

INFORMATION SHEET

PRESIDING: Chair Mitchell; Commissioners Brown-Bland, Gray and Clodfelter
PLACE: Raleigh, NC
DATE: Tuesday, September 24, 2019
TIME: 9:30 a.m. – 11:33 a.m.
DOCKET NO.: E-22, Sub 562 and E-22, Sub 566
COMPANY: Virginia Electric and Power Company, d/b/a Dominion Energy North Carolina
DESCRIPTION: Application of for an Adjustment of Rates and Charges Applicable to Service in North Carolina and Petition for an Accounting Order to Defer Certain Capital and Operating Costs Associated with Greenville County Combined Cycle Addition.
VOLUME: 7

APPEARANCES

FOR VIRGINIA ELECTRIC and POWER COMPANY, d/b/a DOMINION ENERGY NORTH CAROLINA:

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Mary Lynne Grigg, Esq.
Andrea Kells, Esq.
Horace P. Payne, Esq.

FOR CAROLINA INDUSTRIAL GROUP FOR FAIR UTILITY RATES I:

Warren K. Hicks, Esq.

FOR NUCOR STEEL-HERTFORD:

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FOR THE USING AND CONSUMING PUBLIC, THE STATE AND ITS CITIZENS:

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Margaret A. Force, Esq.
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FOR THE USING AND CONSUMING PUBLIC:

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Layla Cummings, Esq.
Gina Holt, Esq.

FILED

SEP 30 2019

WITNESSES

See Attached

Clerk's Office
N.C. Utilities Commission

EXHIBITS

See Attached

EMAIL DISTRIBUTION

COPIES ORDERED BY: Drooz, Edmondson, Fennell, Cummings and Holt, Harrod, Force,
Townsend, Grigg, Kells, and Eason

REPORTED BY: Joann Bunze

DATE FILED: September 30, 2019

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PLACE: Dobbs Building, Raleigh, North Carolina

DATE: Wednesday, September 25, 2019

TIME: 9:30 a.m. - 11:33 a.m.

DOCKET NO.: E-22, Sub 562 and E-22, Sub 566

BEFORE: Chair Charlotte A. Mitchell, Presiding

Commissioner ToNola D. Brown-Bland

Commissioner Lyons Gray

Commissioner Daniel G. Clodfelter

IN THE MATTER OF:

Application of Virginia Electric and Power Company

d/b/a Dominion Energy North Carolina,

for Adjustment of Rates and Charges Applicable to

Electric Service in North Carolina

and

Petition of Virginia Electric and Power Company,

d/b/a Dominion Energy North Carolina,

for an Accounting Order to Defer Certain Capital and

Operating Costs Associated with Greenville County

Combined Cycle Addition

VOLUME: 7



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15 Layla Cummings, Esq.

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17 Public Staff - North Carolina Utilities Commission

18 4326 Mail Service Center

19 Raleigh, North Carolina 27699-4300

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T A B L E O F C O N T E N T S

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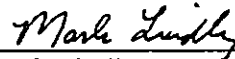
E X H I B I T S

IDENTIFIED/ADMITTED

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Dominion Energy North Carolina
2019 NC Base Case – Docket No. E-22, Sub 562
Public Staff
Data Request No. 95

The following response to Question No. 2 of Public Staff Data Request No. 95, dated June 12, 2019 has been prepared under my supervision.



Mark Lindley
Director-Accounting
Dominion Energy Services

Question No. 2:

Please provide a listing of all items of CCR cost that have been spent from January 2015 through the most recent date available in full or partial settlement of the ARO liability that, in the absence of the GAAP/FERC ARO or any other special regulatory deferral requirements, would have presumably been capitalized as assets in the normal course of business and depreciated over the period of time they were expected to be in use. For each such expenditure, please provide the following:

- a. A description of the nature and purpose of the expenditure.
- b. The month and year of the expenditure.
- c. The dollar amount of the expenditure.
- d. Whether, for FERC/GAAP purposes, the total amount expended was recorded as a settlement of the GAAP/FERC ARO liability at the time of expenditure, or was recorded as a separate asset of some type, with annual amounts of depreciation and/or return charged to the ARO liability over time.
- e. How the expenditure is actually being treated or proposed to be treated for N.C. retail accounting and ratemaking purposes, including whether the amortization period for the expenditure is intended to be the general amortization period established by the Commission for deferred CCR expenditures or the estimated useful life of the underlying "asset."
- f. Whether the amount actually recorded or proposed to be recorded in the NCUC-authorized regulatory deferral account is the total amount expended at the time of expenditure, or is some form of depreciation and/or return assigned or allocated over time with the undepreciated cost residing in a separate asset account of some type.

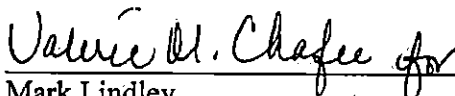
Response:

Imposing a hypothetical assumption that GAAP/FERC ARO requirements do not exist is improper and necessarily requires a speculative response. Notwithstanding the foregoing, the

majority of CCR expenditures from January 2015 through the present charged as settlements against the ARO liabilities have been for services and labor. These activities can be viewed as a final maintenance effort and would be charged to O&M expense in the absence of GAAP/FERC ARO accounting requirements.

Dominion Energy North Carolina
2019 NC Base Case – Docket No. E-22, Sub 562
Public Staff
Data Request No. 166

The following response to Question No. 1 of Public Staff Data Request No. 166, dated August 9, 2019 has been prepared under my supervision.


Mark Lindley
Director-Accounting
Dominion Energy Services, Inc.

Question No. 1:

The following questions concern the Company's response to Public Staff Data Request 95-2.

Please provide a further explanation of what the term "the majority of CCR expenditures" means. Does it mean (a) some amount that may well be as low as 51% of the total, (b) the "vast majority" or "virtually all" of the expenditures, or (c) some amount between (a) and (b)? If the third option, can the Company be more specific with regard to the percentage that has been "services and labor"?

Response:

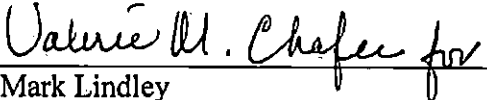
The term "the majority of CCR expenditures" in this case means the vast majority of the expenditures, as explained further below.

Please refer to Exhibit MDM-1 from witness Mitchell, which shows total CCR expenditures between July 1, 2016 and June 30, 2019 of \$390.4 million (this amount and all amounts in this response are system level). All such expenditures pertaining to facilities that no longer have operational coal units, which includes Bremo, Possum Point, Chesapeake and Yorktown, would not be capitalizable under GAAP/FERC principles since there is no further coal-related service potential for these facilities. The expenditures for the remaining facilities, Chesterfield, Clover and Mount Storm, which continue to have operating coal facilities, total \$101.4 million. See the response to Question No. 4 of this set, which details the Company's method for estimating hypothetically capitalizable amounts for Chesterfield, which accounts for the largest part of the \$101.4 million. That analysis determined that, under the hypothetical scenario Public Staff is proposing, \$6.1 million out of the \$87.2 million of total Chesterfield expenditures would be capitalizable, or roughly 7%. If we apply this same percentage to Clover and Mount Storm, it results in hypothetically capitalizable amounts of \$115 thousand and \$879 thousand, respectively, for a total across all three facilities of roughly \$7 million. Of the total spend of

\$390.4 million, this represents less than 2%, thus the vast majority of the expenditures would not be capitalizable under the hypothetical scenario that GAAP/FERC ARO requirements do not exist.

Dominion Energy North Carolina
2019 NC Base Case – Docket No. E-22, Sub 562
Public Staff
Data Request No. 166

The following response to Question No. 2 of Public Staff Data Request No. 166, dated August 9, 2019 has been prepared under my supervision.



Mark Lindley
Director-Accounting
Dominion Energy Services, Inc.

Question No. 2:

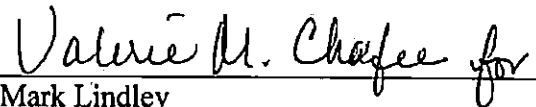
Does the phrase “these activities” mean the “service and labor” activities identified in the previous sentence, or all of the ARO activities charged as settlements from January 2015 through the present date?

Response:

“These activities” refers to all of the CCR activities charged as settlements against the ARO. Please refer to Exhibit MDM-1 from witness Mitchell for details of these expenditures.

Dominion Energy North Carolina
2019 NC Base Case – Docket No. E-22, Sub 562
Public Staff
Data Request No. 166

The following response to Question No. 3 of Public Staff Data Request No. 166, dated August 9, 2019 has been prepared under my supervision.



Mark Lindley
Director-Accounting
Dominion Energy Services, Inc.

Question No. 3:

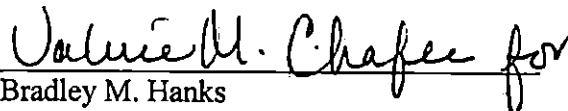
Please confirm that the Company's response indicates that it will not assert in this proceeding that any of the costs that have been spent from January 2015 through the most recent date available in full or partial settlement of the ARO liability would qualify, in the absence of the GAAP/FERC ARO or any other regulatory deferral requirements, as property used and useful under N.C.G.S. 62-133(b)(1)?

Response:

Please see response to Question No. 1 of this set.

Dominion Energy North Carolina
2019 NC Base Case – Docket No. E-22, Sub 562
Public Staff
Data Request No. 166

The following response to Question No. 4(a), (b), (c) of Public Staff Data Request No. 166, dated August 9, 2019 has been prepared under my supervision.


Bradley M. Hanks
Manager – Construction Services
Dominion Energy Service, Inc.

Question No. 4:

In Data Request 95-2 the Public Staff asked for:

“A listing of all items of CCR cost that have been spent from January 2015 through the most recent date available in full or partial settlement of the ARO liability that, in the absence of the GAAP/FERC ARO or any other special regulatory deferral requirements, would have presumably been capitalized as assets in the normal course of business and depreciated over the period of time they were expected to be in use. For each such expenditure, please provide the following:

- a. A description of the nature and purpose of the expenditure.
- b. The month and year of the expenditure.
- c. The dollar amount of the expenditure.

Response:

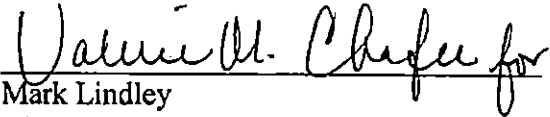
- a. The following response contemplates what costs would have been potentially capitalized in the absence of GAAP/FERC ARO accounting treatment for the following four projects identified in Exhibit MDM-1 for witness Mitchell: Bremono CCR project, Possum Point CCR project, Chesapeake CCR project, and the Chesterfield CCR project. Since the Bremono Power Station, Possum Point Power Station, and Chesapeake Power Station do not have operating coal units, any costs related to the CCR projects at those facilities would have been recorded as an operations & maintenance (“O&M”) expense. At the Chesterfield facility, estimated costs allocated as capital, again hypothetical in the absence of GAAP/FERC ARO treatment, would have been the work scope to place the temporary liner on the Lower Ash Pond. This work scope was contracted under Charah Purchase Order 70309518. If not provided previously, see attachments Confidential Charah 70339518 Orig.pdf, Confidential Charah 70339518 CO001.pdf, and Confidential Charah 70339518 CO002.pdf. These attachments

are provided pursuant to the protections set forth in the Comprehensive Confidentiality Agreement between DENC and the Public Staff dated September 16, 2011.

- b. See Confidential Attachment Public Staff Set 166-4bc.xlsx for the monthly expenditures paid by the Company to the vendor under Purchase Order 70339518. The attachment is provided pursuant to the protections set forth in the Comprehensive Confidentiality Agreement between DENC and the Public Staff dated September 16, 2011.
- c. See the response to subpart (b) of this question.

Dominion Energy North Carolina
2019 NC Base Case – Docket No. E-22, Sub 562
Public Staff
Data Request No. 166

The following response to Question No. 4(d), (e), (f) of Public Staff Data Request No. 166, dated August 9, 2019 has been prepared under my supervision.


Mark Lindley
Director-Accounting
Dominion Energy Services, Inc.

Question No. 4:

In Data Request 95-2 the Public Staff asked for:

“A listing of all items of CCR cost that have been spent from January 2015 through the most recent date available in full or partial settlement of the ARO liability that, in the absence of the GAAP/FERC ARO or any other special regulatory deferral requirements, would have presumably been capitalized as assets in the normal course of business and depreciated over the period of time they were expected to be in use. For each such expenditure, please provide the following:

- b. A description of the nature and purpose of the expenditure.
- c. The month and year of the expenditure.
- d. The dollar amount of the expenditure.
- e. Whether, for FER/CAAP purposes, the total amount expended was recorded as a settlement of the GAAP/FERC ARO liability at the time of expenditure, or was recorded as a separate asset of some type, with annual amounts of depreciation and/or return charged to the ARO liability over time.
- f. How the expenditure is actually being treated or proposed to be treated for N.C. retail accounting and ratemaking purposes, including whether the amortization period for the expenditure is intended to be the general amortization period established by the Commission for deferred CCR expenditures or the estimated useful life of the underlying “asset.”
- g. Whether the amount actually recorded or proposed to be recorded in the NCUC-authorized regulatory deferral account is the total amount expended at the time of expenditure, or is some form of depreciation and/or return assigned or allocated over time with the undepreciated cost residing in a separate asset account of some type.”

The Company response did not provide this information. To the extent that the response to Question 3 of this data request does not make the confirmation requested by the Public

Staff, please provide the information described above before close of business on August 16, 2019.

Response:

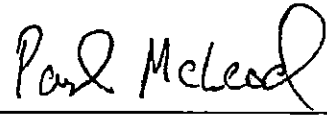
d. For FERC/GAAP purposes, the total amount expended was recorded as a settlement of the FERC/GAAP ARO at the time of the expenditure.

e. These expenditures are being treated as recoverable under the NCUC framework and have been recorded as regulatory assets to be amortized over a period to be established by NCUC during applicable rate proceedings. There is no estimated useful life of any underlying "asset".

f. The amount proposed to be recorded in the NCUC-authorized regulatory deferral account (regulatory asset) is the total amount expended at the time of the CCR expenditure.

Dominion Energy North Carolina
2019 NC Base Case – Docket No. E-22, Sub 562
Public Staff
Data Request No. 170

The following response to Question No. 1 of Public Staff Data Request No. 170, dated August 9, 2019 has been prepared under my supervision.

 / ^{by} _{for}

Paul McLeod
Regulatory Consultant
Dominion Energy Services, Inc.

