That, subject to the reservations within this Agreement, the United States shall not further prosecute the Defendant, including all predecessors, successors, and assignees of the Defendant, for conduct constituting the basis for the Criminal Informations covered by this Agreement as set forth in the Joint Factual Statement or about which the United States Attorneys' Offices for the Eastern, Middle, and Western Districts and the Department of Justice - Environmental Crimes Section were otherwise aware of as of the date of this Agreement. This Agreement shall not apply to individuals. Should the Court determine that the Defendant has breached this Agreement, the Defendant will not be entitled to withdraw its plea of guilty, and the United States may prosecute the Defendant, and any predecessors, successors, and assignees of the Defendant for conduct constituting the basis for the Criminal Informations covered by this Agreement, notwithstanding the expiration of any applicable statutes of limitations following the signing of this Agreement. In any such prosecution, the United States may use the Defendant's admissions of guilt as admissible evidence against the Defendant.

d. That it will make known to the Court at sentencing the full extent of the Defendant's cooperation.

e. Pursuant to USSG §1B1.8, that self-incriminating information provided by the Defendant pursuant to this Agreement shall not be used against the

Defendant in determining the applicable advisory Guideline range, except as provided by USSG §1B1.8 and except as stated in this Agreement. The United States may provide to the United States Probation Office any evidence concerning relevant conduct.

f. Notwithstanding the foregoing, the United States Attorneys' Offices for the Eastern, Middle, and Western Districts of North Carolina and the Department of Justice - Environmental Crimes Section further recognize that this Agreement does not provide or promise any waiver of any civil or administrative actions, sanctions, or penalties that may apply, including but not limited to: fines; penalties; claims for damages to natural resources; suspension, debarment, listing to restrict rights and opportunities of the Defendant to contract with or receive assistance, loans, and benefits from United States agencies; licensing; injunctive relief; or remedial action to comply with any applicable regulatory requirement.

(SPACE LEFT BLANK INTENTIONALLY)

Doc. Ex. 805

SO AGREED, THIS 20th DAY OF FEBRUARY, 2015.

THOMAS G. WALKER
U.S. Attorney
Eastern District of North Carolina
North Carolina

JOHN C. CRUDEN
Assistant Attorney General
Department of Justice
Environment and Natural
Resources Division

JILL WESTMORELAND ROSE
Attorney for the United States
Acting Under Authority
Conferred by 28 USC §515
Western District of North Carolina

CLIFTON T. BARRETT
Attorney for the United States
Acting Under Authority
Conferred by 28 USC §515
Middle District of North Carolina

ON BEHALF OF EACH PROSECUTING OFFICE:

BANUMATHI RANGARAJAN
Senior Litigation Counsel
Criminal Division
U.S. Attorney's Office - EDNC

LANA N. PETTUS
Senior Trial Attorney
Environmental Crimes Section
U.S. Department of Justice

SETH M. WOOD
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Appellate Division
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STEPHEN INMAN
Deputy Chief
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U.S. Attorney's Office - MDNC

ERIN C. BLONDEL
Assistant U.S. Attorney
Criminal Division
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JOANNA G. MCFADDEN
Assistant U.S. Attorney
Criminal Division
U.S. Attorney's Office - MDNC

JODI MAZER
Special Assistant U.S. Attorney
Criminal Division
U.S. Attorney's Office - EDNC

STEVEN R. KAUFMAN
Assistant U.S. Attorney
Criminal Division
U.S. Attorney's Office - WDNC

Doc. Ex. 806

SO AGREED, THIS 20 DAY OF FEBRUARY, 2015.

DUKE ENERGY PROGRESS, INC.
Defendant

BY: _____
JULIA S. JANSON
Executive Vice-President,
Chief Legal Officer, and Corporate
Secretary
DUKE ENERGY PROGRESS, INC. and
Authorized Designated Official for
DUKE ENERGY PROGRESS, INC.

_____
JAMES P. COONEY, III
Womble Carlyle Sandridge & Rice, LLP
Counsel for the Defendant

Doc. Ex. 807

The undersigned, Lynn J. Good, President and Chief Executive Officer of Duke Energy Corporation, the Guarantor, hereby acknowledges the terms and conditions of the foregoing Plea Agreement as they apply to the Guaranty set forth in Exhibit B.

SO ACKNOWLEDGED, THIS 20 DAY OF FEBRUARY, 2015.

DUKE ENERGY CORPORATION
Guarantor

BY: _____
LYNN J. GOOD
President and
Chief Executive Officer
DUKE ENERGY CORPORATION

_____
JAMES P. COONEY, III
Womble Carlyle Sandridge & Rice, LLP.
Counsel for the Guarantor

APPROVED, this _____ day of _____, 2015.

_____
UNITED STATES DISTRICT JUDGE

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Engineering for the Environment. Planning for People.™
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Doc. Ex. 30 Public Staff Wright Rebuttal (2)

THE ELM CONSULTING GROUP INTERNATIONAL LLC

ENVIRONMENTAL AUDIT IN SUPPORT OF THE COURT APPOINTED MONITOR

Asheville Steam Station
Arden, North Carolina
USA

June 2016

Final Report Issued to:

Duke Energy and the Court Appointed Monitor

Prepared By:

Advanced GeoServices Corp.
and
The Elm Consulting Group International LLC

The Elm Consulting Group International LLC

TABLE OF CONTENTS

1.0 INTRODUCTION

Advanced GeoServices Corp. (AGC) and The Elm Consulting Group International LLC (Elm) (the Audit Team) are conducting environmental compliance audits (the Audits) of certain coal ash residuals management locations owned or operated by Duke Energy Business Services LLC, Duke Energy Carolinas, LLC and Duke Energy Progress, Inc. (Duke Energy). The Audits are being conducted under the direction of Mr. Benjamin Wilson, the Court Appointed Monitor, pursuant to an Order issued by the U.S. District Court, Eastern District of North Carolina, in case numbers 5:15-CR-62-H, 5:15-CR-67-H and 5:15-CR-68-H.

The scope of the Audits is set forth in the plea agreements entered into by Duke Energy and the United States in the above cases, the Court's judgments in these cases, and a written audit scoping document agreed to by Duke Energy and the United States.

1.1 BACKGROUND INFORMATION

The subject of this report is the Audit completed at Duke Energy's Asheville Steam Station at the in Arden, NC (Asheville Facility). The Audit was conducted on March 17-18, 2016 for a total of two days on-site. The Audit Team included two senior auditors:

- Mr. Christopher Reitman, P.E. AGC — Project Director, Audit Team Leader, Sr. Subject Matter Expert
- Mr. Joseph Cotier, CPEA, Elm — Sr. Environmental Auditor

The facility was represented by:

- Mr. Paul Edinger, Risk & Compliance Assurance
- Ms. Giorgina Franklin, Manager CCP Compliance
- Mr. Matt Pickett, CCP System Owner
- Mr. Ken Tadlock, Site Safety
- Ms. Teresa Williams, Lead EHS Professional

- Ms. Mariea Keezel, Site ORC
- Ms. Crystal Diedrich, Site ORC
- Ms. Tina Woodward, Environmental Specialist
- Ms. Liz Glenn, CCP Environmental Rover
- Ms. Diana Kooser, CCP Regulatory Affairs
- Mr. John Toepfer, CCP EHS Groundwater
- Mr. Henry Duperier, CCP Closure Engineer
- Mr. Bryan Hoffman, CCP Project Engineering
- Mr. Steadman Sugg, CCP Closure Engineer
- Mr. Dan Zakary, CCP Lead Engineer
- Ms. Jana Ackerman, CCP Environmental
- Mr. Peter Coffey, CCP Engineering
- Mr. Mike Clough, CCP Closure
- Mr. Jeff Mcfee, Operations Superintendent
- Mr. Brian Weisker, CCP Ops & Maintenance

Mr. Ross Hartfield was also consulted on several issues regarding facility drainage and identification and management of seeps.