Question No. 1:

In Charles F. Phillips' The Regulation of Public Utilities, Third Edition, on page 348, "working capital" is described as "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." In this proceeding, the Company has included the unamortized balance of CCR expenditures in working capital. Please explain if the Company considers working capital treatment for unamortized CCR costs to be consistent with this or other published descriptions or definitions, and if so, why.

Response:

Yes, the CCR expenditures represent investor funds for costs prudently incurred for the provision of electric service to DENC's customers. These cash outflows are a use of investor capital until recovered from customers and are properly included in the working capital section of rate base.

Dominion Energy North Carolina
2019 NC Base Case – Docket No. E-22, Sub 562
Public Staff
Data Request No. 170

The following response to Question No. 2 of Public Staff Data Request No. 170, dated August 9, 2019 has been prepared under my supervision.



Paul McLeod
Regulatory Consultant
Dominion Energy Services, Inc.

Question No. 2:

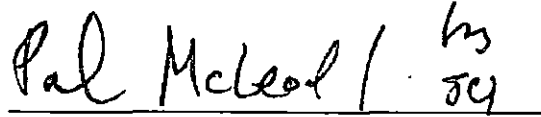
Please indicate whether the Company believes that the inclusion of reasonable and prudently incurred unamortized CCR costs in rate base is required by N.C.G.S. 62-133, or by any other provision of North Carolina law. For each such requirement identified, please explain fully and in detail why the Company considers inclusion required pursuant to that specific provision.

Response:

The Company contends that the inclusion of reasonable and prudently incurred unamortized CCR costs should be included in rate base per the NCUC's orders in the last DEC and DEP rate cases.

Dominion Energy North Carolina
2019 NC Base Case – Docket No. E-22, Sub 562
Public Staff
Data Request No. 170

The following response to Question No. 3 of Public Staff Data Request No. 170, dated August 9, 2019 has been prepared under my supervision.

 Paul McLeod / *hm*
sc

Paul McLeod
Regulatory Consultant
Dominion Energy Services, Inc.

Question No. 3:

Please schedule a conference call with the Public Staff the week of August 12-16th to discuss the questions above.

Response:

The Company will arrange a conference call to discuss the Company's written responses for the week of August 19th.

**STATE OF NORTH CAROLINA
UTILITIES COMMISSION
RALEIGH**

DOCKET NO. E-22, SUB 562

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

In the Matter of)	
Application of Virginia Electric and Power)	INTERROGATORIES AND
Company, d/b/a Dominion Energy, for)	REQUESTS FOR PRODUCTION OF
Adjustment of Rates and Charges)	DOCUMENTS OF DOMINION
Applicable to Electric Service in North)	ENERGY NORTH CAROLINA
Carolina)	

PUBLIC STAFF RESPONSE TO INTERROGATORIES, REQUESTS FOR PRODUCTION
OF DOCUMENTS, AND REQUESTS FOR ADMISSION OF DOMINION ENERGY NORTH
CAROLINA PROPOUNDED TO THE PUBLIC STAFF –
NORTH CAROLINA UTILITIES COMMISSION (FIRST SET ON COAL ASH)

**The Public Staff's responses are incorporated below into the discovery request of
Dominion Energy North Carolina.**

Responses sent on September 4, 2019.

(15) Please produce all documents from 1979 to present where the Public Staff has made any recommendation to the North Carolina Utilities Commission regarding any utility's coal ash management, handling and /or storage techniques including, but not limited to, inquiries into groundwater or surface water issues related to coal ash, seeps from coal ash impoundments, or any other alleged environmental impact related to coal ash impoundments.

(Jay Lucas, Utilities Engineer; Layla Cummings, Staff Attorney)

RESPONSE: It is unclear whether the Company is seeking recommendations made by the Public Staff or any inquiries made by the Public Staff. In the time available to respond, we could not search for all recommendations and inquiries back to 1979. However, historical recommendations or inquiries are likely limited as there were no significant costs for coal ash remediation in rate requests prior to the 2016 DENC rate case.

For our recommendations in the most recent Duke rate cases, please see:

- The testimony of Jay Lucas filed on October 20, 2017, in Docket No. E-2, Sub 1142.
- The testimony of Charles Junis filed on January 23, 2018, in Docket No. E-7, Sub 1146.

IN THE MATTER OF DUKE ENERGY PROGRESS, LLC
Jay Lucas on 11/02/2017

1 STATE OF NORTH CAROLINA
2 UTILITIES COMMISSION
3 RALEIGH
4 DOCKET NO. E-2, SUB 1142
5 BEFORE THE NORTH CAROLINA UTILITIES COMMISSION
6
7 In the Matter of)
8)
9)
10 Application of Duke Energy)
11 Progress, LLC for)
12 Adjustment of Rates and)
13 Charges Applicable to)
14 Electric Utility Service in)
15 North Carolina)

16 Video Deposition of JAY LUCAS
17 (Taken by Duke Energy Progress, LLC)
18 Raleigh, North Carolina
19 Thursday, November 2, 2017
20
21
22

23 Reported by: Marisa Munoz-Vourakis -
24 RMR, CRR and Notary Public
25



**NORTH CAROLINA
PUBLIC STAFF
UTILITIES COMMISSION**

May 24, 2019

Ms. M. Lynn Jarvis, Chief Clerk
North Carolina Utilities Commission
4325 Mail Service Center
Raleigh, North Carolina 27699-4300

Re: Docket No. EMP-103, Sub 0 – Application for CPCN to Construct an 80-MW Electric Merchant Plant in Roper, Washington County, North Carolina

Dear Ms. Jarvis:

In connection with the above-referenced docket, I transmit herewith for filing on behalf of the Public Staff the testimony of Evan D. Lawrence, Utilities Engineer, Electric Division.

By copy of this letter, we are forwarding copies to all parties of record.

Sincerely,

/s/ Megan Jost
Staff Attorney
megan.jost@psncuc.nc.gov

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OFFICIAL COPY

May 24 2019

**BEFORE THE NORTH CAROLINA UTILITIES COMMISSION
DOCKET NO. EMP-103, SUB 0**

**Testimony of Evan D. Lawrence
On Behalf of the Public Staff
North Carolina Utilities Commission**

May 24, 2019

1 **Q. PLEASE STATE YOUR NAME AND ADDRESS FOR THE**
2 **RECORD.**

3 **A. My name is Evan D. Lawrence. My business address is 430 North**
4 **Salisbury Street, Raleigh, North Carolina.**

5 **Q. WHAT IS YOUR POSITION WITH THE PUBLIC STAFF?**

6 **A. I am an engineer in the Electric Division of the Public Staff.**

7 **Q. WOULD YOU BRIEFLY DISCUSS YOUR EDUCATION AND**
8 **EXPERIENCE?**

9 **A. Yes. My education and experience are summarized in Appendix A to**
10 **my testimony.**

11 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?**

12 **A. The purpose of my testimony is to make recommendations to the**
13 **Commission on the request for a Certificate of Public Convenience**
14 **and Necessity (CPCN) filed by Albemarle Beach Solar, LLC**
15 **(Applicant), to construct an 80 megawatt AC (MW_{AC}) solar**
16 **photovoltaic (PV) merchant electric generating facility in Washington**
17 **County, North Carolina (the Facility).**

OFFICIAL COPY

May 24 2019

1 The purpose of my testimony is as follows:

- 2 1. To discuss the compliance of the application with N.C. Gen.
3 Stat. § 62-110.1 and Commission Rule R8-63;
4 2. To discuss any concerns raised by the application; and
5 3. To make a recommendation regarding whether the
6 Commission should grant the requested certificate.

7 **Q. PLEASE BRIEFLY DESCRIBE THE GENERATION FACILITY**
8 **PROPOSED TO BE CONSTRUCTED BY THE APPLICANT.**

9 A. The Applicant proposes to construct an 80 MW_{AC} solar PV electric
10 generating facility in Washington County, North Carolina. The Facility
11 will utilize single axis tracking, ground mounted, solar PV modules.
12 Approximately 367,213 solar PV modules will be used along with
13 fifty-four 1.56 MW inverters. A 34.5 kV collector substation will be
14 constructed adjacent to an existing Dominion Energy North Carolina
15 (DENC) 230 kV substation. The point of interconnection (POI) will be
16 located at the existing DENC substation. The Applicant states that
17 either overhead or underground medium-voltage cable will be used
18 to connect the multiple sections of panels. The yearly generation is
19 anticipated to be 193,957 MWh. Due to the fact that solar is an
20 intermittent energy source, the maximum dependable capacity of the
21 plant is 0 MW. The expected life of the facility is a minimum of twenty
22 years.

1 **Q. HAS THE APPLICANT COMPLIED WITH THE COMMISSION'S**
2 **FILING REQUIREMENTS?**

3 A. Yes. The original application for the Facility was filed on September
4 21, 2015, in Docket SP-6476, Sub 0. On November 12, 2018, the
5 Applicant filed an amended application modifying the site layout to
6 reflect both the addition and removal of parcels of land.

7 On November 29, 2018, the Commission issued an Order
8 Transferring Record, Closing Docket, and Finding Application
9 Incomplete. This Order determined that the Applicant erred in
10 applying for a CPCN pursuant to Commission Rule R8-64, the rule
11 governing CPCN applications by CPRE program participants,
12 qualifying cogenerators, or small power producers, and that the
13 application is instead governed by Commission Rule R8-63, the rule
14 governing CPCN applications for merchant plants. Based on this
15 determination, the Order directs that Docket No. SP-6476, Sub 0, be
16 closed, and that the record from that docket be transferred to Docket
17 No. EMP-103, Sub 0. The Order further finds the Applicant's CPCN
18 application, as transferred to Docket No. EMP-103, Sub 0, to be
19 incomplete as it does not include pre-filed direct testimony
20 incorporating and supporting the application, as required by
21 Commission Rule R8-63(b)(5). The Order declares that the
22 Applicant's amended CPCN application filed in Docket No. SP-6476,
23 Sub 0, is an application for a CPCN for the construction of an electric

1 generating facility to be operated as a merchant plant pursuant to
2 Commission Rule R8-63, and that the Commission will consider the
3 application once the Applicant has supplemented it with the pre-filed
4 direct testimony required by Commission Rule R8-63(b)(5).

5 On March 28, 2019, the Applicant filed the direct testimony of Linda
6 Nwadike, Project Manager for SunEnergy1, LLC, along with four
7 accompanying exhibits. On April 11, 2019, the Applicant filed
8 Amended Pre-Filed Direct Testimony of Linda Nwadike along with
9 ten accompanying exhibits.

10 On April 11, 2019, the Public Staff notified the Commission that it
11 considered the application to be complete and requested that the
12 Commission issue a procedural order setting it for hearing. On April
13 26, 2019, the Commission issued an Order requiring public notice,
14 scheduling a hearing on June 4, 2019, for the purpose of receiving
15 public and expert testimony, and addressing other necessary
16 procedural matters. On May 1, 2019, the Commission issued an
17 Amended Order Scheduling Hearing and Requiring Public Notice to
18 correct scrivener's errors in the April 26, 2019, Order.

19 On May 20, 2019, the Applicant filed a certificate of service to show
20 compliance with Ordering Paragraph Number 3 of the Commission's
21 May 1, 2019 Order. This paragraph ordered the Applicant to mail a
22 copy of the public notice, no later than the first day of publication, to

1 each person who has filed a complaint in the proceeding, and to file
2 a certificate of service with the Commission on or before the date of
3 the hearing.

4 **Q. HAS THE APPLICANT SHOWN A NEED FOR ITS PROPOSED**
5 **FACILITY?**

6 **A.** Yes. The Applicant states that the Facility will interconnect with the
7 transmission system of DENC, which is a member of PJM. The
8 Applicant believes there are strong market conditions in the PJM
9 market that will create sustainable off-take for its power production.
10 The Applicant states that Dominion Energy has committed to
11 increasing its use of renewable power to generate 5,000 MW of
12 electricity by 2028. The Applicant states that it anticipates contracting
13 the sale of energy, capacity, and renewable energy credits (RECs)
14 through PJM. The annual net energy growth rates for PJM over the
15 next ten years is expected to grow by 0.4% for PJM and by 1.1% for
16 the Dominion Virginia Power zone. Summer peak load for PJM and
17 the Dominion Virginia Power zone is expected to grow by 0.9% per
18 year over the next ten years. The winter peak load growth in PJM is
19 expected to grow at an average of 0.4% per year over the next ten
20 year period, and by 1.1% per year for the Dominion Virginia Power
21 zone. The Applicant cites the March 2019 PJM Load Forecast Report
22 to support the growth in PJM, the growth in the Dominion Virginia
23 Power zone, and the need for the facility.

1 Q. HAS THE STATE CLEARINGHOUSE COMPLETED ITS
2 APPLICATION REVIEW?

3 A. No. The State Clearinghouse has not filed a letter in the docket in
4 response to the Commission's Order Scheduling Hearing and
5 Requiring Public Notice filed on April 26, 2019.

6 Q. DOES THE PUBLIC STAFF HAVE ANY RECOMMENDATIONS
7 REGARDING THE SITING OF THE PROPOSED FACILITY OR ITS
8 ENVIRONMENTAL IMPACT?

9 A. No. The Public Staff has reviewed the consumer statements of
10 position in this docket. With regard to the concerns raised regarding
11 compatibility with existing land uses and environmental impacts, the
12 Public Staff believes that these concerns are more appropriately
13 addressed through the local permitting process and through the
14 environmental permitting process. In its April 24, 2008, Order in
15 Docket No. SP-231, Sub 0, the Commission discussed local
16 authority over the siting of facilities, stating that "such decisions are,
17 in most instances, best left to the local community through the
18 exercise of its zoning authority rather than made by the
19 Commission." The Public Staff notes that, according to the
20 Applicant's witness, Linda Nwadike, Washington County has a Solar
21 Farm Ordinance that requires a solar development permit for all solar
22 projects proposed in the county.

1 In addition, the Public Staff does not have particular expertise in the
2 area of the impacts of electric generation on the environment. Those
3 issues are best left to the purview of environmental regulators who
4 do have this expertise, and who are responsible for issuing specific
5 environmental permits for electric generating facilities. To that end,
6 as stated below, the Public Staff recommends that the Commission
7 require compliance with all permitting requirements as a condition to
8 the issuance of the CPCN.