1.2 FACILITY OVERVIEW

The Asheville Facility is located at 200 CP&L Drive, Arden, North Carolina. The Operations and Maintenance Manual states the Asheville Facility is located on 786 acres on both sides of I-26. The Asheville Facility is located along the east side of the French Broad River and west of Lake Julian. Lake Julian provides cooling water for the Asheville Facility coal-fired generating units. According to overview provided by Duke Energy personnel at the opening meeting, the Asheville Facility first began power generation in 1964. Two coal-fired generating units are currently in operation at the Asheville Facility, Unit 1 (1964, 191 MW) and Unit 2 (1971, 185 MW). The Asheville Facility also operates two natural gas/fuel oil-fired combustion turbines, Units 3 and 4, which provide a total of 324 MWs. Unit 1 was operating during the Audit Team visit.

1.2.1 Ash Management Activities

The 2015 Update to the Coal Ash Excavation Plan indicates ash generated by coal combustion was placed in the following areas on-site:

- 1964 Ash Basin – This basin was first put into service in 1964 and has an impoundment area of 30 acres. It is unlined and active and receives sluiced ash/water from the facility generating units. The incoming sluice line is directed to a portion of the basin called the Rim Ditch. Water settles in the lined retention pond within the basin before being pumped to an unlined retention pond (Duck Pond) prior to pH adjustment at the Stilling Basin and ultimate discharge to the French Broad River via National Pollutant Discharge Elimination System (NPDES) outfall 001.

- 1982 Ash Basin – The 1982 Ash Basin has an impounded area of 46 acres. The basin is unlined and inactive and the remaining ash is being removed to allow development within the ash basin area. Dewatered ash is either stacked in the 1964 Ash Basin on-site, transported by truck to the Duke Energy Cliffside Steam Station ash landfill in Mooresville, NC, or transported by truck to the Waste Management R&B Landfill in Homer, Georgia. Following excavation, plans call for construction of a combined cycle unit which is projected to come on-line during 2019.

The North Carolina Coal Ash Management Act (CAMA) originally required the 1982 and 1964 Ash Basins at the Facility to be closed by December 31, 2019. However, the North Carolina Mountain Energy Act of 2015 was subsequently passed and extended the closure date to August 1, 2022. Following the removal of the ash from the 1982 Ash Basin, plans call for removal and off-site disposal of the ash in the 1964 Ash Basin.

1.2.2 Environmental Permits and Programs

The Facility operates under a variety of current environmental permits and programs, including:

- North Carolina Department of Environmental Quality (NCDEQ), formerly North Carolina Department of Environment and Natural Resources (NCDENR), issued NPDES permit No. NC0000396 on January 1, 2006. The permit expired on December 31, 2010; a renewal application was submitted to NCDEQ on June 11, 2010 with a permit application amendment submitted July 30, 2014. This amendment requested coverage for the seepage waters that had been identified at the site during 2014. NCDEQ has not yet reissued the permit or addressed the requested amendment. The permit covers outfall 001, ash pond treatment system to the French Broad River; outfall 002, once through cooling water to Lake Julian; internal outfall 004, process waters to the ash pond treatment system (which in turn discharges to outfall 001) and was initially sent to internal outfall 005, wet scrubber water was sent to outfall 001. During 2011 and 2012, outfall 001 was relocated from immediately west of the 1964 Ash Basin to a location northwest of the 1964 Ash Basin. NCDEQ (NCDENR) approved this relocation in a correspondence received on May 13, 2011. Duke Energy stated in its comments on the draft Audit Report that the wet scrubber water that went to internal outfall internal outfall 005 and then was rerouted to outfall 001 was removed from service as listed in the facility NPDES permit via letter to NCDEQ on July 22, 2015. The wet scrubber wastewater effluent was permitted in parallel to the Metropolitan Sewage District as an industrial user pretreatment under permit S-074-15. This was necessary to facilitate removal and management of ash. The Audit Team has not independently verified this information. Installation of a seep collection system near the former outfall 001 location has also been completed. The seep water collection system pumps seep water back to the ash pond treatment system.

The permit also covers stormwater discharges from outfalls SW-1, SW-2, SW-3, SW-4, SW-5 and SW-6. A facility Stormwater Pollution Prevention Plan (SWPPP) was revised in December 2015.

In accordance with NPDES permit requirements, the Facility monitors 11 separate wells for compliance with the groundwater standards. This includes two background wells.

- Two stormwater general permits issued by NCDEQ for construction activities pursuant to NCDEQ general permit #NCG010000 and the associated erosion and sedimentation plans developed and implemented by Duke Energy.

- Western North Carolina Regional Air Quality Agency (WNCRAQA)-issued Title V permit, No. 11-628-10D, effective May 15, 2013 and expired May 31, 2015. The permit renewal was submitted on August 31, 2014. Fugitive dust control was included in Section MM of the permit and reflects the WNCRAQA Code 4.0540.

- Spill Prevention, Control and Countermeasure (SPCC) Plan for the Ash Basin activities, prepared by Charah, Inc. and dated December 2015.

- Hazardous chemicals inventory reporting on Tier II for 2015.

1.2.3 Dam and Other Structural Permits and Approvals

Two active dams associated with the power generation; exist on-site the 1964 Ash Pond and the 1982 Ash Pond. The dams were grandfathered under North Carolina's Session Law 2009-390 (Senate Bill 1004, effective date January 1, 2010). Under this grandfathering, the original design of the dams is not subject to the current design standards for new construction, although modifications after the effective date may be subject to these standards.

According to the 2015 Annual Inspection Report, the 1964 Ash Basin Dam (BUNCO – 97) has a length of 2100 feet with a maximum height of 100 feet, a crest width of 12 feet and a crest elevation of about 2158 feet above mean sea level (msl), and a reported pond area of 30 acres. The dam is classified as a very large high hazard dam under North Carolina regulations. At the time of the Annual Inspection, the basin impoundment held approximately 1370 acre-feet of ash and 70 acre-feet of water in the Duck Pond and the rim ditch area and the Ash Basin had an additional storage capacity of 223 acre- feet.

According to the 2015 Annual Inspection Report, the 1982 Ash Basin Dam (BUNCO – 089) has a length of 1500 feet with a maximum height of 95 feet, a crest width of 15 feet, a crest elevation of about 2165 feet msl, and a reported pond area of 46 acres. The ash volume on January 1, 2016 was reported by Duke Energy personnel to be 907,000 tons. A portion of the ash excavated from the 1982 Ash Basin was being stored on the 1964 Ash Basin. Considerable excavation had taken place since the January 1, 2016 estimate within the 1982 Ash Basin, prior to the Facility Tour by the Audit Team, to prepare this area for the construction of a new combined cycle unit.

In accordance with annual inspections and internal inspections and analysis, Duke Energy has undertaken, or is in the process of undertaking a significant amount of upgrades to the Ash basins over the last five years. These upgrades have included vegetation removal to allow inspection of the slopes, modifications to the discharge structures, and placement of rip-rap on slopes.

2.0 AUDIT SCOPE AND SUBJECT MATTER

The Audit was completed in accordance with the court documents and the Scoping Document provided by Beveridge & Diamond. A description of the Audit scope is provided as Attachment A. The Audit included ash management activities, including aspects of generation that affected the nature of the waste streams from the point of generation into surface impoundments or ash management basins, landfills, and/or storage piles.

3.0 AUDIT FINDINGS

The following Findings were identified by the Audit Team.

3.1 SEEPAGE UNDER THE CLEAN WATER ACT

Requirement - The Clean Water Act (CWA) prohibits discharge of any pollutant into the waters of the United States except in compliance with a permit issued pursuant to the CWA under the NPDES by United States Environmental Protection Agency (EPA) or a state with an approved program. 33 U.S.C. §§ 1311(a) and 1342. NCDEQ implements an approved NPDES program in North Carolina under 15A NCAC 2H.0100 et seq. Additionally under NCGS 143-215.1(a) – unauthorized discharges are a violation.

Finding – The auditors reviewed documentation of seeps located west of the 1964 and the 1982 Ash Basins which contain pollutants and which discharge from point sources through discrete conveyances to waters of the United States. These seeps are not authorized by a current NPDES permit and therefore constitute violations of the Clean Water Act, and the NDEQ NPDES permitting program. Five seeps were identified by the Audit Team in their review of available documentation. The following is a summary of the information reviewed to support this Finding.

1. **Seeps are present at the facility** – Twenty-three areas of wetness (AOWs) were identified in the annual discharge assessment completed in June 2014. The Topographic Map with Identified Seeps figure from the Discharge Assessment Report, provided in Attachment B, shows the locations of these seeps. The December 2015 annual discharge assessment did not identify any new seeps. Many of these AOWs have been classified by Duke Energy as seeps with the potential to discharge to waters of the state in their Proposed Category of Wetness memo dated October 23, 2015. The AOWs that meet these criteria and were identified as seeps by Duke Energy are 64EO-01, 64EO-02, 64EO-03, 82EO-01, and 82EO-02.

2. **Seeps are from point sources and flow to navigable waters** – Each of the seeps identified above was investigated and classified by Duke Energy as an expression of water which flowed through "some substrate that eventually surfaces below the full pond elevation outside of a surface impoundment and above the ordinary high water mark of the nearest applicable water of the United States and that has the potential to enter waters of the United States via a discernible, confined, and discrete conveyance." The Discharge Assessment Plan for the Site dated December 30, 2014, indicates most of the seep flow paths connect to Powell Creek or French Broad River. Based on these facts, seeps do or may discharge to waters of the United States.

3. **Seeps contain pollutants** – Area of wetness data from the NPDES permit renewal amendment application dated July 30, 2014 showed exceedances of the 02L standard for boron and iron at A-01, B-01, F-01, N-01, P-01 and SD-01; additional characterizations by Duke Energy summarized in the October 23, 2015 "Proposed Categorization of Areas of Wetness" memo showed concentrations of contaminants of concern above background at AOW C-03, as well as seeps located at 64EO-1, 64EO-2, 64EO-3, 82EO-1 and 82EO-2. These seeps all appear to discharge to the French Broad River or Powell Creek with the exception of C-03 which does not have an apparent conveyance to waters of the United States.

4. **Seeps are not authorized by NPDES permit** – There is no NPDES permit authorization for the seeps that were observed and documented. Duke Energy has applied for coverage under a NPDES permit amendment for the seepage waters that had been identified at the site during 2014. NCDEQ has not yet reissued the permit or addressed the requested amendment.

Additionally, DEQ issued Duke Energy a Notice of Violation (NOV-2016-DV-0095) for unauthorized discharges of wastewater associated with the conditions described above under

NCGS 143-215.1(a) on March 4, 2016. The NOV did not specify which seeps DEQ had determined were violations.

3.2 EXCEEDANCES OF THE STATE GROUNDWATER QUALITY STANDARDS

Requirement - Title 15A of the North Carolina Administrative Code (NCAC) Subchapter 02L .0202 Groundwater Standards. The state groundwater rules establish maximum contaminant levels for groundwater at or beyond the compliance boundary for the ash basins.

Finding – Constituents were documented which exceeded the standards for CLASS GA waters, established in 15A NCAC 2L .0202, in monitoring wells located at or beyond the compliance boundary for the active Ash Basin. Based on groundwater monitoring analyses completed exceedances of the 2L standards have been identified at several locations outside of the Compliance Boundary for the Active Ash Basin. The locations of the 2L exceedances are shown on Attachment C. Nearly the entire western leading edge of the plume is identified above 2L standards. The parameters with exceedances of the 2L standards include boron, iron, manganese, pH, and total dissolved solids (TDS). The groundwater monitoring data establishes a reasonable technical certainty that CCR impacts to groundwater exist above background conditions.

3.3 SEEPAGE FROM COAL COMBUSTION RESIDUALS (CCR) UNITS

Requirement – The "Standards for the Disposal of Coal Combustion Residuals in Landfills and Surface Impoundments," 40 C.F.R. Part 257, Subpart D, include the following requirements:

- 40 C.F.R. § 257.90(d): "In the event of a release from a CCR unit, the owner or operator must immediately take all necessary measures to control the source(s) of releases so as to reduce or eliminate, to the maximum extent feasible, further releases of contaminants into the environment. The owner or operator of the CCR unit must comply with all applicable requirements in §§ 257.96, 257.97, and 257.98."

- 40 C.F.R. § 257.73(d)(2): "If a deficiency or a release is identified during the periodic assessment, the owner or operator must remedy the deficiency or release as soon as feasible and prepare documentation detailing the corrective measures taken."

- 40 C.F.R. § 257.83(b)(5): "If a deficiency or release is identified during an inspection, the owner or operator must remedy the deficiency or release as soon as feasible and prepare documentation detailing the corrective measures taken."

- 40 C.F.R. § 257.82(b): "Discharge from the CCR unit must be handled in accordance with the surface water requirements under §257.3-3."

Finding –The CCR rule does not define what constitutes a "release from a CCR unit." However, the preamble to the rule makes clear that the rule was intended to apply to both aboveground and below-ground "releases" from a CCR unit. *See* 80 Fed. Reg. 21,301, 21,399, 21,406 (Apr. 17, 2015).

The Audit Team recommended that the EPA (the agency that promulgated the CCR rule) clarify whether it intended that aboveground seeps of liquid from CCR units must be addressed as "releases" under the CCR rule. Subsequently, the U.S. Department of Justice (DOJ) provided the Court Appointed Monitor with the interpretation of DOJ and EPA that seeps from CCR units "are regulated under the 'corrective action' provisions [of the CCR rule] as 'non-groundwater releases,' irrespective of their structural impact." DOJ/EPA also opined "that a release need not be 'catastrophic' to be regulated under [these] provision[s]." Per DOJ/EPA, "[o]nce a seep is discovered, the owner or operator of an impoundment must 'immediately take all necessary measures to control the source(s) of releases so as to reduce or eliminate, to the maximum extent feasible, further releases of contaminants into the environment.' 40 C.F.R. § 257.90(d). This provision applies whether or not the seep reaches surface water (river, stream, etc.)."

DOJ/EPA also opined that, "for seeps that could impact the structural integrity of a CCR surface impoundment (such as the Duke Energy coal ash basins) or are symptomatic of a loss of structural integrity, 40 C.F.R. § 257.83(b)(5) applies." And that "if one or more seeps develop and/or reach surface water as the result of a failure to adequately design, construct, operate, or maintain an inflow design flood control system, that would be a violation of the CCR rule's 'hydrologic and hydraulic capacity requirements for CCR surface impoundments.' 40 C.F.R. § 257.82(b). If such a scenario was somehow contemplated and covered by an NPDES permit, then that seep would not be considered a violation of the CWA or the CCR rule."

With the benefit of this guidance from DOJ/EPA, the Audit Team concludes that seeps from CCR units at the Asheville Facility are "releases" under the CCR rule, and are subject to the CCR rule's corrective action provisions, if the seeps contain CCR (or CCR constituents indicating that the seeped liquid has been impacted by CCR). Seeps were documented at the Asheville Facility and were observed by the Audit Team. Data supplied by Duke Energy, and described in the first Finding above, confirmed that these seeps contain CCR constituents, and field observations also suggest that they contain CCR constituents. These seeps therefore represent a release of CCR constituents. Duke Energy had not immediately taken all necessary measures to control the sources of these releases so as to reduce or eliminate, to the maximum extent feasible, further releases of contaminants into the environment, as required by the CCR rule at 40 C.F.R. §257.90(d), including those corrective action steps necessary to comply with the applicable requirements of 40 C.F.R. §§257.96, 257.97 and 257.98.

4.0 OPEN ITEMS/POTENTIAL FINDINGS

Open items and potential findings are items identified by the Audit Team while on-site that, due to limited available information or the need for additional research, could not be determined as being in compliance or out of compliance.