9 **Q. WHAT IS THE PUBLIC STAFF'S RECOMMENDATION ON THE**
10 **APPLICATION FOR A CPCN AND THE REGISTRATION**
11 **STATEMENT?**

12 **A.** The Public Staff recommends that the application be approved
13 subject to the following conditions:

- 14 1. The Applicant shall construct and operate the Facility in strict
15 accordance with applicable laws and regulations, including
16 the provisions of all permits issued by the North Carolina
17 Department of Environmental Quality;
- 18 2. The Applicant shall not begin construction until the State
19 Clearinghouse files comments indicating that no further
20 review action by the Commission is required for compliance
21 with the North Carolina Environmental Policy Act;

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May 24 2019

- 1 3. The CPCN shall be subject to Commission Rule
2 R8-63(e) and all orders, rules and regulations as are now or
3 may hereafter be lawfully made by the Commission; and
4 4. The Applicant shall file with the Commission in this docket a
5 progress report and any revisions in the cost estimates for the
6 Facility on an annual basis, including any storage systems to
7 be constructed at a later date, with the first report due no later
8 than six months from the date of issuance of the CPCN.

9 **Q. DOES THIS CONCLUDE YOUR TESTIMONY?**

10 **A. Yes, it does.**

APPENDIX A

Evan D. Lawrence

I graduated from East Carolina University in Greenville, North Carolina in May of 2016 earning a Bachelor of Science degree in Engineering and a concentration in Electrical Engineering. I started my current position with the Public Staff in September of 2016. Since that time my duties and responsibilities have focused around the review of renewable energy projects, rate design, and renewable energy portfolio standards compliance. I have filed affidavits in Dominion Energy North Carolina's 2017 and 2018 REPS cost recovery proceeding, testimony in New River Light and Power's (NRLP) most recent rate case proceeding, and testimony in additional small power producer and merchant electric generating facilities (EMPs). I have also assisted other Public Staff personnel with the review and investigation of REPS Compliance Plans filed by the electric power suppliers, previous DEC and DEP REPS cost recovery proceedings, and multiple other cases.

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May 24 2019



Federal Register

**Monday,
May 22, 2000**

Part III

**Environmental
Protection Agency**

40 CFR Part 261

**Regulatory Determination on Wastes from
the Combustion of Fossil Fuels; Final
Rule**

32214

Federal Register / Vol. 65, No. 99 / Monday, May 22, 2000 / Rules and Regulations

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 261

[FRL-6588-1]

RIN 2050-AD91

Notice of Regulatory Determination on Wastes From the Combustion of Fossil Fuels

AGENCY: Environmental Protection
Agency.

ACTION: Regulatory determination.

SUMMARY: This document explains EPA's determination of whether regulation of fossil fuel combustion wastes is warranted under subtitle C of the Resource Conservation and Recovery Act (RCRA). Today's action applies to all remaining fossil fuel combustion wastes other than high volume coal combustion wastes generated at electric utilities and independent power producing facilities and managed separately, which were addressed by a 1993 regulatory determination. These include: Large-volume coal combustion wastes generated at electric utility and independent power producing facilities that are co-managed together with certain other coal combustion wastes; coal combustion wastes generated by non-utilities; coal combustion wastes generated at facilities with fluidized bed combustion technology; petroleum coke combustion wastes; wastes from the combustion of mixtures of coal and other fuels (i.e., co-burning); wastes from the combustion of oil; and wastes from the combustion of natural gas.

The Agency has concluded these wastes do not warrant regulation under subtitle C of RCRA and is retaining the hazardous waste exemption under RCRA section 3001(b)(3)(C). However, EPA has also determined national regulations under subtitle D of RCRA are warranted for coal combustion wastes when they are disposed in landfills or surface impoundments, and that regulations under subtitle D of RCRA (and/or possibly modifications to existing regulations established under authority of the Surface Mining Control and Reclamation Act (SMCRA)) are warranted when these wastes are used to fill surface or underground mines.

So that coal combustion wastes are consistently regulated across all waste management scenarios, the Agency also intends to make these national regulations for disposal in surface impoundments and landfills and minefilling applicable to coal combustion wastes generated at electric

utility and independent power producing facilities that are not co-managed with low volume wastes.

The Agency has concluded that no additional regulations are warranted for coal combustion wastes that are used beneficially (other than for minefilling) and for oil and gas combustion wastes. We do not wish to place any unnecessary barriers on the beneficial use of fossil fuel combustion wastes so that they can be used in applications that conserve natural resources and reduce disposal costs. Currently, about one-quarter of all coal combustion wastes are diverted to beneficial uses. We support increases in these beneficial uses, such as for additions to cement and concrete products, waste stabilization and use in construction products such as wallboard.

DATES: Comments in response to data and information requests in this document are due to EPA on September 19, 2000.

ADDRESSES: Public comments and supporting materials are available for viewing in the RCRA Information Center (RIC). In addition to the data and information that was included in the docket to support the RTC on FFC waste and the Technical Background Documents, the docket also includes the following document: Responses to Public Comments on the Report To Congress, Wastes from the Combustion of Fossil Fuels. The RIC is located at Crystal Gateway I, First Floor, 1235 Jefferson Davis Highway, Arlington, VA. The Docket Identification Number is F-2000-FF2F-FFFFF. The RIC is open from 9 a.m. to 4 p.m., Monday through Friday, excluding federal holidays. To review docket materials, we recommend that the public make an appointment by calling 703 603-9230. The public may copy a maximum of 100 pages from any regulatory docket at no charge. Additional copies cost \$0.15/page. The index and some supporting materials are available electronically. See the **SUPPLEMENTARY INFORMATION** section for information on accessing them.

Commenters must send an original and two copies of their comments referencing docket number F-2000-FF2F-FFFFF to: (1) If using regular US Postal Service mail: RCRA Docket Information Center, Office of Solid Waste (5305G), U.S. Environmental Protection Agency Headquarters (EPA, HQ), Ariel Rios Building, 1200 Pennsylvania Avenue, NW., Washington, DC 20460-0002; or (2) if using special delivery, such as overnight express service: RCRA Docket Information Center (RIC), Crystal Gateway One, 1235 Jefferson Davis

Highway, First Floor, Arlington, VA 22202. Comments may also be submitted electronically through the Internet to: rcra-docket@epa.gov. Comments in electronic format should also be identified by the docket number F-2000-FF2F-FFFFF and must be submitted as an ASCII file avoiding the use of special characters and any form of encryption.

Commenters should not submit electronically any confidential business information (CBI). An original and two copies of CBI must be submitted under separate cover to: RCRA CBI Document Control Officer, Office of Solid Waste (5305W), U.S. EPA, Ariel Rios Building, 1200 Pennsylvania Avenue, NW., Washington, DC 20460-0002.

FOR FURTHER INFORMATION CONTACT: For general information, contact the RCRA Hotline at 800 424-9346 or TDD 800 553-7672 (hearing impaired). In the Washington, DC, metropolitan area, call 703 412-9810 or TDD 703 412-3323.

For more detailed information on specific aspects of this regulatory determination, contact Dennis Ruddy, Office of Solid Waste (5306W), U.S. Environmental Protection Agency, Ariel Rios Building, 1200 Pennsylvania Avenue, NW, Washington, DC 20460-0002, telephone (703) 308-8430, e-mail address ruddy.dennis@epa.gov.

SUPPLEMENTARY INFORMATION: The index and several of the primary supporting materials are available on the Internet. You can find these materials at <http://www.epa.gov/epaoswer/other/fossil/index.htm>.

The official record for this action will be kept in paper form. Accordingly, EPA will transfer all comments received electronically into paper form and place them in the official record, which will also include all comments submitted directly in writing. The official record is the paper record maintained at the address in **ADDRESSES** at the beginning of this notice.

EPA will not immediately reply to commenters electronically other than to seek clarification of electronic comments that may be garbled in transmission or during conversion to paper form, as discussed above.

The contents of today's notice are listed in the following outline:

1. General Information

A. What action is EPA taking today?
B. What is the statutory authority for this action?

C. What was the process EPA used in making today's decision?

D. What is the significance of "uniquely associated wastes" and what wastes does EPA consider to be uniquely associated wastes?

E. Who is affected by today's action and how are they affected?

F. What additional actions will EPA take after this regulatory determination regarding coal, oil and natural gas combustion wastes?

2. What Is the Basis for EPA's Regulatory Determination for Coal Combustion Wastes?

A. What is the Agency's decision regarding the regulatory status of coal combustion wastes and why did EPA make that decision?

B. What were EPA's tentative decisions as presented in the Report to Congress?

C. How did commenters react to EPA's tentative decisions and what was EPA's analysis of their comments?

D. What is the basis for today's decisions?

E. What approach will EPA take in developing national regulations?

3. What Is the Basis for EPA's Regulatory Determination for Oil Combustion Wastes?

A. What is the Agency's decision regarding the regulatory status of oil combustion wastes and why did EPA make that decision?

B. What were EPA's tentative decisions as presented in the Report to Congress?

C. How did commenters react to EPA's tentative decisions and what was EPA's analysis of their comments?

D. What is the basis for today's decisions?

4. What Is the Basis for EPA's Regulatory Determination for Natural Gas Combustion Wastes?

A. What is the Agency's decision regarding the regulatory status of natural gas combustion wastes and why did EPA make that decision?

B. What was EPA's tentative decision as presented in the Report to Congress?

C. How did commenters react to EPA's tentative decisions?

D. What is the basis for today's decisions?

5. What Is the History of EPA's Regulatory Determinations for Fossil Fuel Combustion Wastes?

A. On what basis is EPA required to make regulatory decisions regarding the regulatory status of fossil fuel combustion wastes?

B. What was EPA's general approach in making these regulatory determinations?

C. What happened when EPA failed to issue its determination of the regulatory status of the large volume utility combustion wastes in a timely manner?

D. When was the Part 1 regulatory decision made and what were EPA's findings?

6. Executive Orders and Laws Addressed in Today's Action

A. Executive Order 12866—Determination of Significance.

B. Regulatory Flexibility Act, as amended.

C. Paperwork Reduction Act (Information Collection Requests).

D. Unfunded Mandates Reform Act.

E. Executive Order 13132: Federalism.

F. Executive Order 13084: Consultation and Coordination with Indian Tribal Governments.

G. Executive Order 13045: Protection of Children from Environmental Health Risks and Safety Risks.

H. National Technology Transfer and Advancement Act of 1995.

I. Executive Order 12898: Environmental Justice.

J. Congressional Review Act.

7. How To Obtain more Information

1. General Information

A. What Action Is EPA Taking Today?

In today's action, we are determining that regulation of fossil fuel combustion (FFC) wastes under subtitle C of the Resource Conservation and Recovery Act (RCRA) is not warranted. This determination covers the following wastes:

- Large-volume coal combustion wastes generated at electric utility and independent power producing facilities that are co-managed together with certain other coal combustion wastes;
- Coal combustion wastes generated at non-utilities;
- Coal combustion wastes generated at facilities with fluidized bed combustion technology;
- Petroleum coke combustion wastes;
- Wastes from the combustion of mixtures of coal and other fuels (i.e., co-burning of coal with other fuels where coal is at least 50% of the total fuel);
- Wastes from the combustion of oil; and
- Wastes from the combustion of natural gas.

While these wastes remain exempt from subtitle C, we have further decided to establish national regulations under subtitle D of RCRA (RCRA sections 1008(a) and 4004(a)) for coal combustion wastes that are disposed in landfills or surface impoundments or used to fill surface or underground mines. For coal combustion wastes used as minefill, we will consult with the Office of Surface Mining in the Department of the Interior and thoroughly assess whether equivalent protectiveness could be achieved by using regulatory authorities available under the Surface Mining Control and Reclamation Act (SMCRA), as well as those afforded under the Resource Conservation and Recovery Act. We will consider whether RCRA subtitle D or SMCRA authorities or some combination of both are most

appropriate to regulate the disposal of coal combustion wastes when used for minefill in surface and underground mines to ensure protection of human health and the environment. These standards will be developed through notice and comment rulemaking and in consultation with states and other stakeholders. These regulations will, in EPA's view, ensure that the trend towards improved management of coal combustion wastes over recent years will accelerate and will ensure a consistent level of protection of human health and the environment is put in place across the United States.

If, as a result of comments in response to this notice; the forthcoming analyses identified in this notice; or additional information garnered in the course of developing these national regulations; we find that there is a need for regulation under the authority of RCRA subtitle C, the Agency will revise this determination accordingly.

We recognize our decision to develop regulations under RCRA subtitle D (or, for minefilling, possibly under SMCRA) for the above-listed coal combustion wastes was not specifically identified as an option in our March 31, 1999 Report to Congress. Our final determination reflects our consideration of public comments received on the Report to Congress and other analyses that we conducted.

Today's decision was, in the Agency's view, a difficult one, given the many competing considerations discussed throughout today's notice. After considering all of the factors specified in RCRA section 8002(n), we have decided as discussed further below, that the decisive factors are the trends in present disposal and utilization practices (section 8002 (n)(2)), the current and potential utilization of the wastes (Section 8002 (n)(8), and the admonition against duplication of efforts by other federal and state agencies.

As described in the Report to Congress, the utility industry has made significant improvements in its waste management practices over recent years, and most state regulatory programs are similarly improving. For example, in the utility industry the use of liners and groundwater monitoring at landfills and surface impoundments has increased substantially over the past 15 years as indicated in the following table.

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PERCENT OF UTILITY COAL COMBUSTION WASTE MANAGEMENT UNITS WITH CONTROLS IN 1995

Waste management unit	Liners		Groundwater monitoring	
	Percent of all units	Percent of new units *	Percent of all units	Percent of new units *
Landfills	57	75	85	88
Surface Impoundments	26	60	38	65

* New units constructed between 1985-1995.
Source: USWAG, EPRI 1995.

Public comments and other analyses, however, have convinced us that these wastes could pose risks to human health and the environment if not properly managed, and there is sufficient evidence that adequate controls may not be in place—for example, while most states can now require newer units to include liners and groundwater monitoring, 62% of existing utility surface impoundments do not have groundwater monitoring. This, in our view, justifies the development of national regulations. We note, however, that some waste management units may not warrant liners and/or groundwater monitoring, depending on site-specific characteristics.

New information we received in public comments includes additional documented damage cases, as well as cases indicating at least a potential for damage to human health and the environment. We did not independently investigate these damage cases; rather, we relied on information contained in state files. While the absolute number of documented damage cases is not large, we have considered the evidence of proven and potential damage in light of the proportion of facilities that lack basic environmental controls (e.g., groundwater monitoring). We acknowledge, moreover, that our inquiry into the existence of damage cases was focused primarily on a subset of states—albeit states that account for almost 20 percent of coal fired utility electricity generation capacity. Given the volume of coal combustion wastes generated nationwide (115 million tons) and the numbers of facilities that currently lack some basic environmental controls, especially groundwater monitoring, other cases of proven and potential damage are likely to exist. Because EPA did not use a statistical sampling methodology to evaluate the potential for damage, the Agency is unable to determine whether the identified cases are representative of the conditions at all facilities and, therefore, cannot quantify the extent and magnitude of damages at the national level.