4.1 SEEPAGE RELEASES TO WETLANDS

Requirement – Section 404 of the Clean Water Act requires a permit for the placement of a structure or fill into a jurisdictional area.

Open Line of Inquiry - Wetland maps were not available while the Audit Team was on-site to provide understanding of whether seeps discharged into jurisdictional areas.

4.2 CCR RELEASES TO GROUNDWATER

Requirement - The "Standards for the Disposal of Coal Combustion Residuals in Landfills and Surface Impoundments," 40 C.F.R. Part 257, Subpart D, include the following requirements:

- 40 C.F.R. § 257.90(d): "In the event of a release from a CCR unit, the owner or operator must immediately take all necessary measures to control the source(s) of releases so as to reduce or eliminate, to the maximum extent feasible, further releases of contaminants into the environment. The owner or operator of the CCR unit must comply with all applicable requirements in §§ 257.96, 257.97, and 257.98."

- 40 C.F.R. § 257.73(d)(2): "If a deficiency or a release is identified during the periodic assessment, the owner or operator must remedy the deficiency or release as soon as feasible and prepare documentation detailing the corrective measures taken."

- 40 C.F.R. § 257.83(b)(5): "If a deficiency or release is identified during an inspection, the owner or operator must remedy the deficiency or release as soon as feasible and prepare documentation detailing the corrective measures taken."

- 40 C.F.R. § 257.96(a):"[I]mmediately upon detection of a release from a CCR unit, the owner or operator must initiate an assessment of corrective measures to prevent further releases, to remediate any releases and to restore affected area to original conditions."

Open Line of Inquiry – As noted in the Findings section of this Audit, groundwater exceedances documented at the site include boron, iron, manganese, pH, and total dissolved solids (TDS). These exceedances are documented in the Comprehensive Site Assessment Report dated August 18, 2015. A detailed review of the historical groundwater information was not completed by the Audit Team to determine whether the exceedances represented a release of CCR from a CCR unit and whether the release likely continued after the October 17, 2015 effective date of CCR regulations.

5.0 AUDIT APPROACH

5.1 ON-SITE ACTIVITIES

During its time on-site, the Audit Team conducted an opening conference with facility personnel to discuss the scope of work and the plan for accomplishing necessary tasks while at the facilities. A site tour of the coal ash management and program support areas was subsequently completed. Following the tour, the Audit Team conducted a review of pertinent files, interviews with facility representatives, and verification of facility activities related to the ECPs, written programs and permits. A debrief was conducted each audit day to advise the facility representatives of audit progress, open lines of inquiry, possible audit findings, and needs for the next day. At the completion of the Audit, the Audit Team led a verbal discussion of draft Audit findings with facility representatives.

5.2 STANDARDS OF PRACTICE

The fieldwork portion of the Audit was conducted on March 17-18, 2016 with compliance reporting commencing May 14, 2015, the date of the Court's judgments. The Audit was based on:

- Physical inspections of the facility;
- Examination of selected administrative and operating records made available by facility staff at the Audit Team's request;
- Interviews and discussions with key facility management and staff; and
- Verification procedures designed to assess the facility's application of, and adherence to, terms of the Probation, environment laws and regulations and site policies and procedures. In addition, the Audit Team reviewed the facility's adherence to good management practices.

The Audit followed established audit protocols and procedures. It should be understood that the Audit consisted of evaluating a sample of practices and was conducted over a short period of time. Efforts were made toward sampling major facets of environmental performance during the period under review. This method is intended to uncover major system deficiencies and the Audit may not have identified all potential problems.

To support the overall independence of the audit process, the Audit included an auditing professional certified by the Board of Environmental, Health and Safety Auditor Certifications (BEAC). BEAC is an accredited professional certification board that issues the Certified Professional Environmental Auditor (CPEA) designation to qualified auditors. Under BEAC, auditor independence is a key criterion for the implementation of an effective third-party audit program. The Audit was implemented in accordance with the standards related to auditor independence.

The process by which the Audit was conducted was consistent with the general state of the art of environment auditing and the best professional judgment of the Audit Team. To conduct the Audit, the team implemented a formal approach, drawing on process guidance from both BEAC and the Auditing Roundtable (AR) guidance documents. Guidance documents included:

- *Standards for the Professional Practice of Environmental, Health and Safety Auditing*. Prepared by the Board of Environmental, Health and Safety Auditor Certifications, 2008.

- ISO 19011:2002 – Guidelines for Quality and/or Environmental Management Systems Auditing. Prepared by the International Organization for Standardization, 2002.

- Standard for the Design and Implementation of an Environmental, Health and Safety Audit Program. Prepared by The Auditing Roundtable, Inc., 1995.

- Minimum Criteria for the Conduct of Environmental, Health and Safety Audits, Prepared by The Auditing Roundtable, Inc.

5.3 REPRESENTATIVE SAMPLING

When confronted with a large population of data to review or equipment to inspect, auditors employed representative sampling techniques to evaluate records over the audit period requested, and as necessary, for physical inspection of some types of common equipment. The sample size for records reviews or equipment inspections required professional judgment.

The auditor's judgement considered the following:

- The outcome of the evaluation of the records sampled. If problems are found in the representative sample, more records may need to be examined to evaluate compliance status.
- Potential for or severity of non-compliance.
- The general appearance and observed practices of certain operating areas.
- Information obtained during an interview that indicates a potential problem.
- Other specific information or guidance from the CAM.
- Time available during the Audit.

Auditors also employed the following types of sampling techniques, depending upon the characteristics of a specific population:

- Random sampling – every item has an equal chance of being selected.
- Interval sampling – select every nth item, (e.g., every third manifest in chronological order as contained in facility files)
- Block sampling – auditor uses his/her judgment to select a specific block of items, (e.g., petroleum storage tank inspections from April to October).

- Stratified sampling – population is divided into groups, which are then sampled through random or judgmental techniques.

ATTACHMENT A

ATTACHMENT A

AUDIT SCOPE

A-1 GENERAL AUDIT SCOPE ITEMS

The general audit scope items included:

- Review and evaluation of documentation for maintenance and repair of structures and equipment used for coal ash disposal,

- Review and evaluation of documentation of modifications, failures, leaks, damage, disrepair and other problems at the coal ash management units,

- Review and evaluation of documentation of efforts to correct failures, leaks, damage, disrepair and other problems where they determine that employee/contractor actions were likely a primary or contributing cause to a compliance finding,

- Review and evaluation of documentation of communication of the items above within the organization,

- Review and evaluation of documentation associated with the specific environmental compliance items described below and laws, regulations, and policies associated these items and

- Review of compliance with administrative aspects and regulatory submissions related to coal ash management-specific regulations, including:

  - Coal Combustion Residuals — 40 CFR Part 257 Subpart D
  - NC Coal Ash Management Act of 2014 — NC General Statutes Chapter 130A, Article 9

More specific items which were addressed in the audits to comply with the General Audit Scope are described below.

A-2 SPECIFIC COMPLIANCE WITH THE ECP-NC

The following items related to specific ECP-NC compliance were reviewed as part of the audit:

1. Verify maintenance and sufficient funding of corporate compliance organizations (ABSAT, CCP organization, National Ash Management Advisory Board). Where a root cause of a compliance finding appears in an auditor's judgment to result from inadequate funding, the AGC/ELM audit team will identify this in the audit finding.

2. Verify timely production of satisfactory Compliance Officer (CO) reports to the CAM relating to the development, implementation, and enforcement of the ECP-NC. No auditing work is associated with this work at this time.

3. Evaluate existence and efficacy of toll-free hotline/e-mail inbox for violation reporting, including the appropriateness of the follow-up investigation and disposition of each reported matter. This requirement will be evaluated for the first year of audits and then reassessed.

4. Evaluate completion and efficacy of periodic notices (via Internet, Intranet, email, notices in employee work areas, and publication in community outlets) to employees and the public of the availability of the toll-free hotline and electronic mail inbox.