Since the Report to Congress, we have conducted additional analyses of the potential for the constituents of coal combustion wastes to leach in dangerous levels into ground water. Based on a comparison of drinking water and other appropriate standards to leach test data from coal combustion waste samples, we identified a potential for risks from arsenic that we cannot dismiss at this time. This conclusion is based on possible exceedences of a range of values that EPA is currently considering for a revised arsenic MCL. Once a new arsenic MCL is established, additional groundwater modeling may be required to evaluate the likelihood of exceeding that MCL.

As discussed further below, in light of certain comments received on the Report to Congress, we are not relying on a quantitative groundwater risk assessment to assess potential risks to human health or the environment. In the absence of a more complete groundwater risk assessment, we are unable at this time to draw quantitative conclusions regarding the risks due to arsenic or other contaminants posed by improper waste management. Once we have completed a review of our groundwater model and made any necessary changes, we will reevaluate groundwater risks and take appropriate regulatory actions. We will specifically assess new modeling results as they relate to any promulgated changes in the arsenic MCL.

We acknowledge that, even without federal regulatory action, many facilities in the utility industry have either voluntarily instituted adequate environmental controls or have done so at the direction of states that regulate these facilities. In addition, we found that for the proven damage cases, the states (and in two cases, EPA under the Superfund program) have taken action to mitigate risk and require corrective action. However, in light of the evidence of actual and potential environmental releases of metals from these wastes; the large volume of wastes generated from coal combustion; the proportion of existing and even newer units that do not currently have basic controls in

place; and the presence of hazardous constituents in these wastes; we believe, on balance, that the best means of ensuring that adequate controls are imposed where needed is to develop national subtitle D regulations. As we develop and issue the national regulations, we will try to minimize disruptions to operation of existing waste management units.

In taking today's action, we carefully considered whether to develop national regulations under RCRA subtitle D or subtitle C authorities. One approach we considered was to promulgate regulations pursuant to subtitle C authority, similar to recently proposed regulations applicable to cement kiln dust. Under this approach, EPA would have established national management standards for coal combustion wastes managed in landfills and surface impoundments and used for minefilling, as well as a set of tailored subtitle C requirements, promulgated pursuant to RCRA section 3004(x). If wastes were properly managed in accordance with subtitle D-like standards, they would not be classified as a hazardous waste. If wastes were not properly managed, they would become listed hazardous wastes subject to tailored subtitle C standards. This approach would give EPA enforcement authority in states following their adoption of the contingent management listing.

We believe, however, for the reasons described below, the better approach at this time to ensuring adequate management of FFC wastes is to develop national regulations under subtitle D rather than subtitle C. EPA has reached this conclusion in large part based on consideration of "present disposal and utilization practices." RCRA § 8002(n). As noted above, present disposal practices in landfills and surface impoundments are significantly better than they have been in the past in terms of imposing basic environmental controls such as liners and groundwater monitoring. This trend is the result of increasing regulatory oversight by states of the management of these wastes as well as voluntary industry improvements. In the 1980's, only 11

states had authority to require facilities to install liners, and 28 states had the authority to require facilities to conduct groundwater monitoring at landfills. As of 1995, these rates were significantly higher, with 43 states having the authority to require liners and 46 states having the authority to require groundwater monitoring at landfills. When authority under state groundwater and drinking water regulations are considered, some commenters have suggested that nearly all states can address the management of these wastes. Thus, with the exception of relatively few states, the regulatory infrastructure is generally in place at the state level to ensure adequate management of these wastes.

While the trend both in terms of state regulatory authorities and the imposition of controls at these facilities has been positive, between 40 and 70 percent of sites lacked controls such as liners and/or groundwater monitoring as of 1995. This gap is of environmental concern given the potential for risks posed by mismanagement of coal combustion wastes in certain circumstances. Nonetheless, given most of the states' current regulatory capabilities and the evidence that basic controls are increasingly being put in place by the states and facilities (see RCRA section 8002(n), which directs EPA to consider actions of state and other federal agencies with a view to avoiding duplication of effort), EPA believes that subtitle D controls will provide sufficient clarity and incentive for states to close the remaining gaps in coverage, and for facilities to ensure that their wastes are managed properly.

For minefilling, although we have considerable concern about certain current practices (e.g., placement directly into groundwater) we have not yet identified a case where placement of coal wastes can be determined to have actually caused increased damage to ground water. In addition, there is a federal regulatory program—SMCRA—expressly designed to address environmental risks associated with coal mines. Finally, given that states have been diligent in expanding and upgrading programs, as they have done for surface impoundments and landfills, we believe they will be similarly responsive in addressing environmental concerns arising from this emerging practice. In short, we arrive at the same conclusions, for substantially the same reasons, for this practice as we did for landfills and surface impoundments: that subtitle D controls, or upgraded SMCRA controls or a combination of the two, should provide sufficient clarity and incentive to ensure proper handling

of this waste. Having determined that subtitle C regulation is not warranted for all other management practices, EPA does not see a basis in the record for carving this one practice out for separate regulatory treatment.

Once these regulations are effective, facilities would be subject to citizen suits for any violation of the standards. If EPA were addressing wastes that had not been addressed by the states (or the federal government) in the past, or an industry with wide evidence of irresponsible solid waste management practices, EPA may well conclude that the additional incentives for improvement and compliance provided by the subtitle C scheme—the threat of federal enforcement and the stigma associated with improper management of RCRA subtitle C waste—were necessary. But the record before us indicates that the structure and the sanctions associated with a subtitle D approach (or a SMCRA approach if EPA determines it is equivalent) should be sufficient.

We also see a potential downside to pursuing a subtitle C approach. Section 8002(n)(8) directs us to consider, among other factors, "the current and potential utilization of such materials." Industry commenters have indicated that they believe subjecting any coal combustion wastes to a subtitle C regime would place a significant stigma on these wastes, the most important effect being that it would adversely impact beneficial reuse. As we understand it, the concern is that, even though beneficially reused waste would not be hazardous under the contemplated subtitle C approach, the link to subtitle C would nonetheless tend to discourage purchase and re-use of the waste. We do not wish to place any unnecessary barriers on the beneficial uses of these wastes, because they conserve natural resources, reduce disposal costs and reduce the total amount of waste destined for disposal. States and industry have also expressed concern that regulation under subtitle C could cause a halt in the use of coal combustion wastes to reclaim abandoned and active mine sites. We recognize that when done properly, minefilling can lead to substantial environmental benefits. EPA believes the contingent management scheme we discussed should diminish any stigma that might be associated with the subtitle C link. Nonetheless, we acknowledge the possibility that the approach could have unintended consequences. We would be particularly concerned about any adverse effect on the beneficial re-use market for these wastes because more than 23 percent

(approximately 28 million tons) of the total coal combustion waste generated each year is beneficially reused and an additional eight percent (nine million tons) is used for minefilling. EPA believes that such reuse when performed properly, is by far the environmentally preferable destination for these wastes, including when minefilled. Normally, concerns about stigma are not a deciding factor in EPA's decisions under RCRA, given the central concern under the statute for protection of human health and the environment. However, given our conclusion that the subtitle D approach here should be fully effective in protecting human health and the environment, and given the large and salutary role that beneficial reuse plays for this waste, concern over stigma is a factor supporting our decision today that subtitle C regulation is unwarranted in light of our decision to pursue a subtitle D approach.

Additionally, in a 1993 regulatory determination, EPA previously addressed large volume coal combustion wastes generated at electric utility and independent power producing facilities that manage the wastes separately from certain other low volume and uniquely associated coal combustion wastes (see 58 FR 42466; August 9, 1993). Our 1993 regulatory determination maintained the exemption of these large volume coal combustion wastes from being regulated as hazardous wastes when managed separately from other wastes (e.g., in monofills). We intend that the national subtitle D regulations we develop for the coal combustion wastes subject to today's regulatory determination will also be applicable to the wastes covered in the 1993 regulatory determination for the reasons listed below, so that all coal combustion wastes are consistently regulated for placement in landfills, surface impoundments, and minefills.

- The co-managed coal combustion wastes that we studied extensively in making today's regulatory determination derive their characteristics largely from these large-volume wastes and not from the other wastes that are co-managed with them.

- We believe that the risks posed by the co-managed coal combustion wastes result principally from the large-volume wastes.

- These large-volume coal combustion wastes, account for over 20% of coal combustion wastes.

As we proceed with regulation development, we will also take enforcement action under RCRA section 7003 when we identify cases of imminent and substantial endangerment. We will also use Superfund remedial and emergency

response authorities under the Comprehensive Environmental Response Compensation and Liabilities Act (CERCLA), as appropriate, to address damages that result in risk to human health and the environment.

However, as stated above, this decision was a difficult one and EPA believes that, absent our conclusions regarding the current trends in management of this waste, the waste might present sufficient potential threat to human health and the environment to justify subtitle C regulation. There are several factors that might cause us to rethink our current determination. First, and perhaps most importantly, if current trends toward protective management do not continue, EPA may well determine that subtitle C regulation is warranted for this waste. As we have stated, we do not believe the current gaps in the basic controls are acceptable, and our determination that subtitle C regulation is not warranted is premised to a large extent on our conclusion that subtitle D regulation will be sufficient to close these gaps. If this conclusion turns out not to be warranted, we would be inclined to re-examine our current decision.

Second, EPA will continue to examine available information and, as a result of the ongoing review, may conclude over the next several months that this decision should be revised. Our ongoing review will include consideration of: (1) The extent to which fossil fuel combustion wastes have caused actual or potential damage to human health or the environment; (2) the environmental effects of filling underground and surface coal mines with fossil fuel combustion wastes; and (3) the adequacy of existing state and/or federal regulation of these wastes. Finally, the agency will consider the results of a report of the National Academy of Sciences regarding the adverse human health effects of mercury, one of the constituents in fossil fuel combustion wastes. EPA believes that this report will enhance our understanding of the risks due to exposure to mercury. All of these efforts may result in a subsequent revision of today's regulatory determination.

Finally, relating to oil combustion wastes, we will work with relevant stakeholders so that any necessary measures are taken to ensure that oil combustion wastes currently managed in the two known remaining unlined surface impoundments are managed in a manner that protects human health and the environment.

B. What Is the Statutory Authority for This Action?

We are issuing today's notice under the authority of RCRA section 3001 (b) (3) (C), as amended. This section exempts certain wastes, including fossil fuel combustion wastes, from hazardous waste regulation until the Agency completes a Report to Congress mandated by RCRA section 8002 (n) and maintains the exemption, unless the EPA Administrator makes a determination that subtitle C (hazardous waste) regulation is warranted. RCRA section 3004 (x) provides the Agency with flexibility in developing subtitle C standards. If appropriate, these formerly exempted wastes may not be subjected to full subtitle C requirements in areas such as treatment standards, liner design requirements and corrective action.

C. What Was the Process EPA Used in Making Today's Decision?

1. What Approach Did EPA Take to Studying Fossil Fuel Combustion Wastes?

We conducted our study of wastes generated by the combustion of fossil fuels in two phases. The first phase, called the Part 1 determination, covered high volume coal combustion wastes (e.g., bottom ash and fly ash) generated at electric utility and independent power producing facilities (non-utility electric power producers that are not engaged in any other industrial activity) and managed separately from other fossil fuel combustion wastes. In 1993, EPA issued a regulatory determination that exempted Part 1 wastes from regulation as hazardous wastes (see 58 FR 42466; August 9, 1993). Today's regulatory determination is the second phase of our effort, or the Part 2 determination. It covers all other fossil fuel combustion wastes not covered in Part 1. This includes high volume, utility-generated coal combustion wastes when co-managed with certain low volume wastes that are also generated by utility coal burners; coal combustion wastes generated by industrial, non-utility, facilities; and wastes from the combustion of oil and gas. Under court order, we are required to complete the Part 2 regulatory determination by April 25, 2000.¹

¹ The consent decree entered into by EPA (*Frank Gearhart, et al. v. Browner, et al.*, No. 91-2435 (D.D.C.) for completing the studies and regulatory determination for fossil fuel combustion wastes used the term "remaining wastes" to differentiate the wastes to be covered in today's decision from the large-volume utility coal combustion wastes that were covered in the August 1993 regulatory determination (see 58 FR 42466).

2. What Statutory Requirements Does EPA Have To Meet in Making Today's Regulatory Determinations?

RCRA section 8002(n) specifies eight study factors that we must take into account in our decision-making. These are:

1. The source and volumes of such materials generated per year.
2. Present disposal practices.
3. Potential danger, if any, to human health and the environment from the disposal of such materials.
4. Documented cases in which danger to human health or the environment has been proved.
5. Alternatives to current disposal methods.
6. The costs of such alternatives.
7. The impact of those alternatives on the use of natural resources.
8. The current and potential utilization of such materials.

Additionally, in developing the Report to Congress, we are directed to consider studies and other actions of other federal and State agencies with a view toward avoiding duplication of effort (RCRA section 8002(n)). In addition to considering the information contained in the Report, EPA is required to base its regulatory determination on information received in public hearings and comments submitted on the Report to Congress (RCRA section 3001(b)(3)(C)).

3. What Were the Agency's Sources of Information and Data That Serve as the Basis for This Decision?

We gathered publicly available information from a broad range of sources, including federal and state agencies, industry trade groups, environmental organizations, and open literature searches. We requested information from all stakeholder groups on each of the study factors Congress requires us to evaluate. For many of the study factors, very limited information existed prior to this study. We worked closely with the Edison Electric Institute (EEI), Utility Solid Waste Activities Group (USWAG), the Electric Power Research Institute (EPRI), and the Council of Industrial Boiler Owners (CIBO) as those organizations developed new information. Because other ongoing EPA projects currently focus on portions of the FFC waste generator universe, we also leveraged data collection efforts conducted for air, industrial waste, and hazardous waste programs. In addition, we obtained information from environmental organizations regarding beneficial uses of some FFC wastes and methods for characterizing the risks associated with FFC wastes.

Specifically, we gathered and analyzed the following information from industry, states and environmental groups:

- Published and unpublished materials obtained from state and federal agencies, utilities and trade industry groups, and other knowledgeable parties on the volumes and characteristics of coal, oil, and natural gas combustion wastes and the corresponding low-volume and uniquely associated wastes (see the following section for a description of "uniquely associated wastes").
- Published and unpublished materials on waste management practices (including co-disposal and reuse) associated with FFC wastes and the corresponding low-volume and uniquely associated wastes.
- Published and unpublished materials on the potential environmental impacts associated with FFC wastes.
- Published and unpublished materials on trends in utility plant operations that may affect waste volumes and characteristics. We gathered specific information on innovations in scrubber use and the potential impacts of the 1990 Clean Air Act Amendments on waste volumes and characteristics.
- Energy Information Agency (EIA), Department of Energy, data on utility operations and waste generation obtained from EIA's Form 767 database. These data are submitted to EIA annually by electric utilities.
- Site visit reports and accompanying facility submittals for utility and non-utility plants we visited during the study.
- Materials obtained from public files maintained by State regulatory agencies. These materials focus on waste characterization, waste management, and environmental monitoring data, along with supporting background information.

We visited five states to gather specific information about state regulatory programs, FFC waste generators, waste management practices and candidate damage cases related to fossil fuel combustion. The five states we examined in great detail were: Indiana, Pennsylvania, North Carolina, Wisconsin, and Virginia. These five states account for almost 20 percent of coal-fired utility electrical generation capacity.

We also performed a variety of analyses, including human health and ecological risk assessments, analyses of existing federal and state regulatory programs, and economic impact analyses. We discussed and shared

these results with all of our stakeholders. We also conducted an external peer review of our risk analysis.

4. What Process Did EPA Follow To Obtain Comments on the Report to Congress?

RCRA requires that we publish a Report to Congress (RTC) evaluating the above criteria. Further, within six months of submitting the report, we must, after public hearings and opportunity for comment, decide whether to retain the exemption from hazardous waste requirements or whether regulation as hazardous waste is warranted. On March 31, 1999, we issued the required RTC on those fossil fuel combustion wastes (coal, oil and gas) not covered in the Part 1 regulatory determination, which are also known as the "remaining wastes" (see footnote 1).

We asked the public to comment on the Report and the appropriateness of regulating fossil fuel wastes under subtitle C of RCRA. To ensure that all interested parties had an opportunity to present their views, we held a public meeting with stakeholders on May 21, 1999. The April 28, 1999 Federal Register notice provided a 45-day public comment period, until June 14, 1999. We received over 150 requests to extend the public comment period by up to six months. However, we were obligated by a court-ordered deadline to issue our official Regulatory Determination by October 1, 1999. (See 64 FR 31170; June 10, 1999.) In response to requests for an extension, we entered into discussions with the parties to consider an extension of the comment period to ensure that all interested members of the public had sufficient time to complete their review and submit comments. Subsequently, the plaintiffs in *Gearhart v. Reilly* moved to modify the consent decree to reopen the comment period and to allow EPA until March 10, 2000 to complete the Regulatory Determination. We supported the motion, and on September 2, 1999, the Court granted the motion. In compliance with the court order, on September 20, 1999, we announced that public comments would be accepted through September 24, 1999 (64 FR 50788; Sept. 20, 1999). We have since received two extensions to the date for the final determination. Currently, EPA is directed to issue the Part 2 regulatory determination by April 25, 2000.

We received about 220 comments on the RTC from the public hearing and our Federal Register requests for comments. The docket for this action (Docket No. F-99-FF2P-FFFFF) contains all individual comments presented in the

public meetings and hearing, and a transcript from the public hearing, and all written comments. The docket is available for public inspection. Today's decision is based on the RTC, its underlying data and analyses, public comments, and EPA analyses of these comments.

The comments covered a wide variety of topics discussed in the Report to Congress, such as fossil fuel combustion waste generation and characteristics; current and alternative practices for managing FFC waste; documented damage cases and potential danger to human health and the environment; existing regulatory controls on FFC waste management; cost and economic impacts of alternatives to current management practices; FFC beneficial use practices; and our review of applicable state and federal regulations.

D. What Is the Significance of "Uniquely Associated Wastes" and What Wastes Does EPA Consider To Be "Uniquely Associated Wastes?"

Facilities that burn fossil fuels generate combustion wastes and also generate other wastes from processes that are related to the main fuel combustion processes. Often, as a general practice, facilities co-dispose these wastes with the large volume wastes that are subject to the RCRA section 3001 (b) (3) (C) exemption. Examples of these related wastes are:

- Precipitation runoff from the coal storage piles at the facility.
- Waste coal or coal mill rejects that are not of sufficient quality to burn as fuel.
- Wastes from cleaning the boilers used to generate steam.

There are numerous wastes like these, collectively known as "low-volume" wastes. Further, when one of these low-volume wastes, during the course of generation or normal handling at the facility, comes into contact with either fossil fuel (e.g., coal, oil) or fossil fuel combustion waste (e.g., coal ash or oil ash) and it takes on at least some of the characteristics of the fuel or combustion waste, we call it a "uniquely associated" waste. When uniquely associated wastes are co-managed with fossil fuel combustion wastes, they fall within the coverage of today's regulatory determination. When managed separately, uniquely associated wastes are subject to regulation as hazardous waste if they are listed wastes or exhibit the characteristic of a hazardous waste (see 40 CFR 261.20 and 261.30, which specify when a solid waste is considered to be a hazardous waste).

The Agency recognizes that determining whether a particular waste

is uniquely associated with fossil fuel combustion involves an evaluation of the specific facts of each case. In the Agency's view, the following qualitative criteria should be used to make such determinations on a case-by-case basis:

(1) Wastes from ancillary operations are not "uniquely associated" because they are not properly viewed as being "from" fossil fuel combustion.

(2) In evaluating a waste from non-ancillary operations, one must consider the extent to which the waste originates or derives from the fossil fuels, the combustion process, or combustion residuals, and the extent to which these operations impart chemical characteristics to the waste.

The low-volume wastes that are not uniquely associated with fossil fuel combustion would not be subject to today's regulatory determination. That is, they would not be accorded an exemption from RCRA subtitle C, whether or not they were co-managed with any of the exempted fossil fuel combustion wastes. Instead, they would be subject to the RCRA characteristic standards and hazardous waste listings. The exemption applies to mixtures of an exempt waste with a non-hazardous waste, but when an exempt waste is mixed with a hazardous waste, the mixture is not exempt.

Based on our identification and review of low volume wastes associated with the combustion of fossil fuels, we are considering offering the following guidance concerning which low volume wastes are uniquely associated with and which are not uniquely associated with fossil fuel combustion. Unless there are some unusual site-specific circumstances, we would generally consider that the following lists of low volume wastes are uniquely and non-uniquely associated wastes:

Uniquely Associated

- Coal Pile Runoff
- Coal Mill Rejects and Waste Coal
- Air Heater and Precipitator Washes
- Floor and Yard Drains and Sumps
- Wastewater Treatment Sludges
- Boiler Fireside Chemical Cleaning Wastes

Not Uniquely Associated

- Boiler Blowdown
- Cooling Tower Blowdown and Sludges
- Intake or Makeup Water Treatment and Regeneration Wastes
- Boiler Waterside Cleaning Wastes
- Laboratory Wastes
- General Construction and Demolition Debris
- General Maintenance Wastes

Moreover, we do not generally consider spillage or leakage of materials

used in the processes that generate these non-uniquely associated wastes, such as boiler water treatment chemicals, to be uniquely associated wastes, even if they occur in close proximity to the fossil fuel wastes covered by this regulatory determination.

An understanding of whether a waste is uniquely associated can be important in one circumstance. If a waste is not uniquely associated and is a hazardous waste, co-management with a Bevill waste will result in loss of the Bevill exemption. As a general matter, the wastes identified above as potentially not uniquely associated do not tend to be hazardous. This issue may therefore not be critical. The Agency, however, must still define appropriate boundaries for the Bevill exemption, because there is no authority to grant Bevill status to wastes that are not uniquely associated—the exemption was not intended as an umbrella for wastes that other industries must treat as hazardous.

EPA solicits comment on this discussion of uniquely associated wastes in the context of fossil fuel combustion and will issue final guidance after reviewing and evaluating information we receive as a result of this request.

E. Who Is Affected by Today's Action and How Are They Affected?

As explained above, fossil fuel combustion wastes generated from the combustion of coal, oil and natural gas will continue to remain exempt from being regulated as hazardous wastes under RCRA. No party is affected by today's determination to develop regulations applicable to coal combustion wastes when they are land disposed or used to fill surface or underground mines because today's action does not impose requirements. However, if such regulations are promulgated, they would affect coal combustion wastes subject to today's regulatory determination as well as wastes covered by the Part 1 regulatory determination when they are disposed in landfills and surface impoundments, or when used to fill surface or underground mines.

While we do not intend that national subtitle D regulations would be applicable to oil combustion wastes, we intend to work with relevant stakeholders so that any necessary measures are taken to ensure that oil combustion wastes currently managed in the two known remaining unlined surface impoundments are managed in a manner that protects human health and the environment.

F. What Additional Actions Will EPA Take After this Regulatory Determination Regarding Coal, Oil and Natural Gas Combustion Wastes?

To ensure that entities who generate and/or manage fossil fuel combustion wastes provide long-term protection of human health and the environment, we plan several actions:

- We will review comments submitted in response to today's notice on uniquely associated wastes and on the adequacy of the guidance developed by the utility industry on co-management of mill rejects (pyrites) with large volume coal combustion wastes.

- We will work with the State of Massachusetts and the owners and operators of the remaining two oil combustion facilities that currently manage their wastes in unlined surface impoundments to ensure that any necessary measures are taken so these wastes are managed in a manner that protects human health and the environment (described in section 3.D. of this document).

- We are evaluating the groundwater model and modeling methods that were used in the RTC to estimate risks for these wastes. This review may result in a re-evaluation of the potential groundwater risks posed by the management of fossil fuel combustion wastes and action to revise our Part 1 and Part 2 determinations if appropriate (see section 2.C. of this document).

- There are a number of ongoing and evolving efforts underway at EPA to improve our understanding of the human health impacts of wastes used in agricultural settings. We expect to receive substantial comments and new scientific information based on a risk assessment of the use of cement kiln dust as a substitute for agricultural lime (see 64 FR 45632; August 20, 1999) and other Agency efforts. As a result, we may refine our methodology for assessing risks related to the use of wastes in agricultural settings. If these efforts lead us to a different understanding of the risks posed by fossil fuel combustion wastes when used as a substitute for agricultural lime, we will take appropriate action to reevaluate today's regulatory determination (see section 2.C. of this document).

- We will review the findings and recommendations of the National Academy of Sciences upcoming report on mercury and assess its implications on risks due to exposure to mercury. We will ensure that the regulations we develop as a result of today's regulatory determination address any additional

risks posed by these wastes if hazardous constituent levels exceed acceptable levels

- We will reevaluate risk posed by managing coal combustion solid wastes if levels of mercury or other hazardous constituents change due to any future Clean Air Act air pollution control requirements for coal burning utilities (see section 2.C. of this document).

- We will continue EPA's partnership with the states to finalize voluntary industrial solid waste management guidance that identifies baseline protective practices for industrial waste management units, including fossil fuel combustion waste management units. We will use relevant information and knowledge that we obtain as a result of this effort to assist us in developing national regulations applicable to coal combustion wastes.

2. What Is the Basis for EPA's Regulatory Determination for Coal Combustion Wastes?

A. What Is the Agency's Decision Regarding the Regulatory Status of Coal Combustion Wastes and Why Did EPA Make That Decision?

We have determined at this time that regulation of coal combustion wastes under subtitle C is not warranted. However, we have also decided that it is appropriate to establish national regulations under non-hazardous waste authorities for coal combustion wastes that are disposed in landfills and surface impoundments. We believe that subtitle D regulations are the most appropriate mechanism for ensuring that these wastes disposed in landfills and surface impoundments are managed safely.

EPA's conclusion that some form of national regulation is warranted to address these wastes is based on the following considerations: (a) The composition of these wastes could present danger to human health and the environment under certain conditions, and "potential" damage cases identified by EPA and commenters, while not definitively demonstrating damage from coal combustion wastes, may indicate that these wastes have the potential to pose such danger; (b) we have identified eleven documented cases of proven damages to human health and the environment by improper management of these wastes in landfills and surface impoundments; (c) present disposal practices are such that, in 1995, these wastes were being managed in 40 percent to 70 percent of landfills and surface impoundments without reasonable controls in place, particularly in the area of groundwater

monitoring; and (d) while there have been substantive improvements in state regulatory programs, we have also identified gaps in state oversight.

When we considered a tailored subtitle C approach, we estimated the potential costs of regulation of coal combustion wastes (including the utility coal combustion wastes addressed in the 1993 Part 1 determination) to be \$1 billion per year. While large in absolute terms, we estimate that these costs are less than 0.4 percent of industry sales. To improve our estimates we solicit public comment on the potential compliance costs to coal combustion waste generators as well as the indirect costs to users of these combustion by-products.

We have also decided that it is appropriate to establish national regulations under RCRA non-hazardous waste authorities (and/or possibly modifications to existing regulations established under authority of SMCRA) applicable to the placement of coal combustion wastes in surface or underground mines. We have reached this decision because (a) we find that these wastes when minefilled could present a danger to human health and the environment under certain circumstances, and (b) there are few states that currently operate comprehensive programs that specifically address the unique circumstances of minefilling, making it more likely that damage to human health or the environment could go unnoticed.

With the exception of minefilling as described above, we have decided that national regulation under subtitle C or subtitle D is not warranted for any of the other beneficial uses of coal combustion wastes. We have reached this decision because: (a) We have not identified any other beneficial uses that are likely to present significant risks to human health or the environment; and (b) no documented cases of damage to human health or the environment have been identified. Additionally, we do not want to place any unnecessary barriers on the beneficial uses of coal combustion wastes so they can be used in applications that conserve natural resources and reduce disposal costs.

B. What Were EPA's Tentative Decisions as Presented in the Report to Congress?

On March 31, 1999, EPA indicated a preliminary decision that disposal of coal combustion wastes should remain exempt from regulation under RCRA subtitle C. We also presented our tentative view that most beneficial uses of these wastes should remain exempt from regulation under RCRA subtitle C.

However, in the RTC we identified three situations where we had particular concerns with the disposition or uses of these wastes.

First, we indicated some concern with the co-management of mill rejects ("pyrites") with coal combustion wastes which, under certain circumstances, could cause or contribute to ground water contamination or other localized environmental damage. We indicated that the utility industry responded to our concern by implementing a voluntary education and technical guidance program for the proper management of these wastes. We expressed satisfaction with the industry program and tentatively concluded that additional regulation in this area was not necessary. We explained that we were committed to overseeing industry's progress on properly managing pyritic wastes, and would revisit our regulatory determination relative to co-management of pyrites with large volume coal combustion wastes at a later date, if industry progress was insufficient in this area.