5. Evaluate training materials and curricula utilized in the mandated training program, particularly those tailored to employee's specific job descriptions, to determine whether it advances the goal of "ensuring that every domestic

employee of Duke Energy Corporation and its wholly-owned or operated affiliates understands applicable compliance policies and is able to integrate the compliance objectives in the performance of his/her job." Ensure that the subjects specifically named in the plea agreements are covered by the training (namely, notice and reporting requirements in the event of a release or discharge and the safe and proper handling of pollutants, hazardous substances and/or wastes.)

6. Evaluate whether Defendants are using "Best Efforts" to comply with the obligations under the ECP-NC. Where the Audit Team makes compliance findings, the audit team will, upon request, provide their opinion on whether this best efforts standard applies, and if so, whether best efforts have been used.

7. Verify compliance at each facility with the specific procedures and protocols set forth in the ECP-NC.

A-3 SPECIFIC COMPLIANCE WITH OTHER PROVISIONS OF THE PLEA AGREEMENT

The following items related to specific items in the Plea Agreement were reviewed as part of the audit:

1. Determine whether Defendants have opened, expanded, or reopened any coal ash or coal ash wastewater impoundment and, if so, verify that they are lined and do not allow unpermitted discharges of coal ash or coal ash wastewater to waters of the United States.

2. Verify that Defendants have determined the volume of wastewater and coal ash in each wet-storage coal ash impoundment in North Carolina as described in the plea agreements and that written or electronic records of this information is maintained in a location available to facility staff and employees responsible for making environmental or emergency reports.

3. Review citations/notices of violation/notices of deficiency related to violations of federal, state, or local law to assure that they have been properly relayed to the Court and, as appropriate under the plea agreements, determine their materiality.

4. Evaluate Defendants' efforts to close coal ash impoundments at Dan River, Riverbend, Asheville, and Sutton for legal compliance.

5. Note any observations made during the audit that cause concern regarding the assets and/or security available to the Defendants to meet the obligations imposed by the Judgment in this case.

A-4 GENERAL ENVIRONMENTAL COMPLIANCE SUBJECT AREAS

The following items related to General Environmental Compliance were reviewed as part of the audit:

1. Assess all waste streams from Duke Energy facilities with coal ash impoundments. Review Duke Energy's processes, procedures, and practices, as well as compliance with those processes, procedures, and practices, for:

    a. identifying waste streams (especially, but not limited to, waste streams with discharge points into bodies of water),
    b. identifying and communicating any modifications or changes, or potential modifications or changes, to waste streams,
    c. ensuring proper handling/disposal of waste streams,
    d. identifying, preventing, and mitigating any risks or hazards that could affect waste streams and/or the disposal of waste streams, and
    e. ensuring proper permitting for waste streams.

For Item 1.d., the Audit Team evaluated such risk/hazard issues where there were compliance findings associated with waste streams.

2. Review and evaluate documentation of:

   a. Maintenance and repair of structures and equipment related to coal ash disposal,
   b. Modification of the coal ash impoundments and related pollution prevention equipment and structures,
   c. Failures, leaks, damage, disrepair, and other problems,
   d. Communication of the information described in a-c within the organization, and
   e. Efforts to correct failures, leaks, damage, disrepair, and other problems.

3. Assess the employees responsible for inspection, maintenance, and repair of coal ash basins and related structures and equipment. The assessment included an assessment of the workloads of such employees to assure that Duke Energy's facilities are adequately staffed. These assessments were made where the Audit Team determined that employee/contractor actions were likely a primary or contributing cause to a compliance finding.

4. Review the results and recommendations of any other audits (internal or external/state mandated) and assess Duke Energy's implementation of those recommendations.

5. Review and assess Duke Energy's processes, procedures, and practices for identifying, communicating, and addressing problems and potential problems at its coal ash basins (leaks, unpermitted discharges, etc.).

6. Review and assess Duke Energy's policies, procedures, practices, and equipment for handling emergency releases from its coal Ash Basins and evaluate the personnel with duties in such situations.

7. Verify that Duke Energy is complying with its NPDES wastewater and stormwater permits, as well as other relevant environmental permits. This should include verifying Duke Energy's timely submission of permit applications, permit renewal applications, and responses to requests for additional information from the relevant regulatory authority.

8. Review and assess any actions or measures Duke Energy has undertaken to assure accountability and prevent recurrences when problems and/or failures occur (i.e. disciplinary actions, re-training, revision to policies and procedures, etc.). This review will be completed where the audit team determines that employee/contractor actions were likely a primary or contributing cause to a compliance finding.

9. Review and assess compliance with the following environmental regulations, as applicable to the management of coal ash:

a. Wastewater Discharges	40 CFR 122; 15A NCAC 2H .0100 *et seq*
b. Stormwater Discharges	40 CFR 122.26; 15A NCAC 2H .1000 *et seq;* NC General Permit (Construction) No. NCG010000
c. NC Groundwater Standards	15A NCAC 02L .0202(h)
d. Hazardous Waste Management	15A NCAC 13A .0100 to 13A .0107
e. Oil Pollution Prevention	40 CFR Part 112
f. Air Pollution (Title V)	WNCRAQA Chapt. 17 and Sect. 4.0540, and
g. Hazardous Chemicals (Tier II)	40 CFR Part 370.

Reviews also included an analysis of overall compliance and the status and security of the asset. Subsequent reviews of individual facilities will evaluate the movement towards compliance.

A–5 LIST OF PERMITS AND PROGRAMS DEEMED TO BE EITHER DIRECTLY OR INDIRECTLY IN SUPPORT OF ASH MANAGEMENT

During the audit, the Audit Team reviewed a variety of written programs developed and implemented by Duke Energy and facility staff. State-issued permits and supporting documentation relative to environmental programs and geotechnical aspects of ash basin management were also requested and reviewed.

Requested documents, pertinent to management of ash in basins, landfills, ponds, etc. were outlined in the pre-audit questionnaire for each facility and included, but were not limited to:

1. The Compliance Register developed for ETrac for the Site.

2. The Duke Energy Operations Manual for the facility.

3. A site plan, site map, or aerial photo which shows the entire facility and key features, of the facility including NPDES outfalls associated environmental monitoring locations, storage tanks, etc.

4. Most recent 2 years of maintenance, monitoring, and inspection records for each coal ash/CCR basin (just the physical inspections, not the groundwater records).

5. A "Phase 1 and Phase 2" summary of ash basin conditions prepared by an outside consultant.

6. Duke Energy's permitting plans for addressing ash impoundments and landfills at this facility.

7. Applicable pages from the Duke Energy basin-by-basin coal ash/CCR project tracking document for this facility.

8. Original basin/landfill/coal ash management unit construction records.

9. Documentation of changes to these units.

10. Coal ash unit construction permit application and approval.

11. State-issued permits and application materials for permits associated with coal ash/CCR management (including, e.g., dam permits).

12. Any currently effective state order, consent order, or similar state direction that addresses coal ash/CCR management at the site.

13. Records required to be maintained in the site's operating record under the federal CCR regulation and/or any state CCR regulatory program.

14. Records of off-site ash shipments from May 2015 forward.

15. Stormwater permit application and approval for all outfalls.

16. Industrial wastewater (NPDES/POTW) permit application and approval for all outfalls/discharges.

17. Industrial and stormwater sampling and monitoring records, and any corrective action plans (last 2 years).

18. Stormwater pollution prevention plan.

19. Landfill operating permit with maintenance and monitoring requirements.

20. Landfill leak detection and groundwater monitoring records from the last 2 years along with any workplans that describes the rationale for the monitoring system at the Site.

21. Landfill operating permit with maintenance and monitoring requirements.

22. Copies of any air permits and applications for coal ash units and ancillary operations.

23. Any testing and monitoring records completed to comply with the air permits.

24. Any notices of violations associated with the coal ash/CCR management activities received over the last 2 years.

25. Copy of SPCC Plan.

26. Community Right-to-Know

    a. Copies of lists of hazardous chemicals or MSDSs submitted;
    b. Copies of Tier I or II reports; and
    c. Copies of Form R (toxic release inventory) reports.