Second, in the RTC we identified potential human health risks from arsenic when these wastes are used for agricultural purposes (e.g., as a lime substitute). To address this risk, we indicated our preliminary view that Subtitle C regulations may be appropriate for this management practice. We explained that an example of such controls could include regulation of the content of these materials such that, when used for agricultural purposes, the arsenic level could be no higher than that found in agricultural lime. As an alternative to subtitle C regulation, we indicated that EPA could engage the industry to implement a voluntary program to address the risk, for example, by limiting the level of arsenic in coal combustion wastes when using them for agricultural purposes. Moreover, we indicated that a decision to establish hazardous waste regulations applicable to agricultural uses of co-managed coal combustion wastes would likely affect the regulatory status of the Part 1 wastes (i.e., electric utility high volume coal combustion wastes managed separately from other coal combustion wastes) when used for agricultural purposes. This is because the source of the identified risk was the arsenic content of the high volume coal combustion wastes and not other materials that may be co-managed with them.

Third, we expressed concern with potential impacts from the expanding practice of minefilling coal combustion wastes (i.e., backfilling the wastes into mined areas) and described the

difficulties we had with assessing the impacts and potential risks of this practice. We explained that these difficulties include:

- Determining if elevated contaminants in ground water are due to minefill practices or pre-existing conditions resulting from mining operations,
- Trying to model situations that may be more complex than our groundwater models can accommodate,
- The lack of long-term experience with the recent practice of minefilling, which limits the amount of environmental data for analysis, and
- The site-specific nature of these operations.

Accordingly, we did not present a tentative decision in the RTC for this practice. We indicated that subtitle C regulation would remain an option for minefilling, but that we needed additional information prior to making a final decision. Rather, we solicited additional information from commenters on these and other aspects of minefilling practices and indicated we would carefully consider that information in the formulation of today's decision.

C. How Did Commenters' React to EPA's Tentative Decisions and What Was EPA's Analysis of Their Comments?

Commenters' provided substantial input and information on several aspects of our overall tentative decision to retain the exemption for these wastes from RCRA subtitle C regulation. These aspects are: modeling and risk assessment for the groundwater pathway, documented damage cases, the potential for coal combustion waste characteristics to change as a result of possible future Clean Air Act regulations, proper management of mill rejects (pyrites), agricultural use of coal combustion wastes, the practice of minefilling coal combustion wastes, and our assessment of existing State programs and industry waste management practices.

1. How Did Commenters React to the Groundwater Modeling and Risk Assessment Analyses Conducted by EPA To Support its Findings in the Report to Congress?

Comments. Industry and public interest group commenters submitted detailed critiques of the groundwater model, EPACMTP, that we used for our risk analysis. Industry commenters believe that the model will overestimate the levels of contaminants that may migrate down-gradient from disposed wastes. Environmental groups expressed the opposite belief; that is, that the

model underestimates down-gradient chemical concentrations and, therefore, underestimates the potential risk posed by coal combustion wastes.

The breadth and potential implications of the numerous technical comments on the EPACMTP model are significant. Examples of the comments include issues relating to:

- The thermodynamic data that are the basis for certain model calculations,
- The model's ability to account for the effects of oxidation-reduction potential,
- The model's ability to account for competition between multiple contaminants for adsorption sites,
- The model's algorithm for selecting adsorption isotherms,
- The impact of leachate chemistry on adsorption and aquifer chemistry, and
- The model's inherent assumptions about the chemistry of the underlying aquifer.

EPA's Analysis of the Comments. We have been carefully reviewing all of the comments on the model. We determined that the process of thoroughly investigating all of the comments will take substantially more time to complete than is available within the court deadline for issuing this regulatory determination. At this time, we are uncertain of the overall outcome of our analysis of the issues raised in the comments. Accordingly, we have decided not to use the results of our groundwater pathway risk analysis in support of today's regulatory determination on fossil fuel combustion wastes. As explained below, in making today's regulatory determination, we have relied in part on other information related to the potential danger that may result from the management of fossil fuel combustion wastes.

Meanwhile, we will continue with our analysis of comments on the groundwater model and risk analysis. This may involve changing or restructuring various aspects of the model, if appropriate. It may also include additional analyses to determine whether any changes to the model or modeling methodology would materially affect the groundwater risk analysis results that were reported in the RTC. If our investigations reveal that a re-analysis of groundwater risks is appropriate, we will conduct the analysis and re-evaluate today's decisions as warranted by the re-analysis.

In addition to our ongoing review of comments on the groundwater model, one element of the model—the metals partitioning component called "MINTEQ"—has been proposed for

additional peer review. When additional peer review is completed, we will take the findings and recommendations into account in any overall decision to re-evaluate today's regulatory determination.

While not relying on the EPACMTP groundwater modeling as presented in the RTC, we have since conducted a general comparison of the metals levels in leachate from coal combustion wastes to their corresponding hazardous waste toxicity characteristic levels. Fossil fuel wastes infrequently exceed the hazardous waste characteristic. For co-managed wastes, 2% (1 of 51 samples) exceeded the characteristic level. For individual wastes streams, 0% of the coal bottom ash, 2% of the coal fly ash, 3% of the coal flue gas desulfurization, and 7% of the coal boiler slag samples that were tested exceeded the characteristic level. Nevertheless, once we have completed a review of our groundwater model and made any necessary changes, we will reevaluate groundwater risks and take appropriate regulatory actions. We will specifically assess new modeling results as they relate to any promulgated changes in the arsenic MCL.

We also compared leach concentrations from fossil fuel wastes to the drinking water MCLs. In the case of arsenic, we examined a range of values because EPA expects to promulgate a new arsenic drinking water regulation by January 1, 2001. This range includes the existing arsenic MCL (50 ug/l), a lower health based number presented in the FFC Report to Congress (RTC) (0.29 ug/l), and two assumed values in between (10 and 5 ug/l). We examined this range of values because of our desire to bracket the likely range of values that EPA will be considering in its effort to revise the current MCL for arsenic. The National Research Council's 1999 report on Arsenic in Drinking Water indicated that the current MCL is not sufficiently protective and should be revised downward as soon as possible. For this reason, we selected the current MCL of 50 ug/L for the high end of the range because EPA is now considering lowering the current MCL and does not anticipate that the current MCL would be revised to any higher value. We selected the health-based number presented in the Report to Congress for the low end of the range because we believe this represents the lowest concentration that would be considered in revising the current MCL. Because at this time we cannot project a particular value as the eventual MCL, we also examined values in between these low-end and high-end values, a value of 5

ug/L and a value of 10 ug/L, for our analyses supporting today's regulatory determination. The choice of these mid-range values for analyses does not predetermine the final MCL for arsenic.

Those circumstances where the leach concentrations from the wastes exceed the drinking water criteria have the greatest potential to cause significant risks. This "potential" risk, however, may not occur at actual facilities. Pollutants in the leachate of the wastes undergo dilution and attenuation as they migrate through the ground. The primary purpose of models such as EPACMTP is to account for the degree of dilution and attenuation that is likely to occur, and to obtain a realistic estimate of the concentration of contaminants at a groundwater receptor. To provide a view of potential groundwater risk, we tabulated the number of occurrences where the waste leachate hazardous metals concentrations were: (a) Less than the criteria, (b) between 1 and 10 times the criteria, (c) between 10 and 100 times the criteria, and (d) greater than 100 times the criteria. Groundwater models that we currently use, when applied to large volume monofill sources of metals, frequently predict that dilution and attenuation will reduce leachate levels on the order of a factor of 10 under reasonable high end conditions. This multiple is commonly called a dilution and attenuation factor (DAF). For this reason and because lower dilution and attenuation factors (e.g., 10) are often associated with larger disposal units such as those typical at facilities where coal is burned, we assessed the frequency of occurrence of leach concentrations for various hazardous metals which were greater than 10 times the drinking water criteria. Based on current MCLs, there was only one exceedence (for cadmium). However, when we considered the arsenic health based criterion from the RTC, we found that a significant percentage (86%) of available waste samples had leach concentrations for arsenic that were greater than ten times the health-based criterion. Even considering intermediate values closer to the current MCL, a significant percentage of available waste samples had leach concentrations for arsenic that were greater than ten times the criteria (30% when the criterion was assumed to be 5 ug/l, and 14% when the criterion was assumed to be 10 ug/l). Similar concerns also occurred when comparing actual groundwater samples associated with FFC waste units and this range of criteria for arsenic. We believe this is an indication of potential risks from arsenic.

For the above analysis, we used a value equal to half the detection level to deal with those situations where analyses resulted in "less than detection" values that exceeded the MCL criteria. The actual concentration may be as low as zero or up to the detection level. To illustrate the impact of this assumption, an analysis was performed setting the "less than detection" values to zero, and an arsenic criteria at 50 ug/l. While 30% of the values exceeded 10 times the criteria when using half the detection level, exceedences dropped to 13% when "less than detection" values were set to zero.

The comparison of the leachate levels to 10 times MCL criteria is a screening level analysis that supports our concerns, which are primarily based on damage cases and the lack of installed controls (liners and groundwater monitoring). We recognize, however, that prior to issuing a regulation the Agency expects to address the issues raised on the groundwater model and complete a comprehensive groundwater modeling effort. Furthermore, we anticipate that uncertainty regarding whether the arsenic MCL will be amended and to what level, will be more settled prior to regulation of these wastes. These factors could heighten or reduce concerns with regard to the need for Federal regulation of fossil fuel combustion wastes.

2. How Did Commenters React to EPA's Assessment of Documented Damage Cases Presented in the Report to Congress?

Prior to issuing the RTC, we sought and reviewed potential damage cases related to these particular wastes. The activities included:

- A re-analysis of the potential damage cases identified during the Part 1 determination,
- A search of the CERCLA Information System for instances of these wastes being cited as causes or contributors to damages,
- Contacts and visits to regulatory agencies in five states with high rates of coal consumption to review file materials and discuss with state officials the existence of damage cases,
- A review of information provided by the Utility Solid Waste Act Group and the Electric Power Research Institute on 14 co-management sites, and
- A review of information provided by the Council of Industrial Boiler Owners on eight fluidized bed combustion (FBC) facilities.

These activities yielded three damage case sites in addition to the four cases

initially identified in the Part 1 determination.² Five of the damage cases involved surface impoundments and the two other cases involved landfills. The waste management units in these cases were all older, unlined units. The releases in these cases were confined to the vicinity of the facilities and did not affect human receptors. None of the damages impacted human health. We did not identify any damage cases that were associated with beneficial use practices.

Comments. Public interest group commenters criticized our approach to identifying damage cases associated with the management of fossil fuel combustion (FFC) wastes, stating that EPA did not use the same procedure used to identify damage cases for the cement kiln dust (CKD) Report to Congress. These commenters believed that we were too conservative in our interpretation and determination of FFC damage cases and dismissed cases that commenters believe are relevant instances of damage. For example, these commenters indicated that EPA, in the RTC, did not consider cases where the only exceedences of ground water standards were for secondary MCLs (Maximum Contaminant Levels as established by EPA for drinking water standards). They further indicated that the states often require ground water monitoring only for secondary MCL constituents and that elevated levels of the secondary MCL constituents are an indication of future potential for more serious, health-based standards to be exceeded for other constituents in the wastes, such as toxic metals. Additionally, these commenters stated that the Agency's analysis for damage cases was incomplete and they provided information on 59 possible damage cases involving these wastes, mostly at utilities. Additionally, commenters submitted seven cases of ecological damage that allege damage to mammals, amphibians, fish, benthic layer organisms and plants from co-management of coal combustion wastes in surface impoundments.

Industry commenters cited EPA's finding of so few damage cases as important support for our tentative conclusion to exempt these wastes from hazardous waste regulation. Further, some of the industry commenters indicated that the few damage cases that EPA identified do not represent current

² The Part 1 determination identified six cases of documented damages. Upon further review, we determined that two of these cases involve utility coal ash monofills which are covered by the Part 1 determination. However, the other four cases involved remaining wastes that are covered by today's determination.

utility industry management practices, but rather reflect less environmentally protective management practices at older facilities that pre-date the numerous state and federal requirements that are now in effect for managing these wastes.

EPA's Analysis of the Comments. Regarding ecological damage, while we did not identify any ecological damage cases in the RTC associated with management of coal combustion wastes, we reviewed the information on ecological damage submitted by commenters and agree that four of the seven submitted are documented damage cases that involve FFC wastes. All of these involve some form of discharge from waste management units to nearby lakes or creeks. These confirm our risk modeling conclusions as presented in the RTC that there could be adverse impacts on amphibians, birds, or mammals if they were subject to the elevated concentrations of selected chemicals that had been measured in some impoundments. However, no information was submitted in comments that would lead us to alter our conclusion that these threats are not substantial enough to cause large scale, system level ecological disruptions. These damage cases, attributable to runoff or overflow that is already subject to Clean Water Act discharge or stormwater regulations, are more appropriately addressed under the existing Clean Water Act requirements.

Regarding our assessment of damage to ground water, we believe our approach to FFC damage cases in the RTC was consistent with the approach we used for identifying CKD damage cases. For CKD, we established two categories of damage cases—"proven" damage cases and "potential" damage cases. Proven damage cases were those with documented MCL exceedences that were measured in ground water at a sufficient distance from the waste management unit to indicate that hazardous constituents had migrated to the extent that they could cause human health concerns. Potential damage cases were those with documented MCL exceedences that were measured in ground water beneath or close to the waste source. In these cases, the documented exceedences had not been demonstrated at a sufficient distance from the waste management unit to indicate that waste constituents had migrated to the extent that they could cause human health concerns. We do not believe that it would be appropriate to consider an exceedence directly beneath a waste management unit or very close to the waste boundary to be a documented, proven damage case.

State regulations typically use a compliance procedure that relies on measurement at a receptor site or in ground water at a point beyond the waste boundary (e.g., 150 meters). While our CKD analysis did not distinguish between primary and secondary MCL exceedences, most CKD damage cases involved a primary MCL constituent. Our principal basis for determining that CKD when managed in land-based units would no longer remain exempt from being regulated as a hazardous waste was our concern about generally poor management practices characteristic of that industry. Our conclusion was further supported by the extremely high percentage of proven damage cases occurring at active CKD sites for which groundwater monitoring data were available.

For FFC, we used the same test of proof to identify possible damage cases. Our FFC analysis drew a distinction between primary and secondary MCL exceedences because we believe this factor is appropriate in weighing the seriousness of FFC damage in terms of indicating risk to human health and the environment. For FFC, in the RTC, we reported only the "proven" damage (i.e., exceedence of a health-based standard such as a primary MCL and measurement in ground water or surface water). As was done in the CKD analysis, we also identified a number of potential FFC damage cases (eleven) which were included in the background documents that support the RTC.

Unlike the primary MCLs, secondary MCLs are not based on human health considerations. (Examples are dissolved solids, sulfate, iron, and chloride for which groundwater standards have been established because of their effect on taste, odor, and color.) While some commenters believe that elevated levels of some secondary MCL parameters such as soluble salts are likely precursors or indicators of future hazardous constituent exceedences that could occur at coal combustion facilities, we are not yet able and will not be able to test their hypothesis until we complete our analysis of all comments received on our groundwater model and risk analysis, which will not be concluded until next year.

Of the 59 damage cases reported by commenters, 11 cases appear to involve exceedences of primary MCLs or other health-based standards as measured either in off-site ground water or in nearby surface waters, the criteria we used in the RTC to identify proven damage cases. Of these eleven cases, two are coal ash monofills which were included in the set of damage cases described by EPA in its record

supporting the Part 1 regulatory determination. The remaining nine cases involve the co-management of large volume coal combustion wastes with other low volume and uniquely associated coal combustion wastes. We had already identified five of these nine cases in the RTC. Thus, only four of these eleven damage cases are newly identified to us. Briefly, the four new cases involve:

- Exceedence of a state standard for lead in downgradient ground water at a coal fly ash landfill in New York. There were also secondary MCL exceedences for sulfate, dissolved solids, and iron.
- Primary MCL exceedences for arsenic and selenium in downgradient monitoring wells for a coal ash impoundment at a power plant in North Dakota. There were also secondary MCL exceedences for sulfate and chloride.
- Primary MCL exceedences for fluoride and exceedence of a state standard for boron in downgradient monitoring wells at a utility coal combustion waste impoundment in Wisconsin. There was also a secondary MCL exceedence for sulfate.
- Exceedence of a state standard for boron and the secondary MCL for sulfate and manganese in downgradient monitoring wells at a utility coal combustion landfill in Wisconsin.

We found that in nine of the 11 proven damage cases (including one Superfund site), states took appropriate action to require or conduct remedial activities to reduce or eliminate the cause of contamination. EPA took action in the remaining two cases under the Superfund program.

Nineteen of the candidate damage cases submitted by commenters involve either on-site or off-site exceedences of secondary MCLs, but not primary MCLs or other health-based standards. Consistent with our CKD analysis, we consider these cases to be indicative of a potential for damage to occur at these sites because they demonstrate that there has been a release to ground water from the waste management unit.

Regarding the remaining 29 cases submitted by commenters:

- Six involve primary MCL exceedences, but measurements were in ground water either directly beneath the waste or very close to the waste boundary, i.e., no off-site ground water or receptor measurements indicated that ground water standards had been exceeded. Consistent with our analysis of damage cases for cement kiln dust, we consider these six cases to be indicative of a potential for damage to occur at these sites because they demonstrate that there has been a

release to ground water from the waste management unit..

- Eighteen case summary submissions contained insufficient documentation and data for us to verify and draw a conclusion about whether we should consider these to be potential or proven damage cases. Of these 18 cases, commenters claimed that 11 cases involve primary MCL exceedences, and another two involve secondary MCLs, but not primary MCLs. The other five cases lacked sufficient information and documentation to determine whether primary or secondary MCLs are involved. Examples of information critical to assessing and verifying candidate damage cases that was not available for these particular cases include: Identification of the pollutants causing the contamination; identification of where or how the damage case information was obtained (e.g., facility monitoring data, state monitoring or investigation, third party study or analysis); monitoring data used to identify levels of contaminants; and/or sufficient information to determine whether the damages were actually attributable to fossil fuel combustion wastes; and/or location of the identified contamination (i.e., directly beneath the unit or very close to the waste boundary or at a point some distant (e.g., 150 meters) from the unit boundary).

- Three case submissions are cases we identified in the Part 1 determination and involve monofilled utility coal ash wastes. However, as explained in the Report to Congress for the Part 1 determination, EPA determined that there was insufficient evidence to consider them to be documented damage cases.

- One case did not involve fossil fuel combustion wastes.

- One case involved coal combustion wastes and other unrelated wastes in an illegal, unpermitted dump site. This site was handled by the state as a hazardous waste cleanup site.

Our detailed analysis of the damage cases submitted by commenters is available in the public docket for this regulatory determination.

In summary, based on damage case information presented in the RTC and our review of comments, we conclude that there are 11 proven damage cases associated with wastes covered by today's regulatory determination. We identified seven of these damage cases in the RTC, so there are four new proven damage cases that were identified by commenters. All of the sites were at older, unlined units, with disposal occurring prior to 1993. For all 11 of the proven damage cases, either the state or EPA provided adequate follow-up to

require or else undertake corrective action. Although these damage cases indicate that coal combustion wastes can present risks to human health and the environment, they also show the effectiveness of states' responses when damages were identified. None of these cases involved actual human exposure.

Additionally, we determined that another 25 of the commenter submitted cases are potential damage cases for the reasons described above. Thus, including the 11 potential damage cases that we identified in the background documents that support the RTC, we are aware of 36 potential damage cases. While we do not believe the latter 36 cases satisfy the statutory criteria of documented, proven damage cases because damage to human health or the environment has not been proven, we believe that these cases may indicate that these wastes pose a "potential" danger to human health and the environment in some circumstances.

In conclusion, while the absolute number of documented, proven damage cases is not large, we believe that the evidence of proven and potential damage should be considered in light of the proportion of new and existing facilities, particularly surface impoundments, that today lack basic environmental controls such as liners and groundwater monitoring. Approximately one-third of coal combustion wastes are managed in surface impoundments. We note that controls such as liners may not be warranted at some facilities, due to site-specific conditions. We acknowledge, however, that our inquiry into the existence of damage cases was focused primarily on a subset of states. Given the volume of coal combustion wastes generated nationwide and the number of facilities that lacked groundwater monitoring as of 1995, there is at least a substantial likelihood other cases of actual and potential damage likely exist. Because we did not use a statistical sampling methodology to evaluate the potential for damage, we are unable to determine whether the identified cases are representative of the conditions at all facilities and, therefore, cannot quantify the extent and magnitude of damages at the national level.

3. What Concerns Did Commenters Express About the Impact of Potential Future Regulation of Hazardous Air Pollutants Under the Clean Air Act on Today's Regulatory Determination?

Comments. In both public hearing testimony and written comments, public interest groups expressed concern about potential changes in the characteristics of these wastes when new air pollution

controls are established under the Clean Air Act. The commenters referred to the possible future requirement for hazardous air pollutant controls at coal burning electric utility power plants, which could result in an increased level of metals and possibly other hazardous constituents in coal combustion wastes. The commenters indicated that these increased levels, in turn, could have serious implications for cross-media environmental impacts such as leaching to groundwater and volatilization to the air. The commenters argued that the Agency should include these factors in its current decision making on the regulatory status of coal combustion under the Resource Conservation and Recovery Act.

EPA's Analysis of the Comments. We have carefully considered the issue of cross-media impacts and the commenters' specific concerns that future air regulations could have an adverse impact on the characteristics of coal combustion wastes. We have concluded that it is premature to consider the possible future impact of such new air pollution controls on the wastes that are subject to today's regulatory determination. The Agency plans to issue a regulatory determination in the latter part of 2000 regarding hazardous air pollutant (HAP) controls at coal-burning, power generating facilities. If EPA decides to initiate a rulemaking process, final rulemaking under the Clean Air Act is projected to occur in 2004. Thus, no final decision has been made on what, if any, constituents will be regulated by future air pollution control requirements. Additionally, the regulatory levels of the those specific pollutants that might be controlled and the control technologies needed to attain any regulatory requirements have not yet been identified. Therefore, we believe there is insufficient information at this time for evaluating the characteristics and potential environmental impacts of solid wastes that would be generated as a result of new Clean Air Act requirements.

When any rulemaking under the Clean Air Act proceeds to a point where we can complete an assessment of the likely changes to the character of coal combustion wastes, we will evaluate the implications of these changes relative to today's regulatory determination and take appropriate action.

4. How Did Commenters React to the Findings Presented in the Report to Congress Related to Proper Management of Mill Rejects (Pyrites)?

The RTC explained that we identified situations where pyrite-bearing

materials such as mill rejects (a low volume and uniquely associated waste) that are co-managed with coal combustion wastes may cause or contribute to risks or environmental damage if not managed properly. These materials when managed improperly with exposure to air and water can generate acid. The acid, in turn, can mobilize metals contained in the co-managed combustion wastes. The RTC also explained that the Agency engaged the utility industry in a voluntary program to ensure appropriate management of these wastes. The industry responded by developing technical guidance and a voluntary industry education program on proper management of these wastes.

Comments. Utility industry commenters supported our tentative decision to continue the exemption for coal combustion wastes co-managed with mill rejects from regulation as a hazardous waste. Their position is based primarily on the industry's voluntary implementation of an education program and technical guidance on the proper management of these wastes, as described in the RTC.

Public interest groups and other commenters disagreed with our tentative decision, explaining their belief that such voluntary controls or programs are inadequate. They indicated that coal combustion wastes should be subject to hazardous waste regulations.

EPA's Analysis of the Comments. We remain encouraged by the utility industry program to educate and inform its members by implementing guidance on the proper management of coal mill rejects. However, as pointed out by commenters, there is no assurance that facilities where coal combustion wastes co-managed with pyritic wastes will follow the guidance developed by industry. In light of the number of demonstrated and potential damage cases identified to date, we are concerned that simply relying on voluntary institution of necessary controls would not adequately ensure the protection of human health and the environment. At this time, to ensure that we are aware of all stakeholders views on the adequacy of the control approaches described in the guidance to protect human health and the environment, we are soliciting public comment on the final version of the industry coal mill rejects guidance. This guidance is available in the docket supporting today's decisions.

5. How Did Commenters React to the Findings Presented in the Report to Congress Related to Agricultural Use of Coal Combustion Wastes?

In the RTC, we presented findings on the human health risks associated with agricultural use of coal wastes as an agricultural lime substitute. The pathway examined embodies risks from ingestion of soil and inhalation, and from ingestion of contaminated dairy, beef, fruit and vegetable products. The resultant "high end" cancer risk reported in the RTC was 1×10^{-5} (one in one hundred thousand exposed population), for the child of a farmer. The variables held at high end for this calculation were contaminant concentration and children's soil ingestion. With all variables set to central tendency values, the risk was calculated to be 1×10^{-7} (one in ten million exposed population). We did not identify the presence of any non-cancer hazard of concern. Based on the high end risk, the Agency raised the possibility in the RTC of developing Subtitle C controls or seeking commitments from industry to a voluntary program.

Comments. A number of industry, academic, and federal agency commenters disagreed with our tentative conclusion that some level of regulation may be appropriate for coal combustion wastes when used as an agricultural soil supplement. They indicated that EPA used unrealistically conservative levels for four key inputs used in our risk analysis and that use of a realistic level for any one of these inputs would result in a risk level less than 1×10^{-6} . The four inputs identified by the commenters are: application rate of the wastes to the land, the rate of soil ingestion by children, the bioavailability of arsenic and the phytoavailability of arsenic.

These commenters further recommended that EPA not regulate, but rather encourage voluntary restrictions because:

- Agricultural use of coal combustion wastes creates no adverse environmental impacts and EPA identified no damage cases associated with this practice;
- Agricultural use of these wastes has significant technical and economic benefits;
- Federal controls would be unnecessarily costly and would create a barrier for research and development on the practice;
- Existing regulatory programs are sufficient to control any risks from this practice; and
- The limits suggested in the RTC for arsenic levels in coal combustion wastes

are inconsistent with limits applied to other materials used in agriculture.

Public interest groups stated their belief that a voluntary approach would not be sufficiently protective of human health and the environment. They believe the Agency should apply restrictions on the use of these wastes in agriculture because the Agency's analyses of the risks and benefits of this practice were inadequate. They further recommended that EPA should prohibit the land application of coal combustion wastes generated by conventional boilers, and make the arsenic limitation of EPA's sewage sludge land application regulations applicable to the land application of coal combustion wastes generated by fluidized bed combustors, which add lime as part of the combustion process.

EPA's Analysis of Comments. After reviewing these comments and supporting information provided by the commenters, we concluded that a revised input into the model for children's soil ingestion rate is appropriate. Based on further review of the Agency's Exposure Factors Handbook (EFH), we decided to model a children's soil ingestion rate of 0.4 grams per day instead of the 1.4 grams per day that underlay the results given in the RTC.

Many studies have been conducted to estimate soil ingestion by children. Early studies focused on dirt present on children's hands. More recently, studies have focused on measuring trace elements in soil and then in feces as a function of internal absorption. These measurements are used to estimate amounts of soil ingested over a specified time period. The EFH findings for children's soil ingestion are based on seven key studies and nine other relevant studies that the Agency reviewed on this subject. These studies showed that mean values for soil ingestion ranged from 39 mg/day to 271 mg/day with an average of 146 mg/day. These results are characterized for studies that were for short periods with little information reported for pica behavior. To account for longer periods of time, the EFH reviewed the upper percentile ranges of the data studied and found ingestion rates that ranged from 106 mg/day to 1,432 mg/day with an average of 383 mg/day for soil ingestion. Rounding to one significant figure, the EFH recommended an upper percentile children's soil ingestion rate of 400 mg/day. The Agency believes that this recommendation is the best available information to address children's exposure through the soil ingestion route. Reducing the ingestion rate to the EFH handbook recommended level of

400 mg/day reduced the calculated risk to 3.4×10^{-6} for this one child risk situation and suggests that agricultural use of FFC wastes does not cause a risk of concern.

EPA believes its inputs for phytoavailability are accurate, although there are studies that suggest phytoavailability will decrease over time. Arsenic bioavailability is a function of all sources of arsenic and EPA believes it has characterized this accurately. However, as noted elsewhere, arsenic toxicity is now being studied by the Agency in conjunction with a proposed new arsenic MCL and may necessitate re-visiting today's judgement on agricultural use.

Our technical analysis that resulted in revised risk is explained in a document titled Reevaluation of Non-groundwater Pathway Risks from Agricultural Use of Coal Combustion Wastes, which is available in the docket for this action.

The comment on inappropriateness of application frequency was caused by a misunderstanding of the language in the RTC. The rate used was actually every two or three years, not two or three times per year.

Two ongoing studies of wastes of potential use as agricultural soil supplements relate to the use of FFC wastes for this purpose. Although these did not play a direct role in EPA's decision regarding FFC wastes, they are summarized below and may play a role in any future review of today's decision.

(1) On August 20, 1999, the agency proposed risk-based standards for cement kiln dust when used as a liming agent (see 64 FR 45632; August 20, 1999). This analysis was completed in 1998 just prior to our completion of the analysis of FFC wastes when used as agricultural supplements. The CKD analysis underwent a special peer review by a standing committee that is used by the Department of Agriculture. We were not able to respond to the peer review comments in either the CKD proposal or in our assessment for fossil fuel combustion wastes prior to publication of today's regulatory determination. The comment period for the CKD proposal closed on February 17, 2000, and we will soon begin our review and analyses of the public and peer review comments.