27. Copies of communications with employees and the public regarding availability of toll-free hotline and electronic mail inbox for reporting suspected environmental violations.

28. Management Systems:

    a. List of responsible party for each environmental activity.
    b. All environmental-related training records.
    c. All environmental policies and procedures.
    d. Organization chart.
    e. Site diagram identifying storage areas, tanks, etc.

29. Employee training records related to environmental programs and ash management policies.

ATTACHMENT B

ATTACHMENT B
Asheville Facility

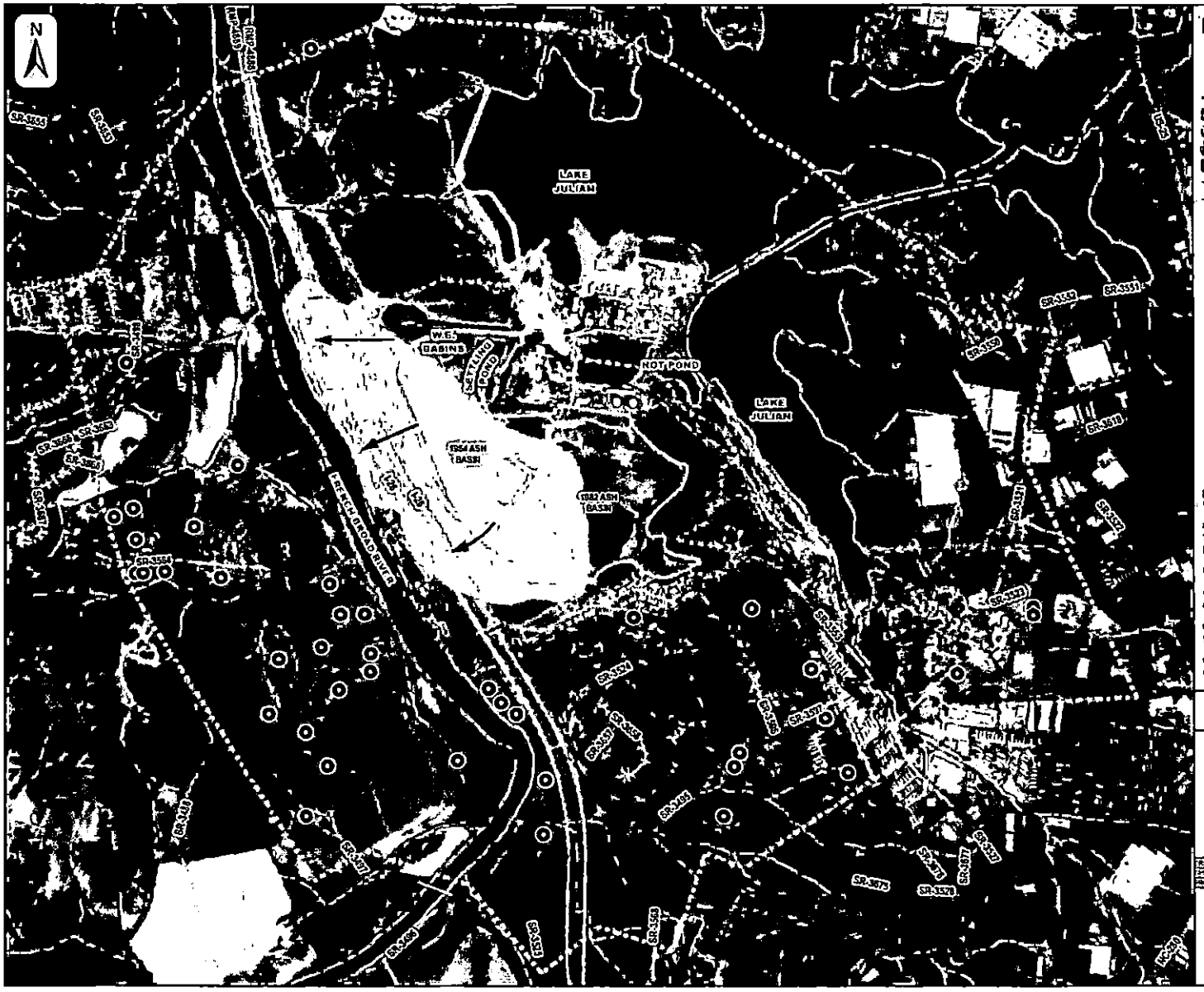
Doc. Ex. 3655

ATTACHMENT C

OFFICIAL COPY

Apr 30 2019

Doc. Ex. 2657



NOTES:

[1] FROM DRINKING WATER WELL AND RECEPTOR STUDY (APPENDIX B).

[2] BORON EXHIBITS THE GREATEST THREE-DIMENSIONAL EXTENT OF MIGRATION FROM THE ASHEVILLE STEAM ELECTRIC PLANT ASH BASIN. The NORTH CAROLINA 2L (NC2L) FOR BORON IS 700 µg/L.

[3] APRIL 17, 2014 AERIAL ORTHOPHOTOGRAPHY OBTAINED FROM WSP.

[4] 2013 AERIAL ORTHOPHOTOGRAPHY OBTAINED FROM THE NC CENTER FOR GEOGRAPHIC INFORMATION AND ANALYSIS (http://services.nconemap.gov/)

[5] PARCEL BOUNDARY WAS OBTAINED FROM THE NC CENTER FOR GEOGRAPHIC INFORMATION AND ANALYSIS. (http://services.nconemap.gov/)

[6] DRAWING HAS BEEN SET WITH A PROJECTION OF NORTH CAROLINA STATE PLANE COORDINATE SYSTEM FIPS 3200 (NAD83/2011).

FIGURE ES-1
SITE CONCEPTUAL MODEL - PLAN VIEW
ASHEVILLE STEAM ELECTRIC PLANT

12/6/2016

Duke Energy Actions to Resolve Audit Findings

Facility: Asheville Steam Station
Date of Audit: 17-18 March, 2016
Date of Final Report: 6 June, 2016

FINDING	DUKE ENERGY ACTIONS TO RESOLVE
Discharges via seeps are occurring and although Duke Energy has submitted applications to the North Carolina Department of Environmental Quality (NCDEQ) for permits under the Clean Water Act's (CWA) National Pollution Discharge Elimination System (NPDES) program, NCDEQ has not yet approved the permits, resulting in certain discharges being unauthorized under the CWA.	Duke Energy applied for permits to cover these potential discharges and continues to work with the regulator to finalize the permit. Duke Energy is expeditiously dewatering and closing basins to control, reduce or eliminate these potential discharges altogether.
Discharges via seeps constitute releases under the "Standards for the Disposal of Coal Combustion Residuals in Landfills and Surface Impoundments" rule (CCR rule).	After receiving further guidance from EPA, the auditors have concluded that seeps regulated under the CWA are not also regulated under the CCR rule. The actions described above relative to seeps under the CWA will also address this finding.
Concentrations of ash-related constituents were documented that exceeded the standards for CLASS GA waters in monitoring wells located at or beyond the compliance boundary for the Active Ash Basin.	Concentrations of ash-related constituents were documented that exceeded the standards for CLASS GA waters in monitoring wells located at or beyond the compliance boundary for the Active Ash Basin. Duke Energy is in the process of addressing groundwater impacts at Asheville under the procedures set out in the Coal Ash Management Act (CAMA), including the generation and submission to NCDEQ of a detailed Comprehensive Site Assessment and a two-part Corrective Action Plan. Duke Energy is currently engaged in the collection of additional information at the request of NCDEQ. Duke Energy and NCDEQ have entered into a settlement agreement in which they agreed that the procedures outlined in CAMA are specifically designed to address, and will address, the assessment and corrective action of alleged groundwater contamination associated with coal ash facilities at the Duke Energy sites. In combination with the specific requirements of CAMA, NCDEQ further acknowledges that this agreement fully addresses and resolves all issues related to groundwater contamination associated with coal ash facilities at the Duke Energy sites, including all groundwater violations alleged in the state enforcement actions currently pending.

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ENVIRONMENTAL AUDIT IN SUPPORT OF THE COURT APPOINTED MONITOR

L. V. Sutton Energy Complex
Wilmington, North Carolina
USA

April 2016

Final Report Issued to:

Duke Energy and the Court Appointed Monitor

Prepared By:

Advanced GeoServices Corp.
and
The Elm Consulting Group International LLC

ADVANCED GeoServices

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3.0 AUDIT FINDINGS

There were no Findings of noncompliance related to the Audit scope of work.

4.0 OPEN ITEMS/POTENTIAL FINDINGS

Open items and potential findings were items identified by the Audit Team while on-site that, due to limited available information, could not be determined as being in compliance or out of compliance.

1. Possible Exceedance of Groundwater Standards at the Compliance Boundary

Requirement – Title 15A of the North Carolina Administrative Code (NCAC) Subchapter 02L .0202 Groundwater Standards. Constituents were reported to the Division of Water Management (DWR) which exceeded the standards for CLAS GA waters, established in 15A NCAC 2L .0202 in monitoring wells located at or beyond the compliance boundary. This issue is documented in a Notice of Violation and Notice of Intent to Enforce from the NCDENR dated August 26, 2014.

Open Line of Inquiry – The groundwater conditions at the compliance boundary were not reviewed by the Audit Team.

Doc. Ex. 3663

12/6/2016

Duke Energy Actions to Resolve Audit Findings

Facility: L.V. Sutton Energy Complex
Date of Audit: 10-11 February, 2016
Date of Final Report: 14 April, 2016

FINDING	DUKE ENERGY ACTIONS TO RESOLVE
There were no findings.	None

Doc. Ex. 3664

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ENVIRONMENTAL AUDIT IN SUPPORT OF THE COURT APPOINTED MONITOR

W. H. Weatherspoon Power Plant
Lumberton, North Carolina
USA

April 2016

Final Report Issued to:

Duke Energy and the Court Appointed Monitor

Prepared By:

Advanced GeoServices Corp.
and
The Elm Consulting Group International LLC

Doc. Ex. 3665

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3.0 AUDIT FINDINGS

The following Findings were identified by the Audit Team.

1. Seepage Under the Clean Water Act

Requirement – The Clean Water Act (CWA) prohibits discharge of any pollutant into the waters of the United States except in compliance with a permit issued pursuant to the CWA under the National Pollutant Discharge Elimination System (NPDES) by EPA or a state with an approved program. 33 U.S.C. §§ 1311(a) and 1342. NCDEQ implements an approved NPDES program in North Carolina under 15A NCAC 2H.0100 *et seq.*

Finding – Surface water management features exist at the base of the Weatherspoon Ash Basin. On the east side of the Ash Basin, surface water draining off the Ash Basin drains into an unnamed tributary to the Lumber River. Attachment B is a Topographic Map with Identified Seeps and Outfalls prepared by HDR for the Site in 2014. The figure shows seep/discharge ID (also referred to as Areas of Wetness (AOWs) in the reporting developed by Duke) S-02, S-03, and S-05 are located in the eastern side of the Ash Basin. During the site walk conducted on February 8, 2016, a red-brown liquid was observed discharging from these seeps and entering the adjacent unnamed tributary on the eastern side of the Ash Basin. Pictures 1 through 4 provided in Attachment C show the eastern side of the basin and the distinctive red-brown water characteristic of the seepage from AOW S-02, S-03, and S-05. The Proposed Categorization of Areas of Wetness Memo (Preliminary – For Discussion Purpose Only, dated 23 October, 2015) indicates these seeps and each of the fifteen AOWs identified within 500 feet of the basin contain Contaminants of Concern above background concentrations. This suggests that the red-brown liquid observed at the seeps contained Contaminants of Concern derived from the Coal Ash.

On the southern and western sides of the Ash Basin surface water is directed to swales which drain through piping and swale conveyances into the cooling water pond. Toe drains which allow seepage from the Ash Basin were observed on the southern side of the basin. It is understood that these toe drains were designed to allow water from within the Ash Basin to discharge directly into the perimeter swale. Picture 5 shows a partially clogged discharge pipe on the southern side of the Ash Basin. It appeared the pipe was clogged with precipitate derived from the red-brown water seeping from the Ash Basin. Picture 9 shows this point source toe drain discharge flowing directly to the perimeter swale, which collects the water and helps direct it away from the Ash Basin. This water is conveyed to the cooling water pond. Picture 6 shows precipitate from seepage water from beneath the Ash Basin overflow. Pictures 7 and 8 show the red-brown precipitate believed to be derived from red-brown Ash Basin discharge liquid observed in the swales. These swales discharge into the cooling water pond. Although the cooling pond allows some sedimentation associated with the collected seep water, this pond discharges through an established NPDES outfall directly into the Lumber River. The NPDES permit that regulates this outfall does not authorize the discharge of seep water from the Ash Basin.

In summary, the Audit Team made the following observations at the site walk conducted on February 8, 2016:

- Multiple point source seepage discharges were observed and are documented in the area surrounding the Ash Basin. These include AOW S-02, S-03, and S-05 on the eastern side of the basin and S-10, S-11, S-12, S-13, S-14 and S-15 on the western and southern side of the Ash Basin.

- In most cases a distinctive red-brown liquid was associated with the seepage discharges from the AOWs identified above, particularly the discharges on the southern end of the basin.

- A significant build-up of a red-brown "iron-like" precipitate which was derived from this discolored liquid was also noted at the discharge end of a toe drain pipe on the southern end of the Ash Basin. This toe drain pipe was located on the southern end of the basin and appeared to facilitate drainage of impounded water discharging from the ash within the basin. The toe drain pipe did not appear to be functioning effectively because the precipitated material was partially clogging the pipe. The red-brown liquid, draining out of the Ash Basin through the toe drain pipes, was observed to enter the perimeter swale, as shown in Picture 9.

- The Proposed Categorization of Areas of Wetness Memo (Preliminary – For Discussion Purpose Only, dated 23 October, 2015) indicates each of the fifteen Areas of Wetness identified within 500 feet of the basin contain Contaminants of Concern above background concentrations.

The observations from the site walk conducted by the Audit Team, which are described above, are consistent with previous observations at the site. Photo 8 from the site walk completed on February 19-21, 2014 by Stantec, provided with the Phase 1 Report, showed a toe drain and had the caption "Toe drain clogged with material." This suggested to the Audit Team that the seepage of this red-brown liquid and the precipitation of the red-brown material from water which has been in contact with the ash is a persistent historical condition at the site.

Summary of Finding

Based on the discussion above, we conclude the following with regard to the seeps: 1) the seepage points described above represent point source discharges, 2) the seeps contain pollutants derived from the coal ash, 3) the point source discharges of seep water can reach waters of the state, either through the cooling water pond outfall or directly as the seepage water enters the unnamed tributary to the Lumber River, and 4) the seeps were not covered under the existing NPDES permit at the time of the site visit. Although Duke has submitted an application to NCDEQ for a permit to cover the seeps identified at the site, the observed discharges are currently occurring and no permit has been issued to authorize the discharges and these seeps are therefore not authorized under the Clean Water Act or the NCDEQ NPDES regulations.

2. Seepage from Coal Combustion Residuals (CCR) Units

Requirement – The "Standards for the Disposal of Coal Combustion Residuals in Landfills and Surface Impoundments," 40 C.F.R. Part 257, Subpart D, including, but not limited to, the following:

- 40 C.F.R. § 257.90(d): "In the event of a release from a CCR unit, the owner or operator must immediately take all necessary measures to control the source(s) of releases so as to reduce or eliminate, to the maximum extent feasible, further releases of contaminants into the environment. The owner or operator of the CCR unit must comply with all applicable requirements in §§ 257.96, 257.97, and 257.98."

- 40 C.F.R. § 257.73(d)(2): "If a deficiency or a release is identified during the periodic assessment, the owner or operator must remedy the deficiency or release as soon as feasible and prepare documentation detailing the corrective measures taken."

- 40 C.F.R. § 257.83(b)(5): "If a deficiency or release is identified during an inspection, the owner or operator must remedy the deficiency or release as soon as feasible and prepare documentation detailing the corrective measures taken."

- 40 C.F.R. § 257.82(b): "Discharge from the CCR unit must be handled in accordance with the surface water requirements under §257.3-3."

Finding – Having reviewed the federal CCR rule, the Audit Team found that it was not initially entirely clear from the text of the CCR rule and the CCR rule's preamble whether aboveground seeps of liquid from CCR units must be addressed as "releases" under the rule. The CCR rule does not define what constitutes a "release from a CCR unit." However, the preamble to the rule makes clear that the rule was intended to apply to both aboveground and below-ground "releases" from a CCR unit. *See* 80 Fed. Reg. 21,301, 21,399, 21,406 (Apr. 17, 2015).

The Audit Team recommended that the United States Environmental Protection Agency (EPA) (the agency that promulgated the CCR rule) clarify whether it intended that aboveground seeps of liquid from CCR units must be addressed as "releases" under the CCR rule. In the absence of guidance from EPA, the Audit Team initially considered this issue to be an Open Line of Inquiry in the Audits.

On March 22, 2016, as supplemented on March 24, 2016, after the close of the Weatherspoon Facility Audit, attorneys representing the U.S. Department of Justice (DOJ) provided the Court Appointed Monitor with the interpretation of DOJ and EPA that seeps from CCR units "are regulated under the 'corrective action' provisions [of the CCR rule] as 'non-groundwater releases,' irrespective of their structural impact." DOJ/EPA also opined "that a release need not be 'catastrophic' to be regulated under [these] provision[s]." Per DOJ/EPA, "[o]nce a seep is discovered, the owner or operator of an impoundment must 'immediately take all necessary measures to control the source(s) of releases so as to reduce or eliminate, to the maximum extent feasible, further releases of contaminants into the environment.' 40 C.F.R. § 257.90(d). This provision applies whether or not the seep reaches surface water (river, stream, etc.)."

DOJ/EPA also opined that, "for seeps that could impact the structural integrity of a CCR surface impoundment (such as the Duke Energy coal ash basins) or are symptomatic of a loss of structural integrity, 40 C.F.R. § 257.83(b)(5) applies." And that "if one or more seeps develop and/or reach surface water as the result of a failure to adequately design, construct, operate, or maintain an inflow design flood control system, that would be a violation of the CCR rule's 'hydrologic and hydraulic capacity requirements for CCR surface impoundments.' 40 C.F.R. § 257.82(b). If such a scenario was somehow contemplated and covered by an NPDES permit, then that seep would not be considered a violation of the CWA or the CCR rule."

With the benefit of this guidance from DOJ/EPA, the Audit Team concludes that seeps from CCR units at the Weatherspoon Facility are "releases" under the CCR rule, and are subject to the CCR rule's corrective action provisions, if the seeps contain CCR (or CCR constituents indicating that the seeped liquid has been impacted by CCR). Seeps were documented at the Weatherspoon Facility and were observed at the facility by the Audit Team. Data supplied by Duke confirmed that these seeps contain CCR constituents, and field observations also suggest that they contain CCR constituents. These seeps therefore represent a release of CCR

constituents. Duke had not immediately taken all necessary measures to control the sources of these releases so as to reduce or eliminate, to the maximum extent feasible, further releases of contaminants into the environment, as required by the CCR rule at 40 C.F.R. §257.90(d), including those corrective action steps necessary to comply with the applicable requirements of 40 C.F.R. §§257.96, 257.97 and 257.98.

4.0 OPEN ITEMS/POTENTIAL FINDINGS

Open items and potential findings were items identified by the Audit Team while on-site that, due to limited available information, could not be determined as being in compliance or out of compliance.

Requirement - Section 404 of the Clean Water Act requires a permit for the placement of a structure or fill into a jurisdictional area.

Finding - Wetland maps were not available to clarify whether seeps known to exist at the site discharge directly into jurisdictional areas. NCDEQ has taken the position in a recent permit issued to Duke at a different site that a seep discharging into a Section 404 jurisdictional water can be subject to NPDES permitting. In the absence of information on whether structure of fill had been placed into Clean Water Act jurisdictional areas, the Audit Team cannot conclude whether there is a violation of Section 404 of the Clean Water Act and this issue is therefore considered be an Open Item.

Doc. Ex. 3674

12/6/2016

Duke Energy Actions to Resolve Audit Findings

Facility: W.H. Weatherspoon Power Plant
Date of Audit: 8-9 February, 2016
Date of Final Report: 14 April, 2016

FINDING	DUKE ENERGY ACTIONS TO RESOLVE
Discharges via seeps are occurring and although Duke Energy has submitted applications to North Carolina Department of Environmental Quality (NCDEQ) for permits under the Clean Water Act's (CWA) National Pollution Discharge Elimination System (NPDES) program, NCDEQ has not yet approved the permits, resulting in certain discharges being unauthorized under the CWA.	NCDEQ has acted on Duke Energy's NPDES permit application for the Station, and issued a draft permit for public comment on September 19, 2016. Duke Energy anticipates that the permit will be issued in final shortly after DEQ has the opportunity to receive and review public comments.
Discharges via seeps constitute releases under the "Standards for the Disposal of Coal Combustion Residuals in Landfills and Surface Impoundments" rule (CCR rule).	After receiving further guidance from EPA, the auditors have concluded that seeps regulated under the CWA are not also regulated under the CCR rule. The actions described above relative to seeps under the CWA will also address this finding.

Doc. Ex. 3675

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ENVIRONMENTAL AUDIT IN SUPPORT OF THE COURT APPOINTED MONITOR

Cape Fear Generating Station
Moncure, North Carolina
USA

October 2016

Final Report Issued To:

Duke Energy and the Court Appointed Monitor

Prepared By:

Advanced GeoServices Corp.
and
The Elm Consulting Group International LLC

Doc. Ex. 3676

THE ELM CONSULTING GROUP INTERNATIONAL LLC

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3.0 AUDIT FINDINGS

The following Findings were identified by the Audit Team.

3.1 CWA SEEPAGE

Requirement – The Clean Water Act (CWA) prohibits the discharge of any pollutant into the waters of the United States except in compliance with a permit issued pursuant to the CWA by the Environmental Protection Agency (EPA) or a state with an approved program. 33 U.S.C. §§ 1311(a) and 1342. NCDEQ implements an approved NPDES program in North Carolina under 15A NCAC 2H.0100 et seq. Additionally, under N.C.G.S.A. § 143-215.1(a), unauthorized discharges are a violation.

Finding – The Audit Team observed seeps at the Cape Fear Facility that discharge from point sources through discrete conveyances and discharge to waters of the United States. Documentation of these seeps collected by Duke Energy showed they contain pollutants related to CCR stored in the 1963 Ash Basin, the 1970 Ash Basin, the 1978 Ash Basin, and the 1985 Ash Basin. While Duke Energy has requested that these seeps be included in its pending NPDES permit renewal application, some of these discharges are not currently authorized by a NPDES permit and therefore constitute instances of noncompliance with the CWA, the NCDEQ NPDES program, and N.C.G.S.A. § 143-215.1(a).

The following is a summary of the information which supports this Finding:

1. **Seeps are present at the facility** – AOWs S-01 through S-17 were identified in the Discharge Assessment Plan (DAP) prepared by Duke Energy and dated December 30, 2014. AOW S-18 was reported by Duke Energy to the NCDEQ on August 3, 2016. The locations of the AOWs are shown on the figure provided as Attachment B-1 and the coordinates are provided on the table below.