(2) In December 1999, EPA proposed new risk based standards for the use of municipal sewage sludge under section 503 of the Clean Water Act (the "503 standards"). It is important to note that municipal sludge has unique properties, application rates, and uses. This makes it inappropriate to transfer the 503 standards directly. Even though the standards cannot be used directly, there

may be interest in the risk assessment methodologies used to support the development of these standards. We disagree that it is appropriate to establish an arsenic limitation for coal combustion ash when used for agricultural purposes equivalent to that contained in the EPA sewage sludge land application regulations. The organic nature of sewage sludge makes it behave very differently from inorganic wastes such as coal combustion wastes.

We conclude at this time that arsenic levels in coal combustion wastes do not pose a significant risk to human health when used for agricultural purposes. We expect to continue to review and refine the related risk assessments noted above, and will consider comments on the Agency's CKD and municipal sludge proposals, as well as new scientific developments related to this issue such as additional peer review of the EPA MINTEQ model that was used as a component of our risk analysis. If these efforts lead us to a different understanding of the risks posed by coal combustion wastes when used as a substitute for agricultural lime, we will take appropriate action to reevaluate today's regulatory determination.

6. How Did Commenters React to the Findings Presented in the Report to Congress Related to Minefilling of Coal Combustion Wastes?

In the RTC, we explained that we had insufficient information to adequately assess the risks associated with the use of coal combustion wastes to fill surface and underground mines, whether the mines are active or abandoned. Accordingly, we did not present a tentative conclusion in the RTC with respect to the use of coal combustion wastes for disposal in active mines or for reclamation of mines. However, we did indicate that regulation of minefilling under hazardous waste rulemaking authority would remain an option for minefilling, but that we needed additional information prior to making a final decision. Thus, we solicited additional information on specific minefilling techniques, problems that may be inherent in this management practice, risks posed by this practice, existing state regulatory requirements, and environmental monitoring data. We indicated that we would consider any comments and new information on minefilling received in comments and would address this management practice in today's regulatory determination.

Comments. A number of commenters responded to our request by providing reports on individual case studies, including minefilling in underground as

well as in surface mines, descriptions of current state regulatory requirements that address this practice, monitoring data, and information about risk analysis techniques.

Industry commenters and one federal agency supported our decision to study the issue further and not attempt to estimate the risks posed by this practice using existing methods. Further, numerous industry, academic, state agency, and federal agency commenters encouraged EPA not to adopt national regulations or voluntary restrictions on minefilling because: (a) Nationwide standards would not be conducive to the site-specific evaluations needed to appropriately control these operations; (b) minefilling creates no adverse environmental impacts and EPA identified no damage cases associated with this practice; (c) existing state and federal regulatory programs and industry practices are sufficient to control any risks from this practice, and (d) federal standards would be an unreasonable interference with states' authorities.

Additionally, several industry representatives, legislators, and state mining and environmental agencies mentioned that this practice, when used to remediate abandoned mine lands, will produce considerably greater environmental benefits than risks. Further, they maintained that minefilling is a relatively inexpensive means to stop or even reverse the environmental damage caused by old mining practices. They indicated that through remediation by minefilling, these lands frequently can be returned to productive use. These commenters recommended no additional regulation of this practice.

Public interest groups and others believe we should regulate minefilling under RCRA subtitle C or prohibit it for several reasons including weaknesses in existing state and federal regulatory programs, the poor practices and performance at existing minefilling operations, and potential impacts on potable water sources. Commenters stated that state programs effectively allow open dumps without any design or construction standards. For minefilling, one commenter urged EPA to defer to state regulations only if the Agency specifically found existing state regulations to be adequate.

EPA's Analysis of Comments. We agree with commenters that it is inappropriate to estimate the risks posed by minefilling using the existing methods that we employed to conduct risk analyses for disposal of coal combustion wastes in landfills and impoundments. We found that the

groundwater models available to us are unsuitable for estimating risks from minefills because, for example, they are not able to account for conditions such as fractured flow that are typical of the hydrogeology associated with mining operations. In addition, as explained above, EPA's primary groundwater model, EPACMTP, is now undergoing careful review on the basis of comments received on the Report to Congress.

We are aware that the use of coal combustion wastes to conduct remediation of mine lands can improve conditions caused by mining activities. We also recognize that this often is the lowest cost option for conducting these remediation activities. We generally encourage the practice of remediating mine lands with coal combustion wastes when minefilling is conducted properly and when there is adequate oversight of the remediation activities. We are also aware that relatively few states currently operate regulatory or other programs that specifically address minefilling, and that many states where this practice is occurring do not have programs in place. Based on our review of information on existing state minefill programs, we find serious gaps such as a lack of adequate controls and restrictions on unsound practices, *e.g.*, no requirement for groundwater monitoring and no control or prohibitions on waste placement in the aquifer.

At this time, we cannot reach definitive conclusions about the adequacy of minefilling practices employed currently in the United States and the ability of government oversight agencies to ensure that human health and the environment are being adequately protected. For example, it is often impossible to determine if existing groundwater quality has been impacted by previous mining operations or as a result of releases of hazardous constituents from the coal combustion wastes used in the minefilling applications. Additionally, data and information submitted during the public comment period indicate that if the chemistry of the mine relative to the chemistry of the coal combustion wastes is not properly taken into account, the addition of coal combustion wastes to certain environmental settings can lead to an increase in hazardous metals released into the environment. This phenomena has been substantiated by data available to the Agency that show when pyrites, which can cause acid generation, have been improperly co-managed with coal combustion wastes, high levels of metals, especially arsenic, have leached from the wastes.

Finally, we concluded in our recent study of disposal of cement kiln dust that placement of cement kiln dust directly in contact with ground water led to a substantially greater release of hazardous metal constituents than we predicted would occur when such placement in ground water did not occur. We are aware of situations where coal combustion wastes are being placed in direct contact with ground water in both underground and surface mines. This could lead to increased releases of hazardous metal constituents as a result of minefilling. Thus, if the complexities related to site-specific geology, hydrology, and waste chemistry are not properly taken into account when minefilling coal combustion wastes, we believe that certain minefilling practices have the potential to degrade, rather than improve, existing groundwater quality and can pose a potential danger to human health and the environment. Subsequent impacts on human health would depend in part on the proximity of drinking water wells, if any, to elevated levels of metals in the water. To date we are unaware of any proven damage cases resulting from minefilling operations.

7. How Did Commenters React to EPA's Tentative Reliance on State Programs and Voluntary Industry Implementation of Improved Management Practices To Mitigate Potential Risks From Coal Combustion Waste Management?

In the RTC, EPA considered retaining the exemption for coal combustion wastes disposed in surface impoundments and landfills and for mill rejects (pyrites) that are managed with those wastes. The Agency cited a reliance on state programs that have improved substantially over the past 10 to 15 years and continue to improve, combined with voluntary industry implementation of guidance for improved management practices to mitigate risk. In addition, we stated that we would continue to work with industries and states to promote and monitor improvements.

To assess the adequacy of state programs and the potential for voluntary implementation of improved practices, we looked at the current number of facilities with liners and groundwater monitoring (which may reflect voluntary industry upgrading as well as state requirements), and the number of state programs that currently have authority to require a broad range of environmental controls. For units operating as of 1995, we found that among utilities, slightly more than half of the disposal units were surface impoundments. Of these

impoundments, 38 percent had groundwater monitoring and 26 percent had liners. Eighty-five percent of the utility landfills had groundwater monitoring and 57 percent had liners. For non-utility landfills, 94 percent had groundwater monitoring, and between 16 percent and 52 percent had liners. Between 1985 and 1995, 75 percent of new landfills and 60 percent of new surface impoundments within the utility sector had been lined. We have no information regarding the percentage of units built since 1995 (the date when the study we have relied on ended) that have liners or groundwater monitoring programs.

In looking at state programs, we found that for landfills, more than 40 states have the authority to require permits, siting restrictions; liners, leachate collection, groundwater monitoring, closure controls, and cover/dust controls. Forty-three states can require liners and 46 can require groundwater monitoring compared to 11 and 28 states, respectively, in the 1980's. For surface impoundments, more than 40 states have authority to require permits, siting restrictions, liners, groundwater monitoring, and closure control; 33 can require leachate collection (there is no earlier comparison data for surface impoundments). Forty-five states can require liners and 44 can require groundwater monitoring for impoundments.

Comments. Industry and state agency commenters generally stated that the Agency presented an accurate and comprehensive analysis of state programs and that existing state regulations are adequate. Public interest commenters raised many concerns about the adequacy of state programs: Either they do not have provisions to cover all elements of a protective program; they do not consistently impose the requirements for which they have authority; and/or enforcement is lax. Evidence commenters cited for the inadequacy of state programs included grandfathering for older management units and an apparent lack of controls for surface impoundments. For these reasons, some found EPA's review of state programs inaccurate or incomplete.

Public interest commenters were also skeptical of programs or efforts that rely on voluntary industry implementation because adherence to guidance is not guaranteed. Several commenters, primarily from industry, urged the Agency not to regulate pyrite co-management because of the voluntary, industry-developed guidance.

EPA's Analysis of Comments. We believe that state programs have, in fact, substantially improved over the last 15

years or so. A high percentage of states have authority to impose protective management standards on surface impoundments and landfills, especially for groundwater monitoring, liners, and leachate collection, which mitigate potential risks posed by these units. Over 40 states today have these authorities (33 states have authority to require leachate collection in surface impoundments). When authority under state groundwater and drinking water regulations are considered, some commenters have suggested that nearly all states can address the management of these wastes. In addition, we believe that the trend to line and install groundwater monitoring for new surface impoundments and landfills is positive. However, as some commenters noted, we acknowledge that our state program review looked at the authorities available to states and their overall regulatory requirements, not the specific requirements applied to given facilities, which could be more or less stringent. In addition, we recognize that individual state programs may have some gaps in coverage, as indicated below, so that some controls may not now be required at coal combustion waste impoundments and landfills. We would expect to see some differences in the application of requirements, depending on site-specific conditions.

One consistent trend that raises concern for the Agency is that controls are much less common at surface impoundment than at landfills. Even for newer units at utilities (constructed between 1985 and 1995), liners are used at 75 percent of landfills and only 60 percent of surface impoundments. Also at newer units, groundwater monitoring is implemented at 88 percent of landfills and at only 65 percent of surface impoundments. Approximately one-third of coal combustion wastes were managed in surface impoundments in 1995. Hydraulic pressure in a surface impoundment increases the likelihood of releases. We believe that groundwater monitoring, at a minimum, in existing as well as new impoundments, is a reasonable approach to monitor performance of the unit and a critical first step to addressing groundwater damage that may be caused by the unit. As of 1995, 38 percent of currently operating utility surface impoundments had groundwater monitoring and only 26 percent had liners.

While liners and groundwater monitoring are applied more frequently at landfills, there are still many utility and non-utility landfills that do not have liners. In addition, 15 percent of utility landfills do not have groundwater monitoring, and some six

percent of non-utility landfills do not have groundwater monitoring, based on a limited survey.

The utility industry through its trade associations has demonstrated a willingness to work with EPA to develop protective management practices, and individual companies have committed to upgrading their own practices. However, the Agency recognizes that participation in voluntary programs is not assured. Also, individual facilities and companies may not implement protective management practices and controls, for a variety of reasons, in spite of their endorsement by industry-wide groups.

We see a trend toward significantly improving state programs and voluntary industry investment in liners and groundwater monitoring that we believe can mitigate potential risks over time. However, we identified significant gaps in controls already in place and, in particular, requirements that may be lacking in some states, either in authority to impose the requirements or potentially in exercising that authority. In response to comments, we further analyzed risks posed by coal combustion wastes taking into account waste characteristics and potential and actual damage cases. Based on these analyses, we concluded that coal combustion wastes, in certain circumstances, could unnecessarily increase risks to human health and the environment, and that a number of proven damages have been documented, and that more are likely if we had been able to conduct a more thorough search of available state records and if groundwater monitoring data were available for all units. We recognize there will probably continue to be some gaps in practices and controls and are concerned at the possibility that these will go unaddressed. We also believe the time frame for improvement of current practices is likely to be longer in the absence of federal regulations.

D. What Is the Basis for Today's Decisions?

Based on our collection and analysis of information reflecting the criteria in section 8002(n) of RCRA that EPA must consider in making today's regulatory determination, materials developed in preparing the RTC and supportive background materials, existing state and federal regulations and programs that affect the management of coal combustion wastes, and comments received from the public on the findings we presented in the RTC, we have concluded the following:

1. Beneficial Uses

To the extent coal combustion wastes are used for beneficial purposes, we believe they should continue to remain exempt from being regulated as hazardous wastes under RCRA. Beneficial purposes include waste stabilization, beneficial construction applications (e.g., cement, concrete, brick and concrete products, road bed, structural fill, blasting grit, wall board, insulation, roofing materials), agricultural applications (e.g., as a substitute for lime) and other applications (absorbents, filter media, paints, plastics and metals manufacture, snow and ice control, waste stabilization). For the reasons presented in section 3 below, we are separately addressing the use of coal combustion wastes to fill surface or underground mines.

For beneficial uses other than minefilling, we have reached this decision because: (a) We have not identified any beneficial uses that are likely to present significant risks to human health or the environment; and (b) no documented cases of damage to human health or the environment have been identified. Additionally, we do not want to place any unnecessary barriers on the beneficial use of coal combustion wastes so that they can be used in applications that conserve natural resources and reduce disposal costs.

Disposal can be burdensome and fails to take advantage of beneficial characteristics of fossil fuel combustion wastes. About one-quarter of the coal combustion wastes now generated are diverted to beneficial uses. Currently, the major beneficial uses of coal combustion wastes include: Construction (including building products, road base and sub-base, blasting grit and roofing materials) accounting for approximately 21%; sludge and waste stabilization and acid neutralization accounting for approximately 3%; and agricultural use accounting for 0.1%. Based on our conclusion that these beneficial uses of coal combustion wastes are not likely to pose significant risks to human health and the environment, we support increases in these beneficial uses of coal combustion wastes.

Off-site uses in construction, including wallboard, present low risk due to the coal combustion wastes being bound or encapsulated in the construction materials or because there is low potential for exposure. Use in waste and sludge stabilization and in acid neutralization are either regulated (under RCRA for hazardous waste stabilization or when placed in

municipal solid waste landfills, or under the Clean Water Act in the case of municipal sewage sludge or wastewater neutralization), or appear to present low risk due to low exposure potential. While in the RTC, we expressed concern over risks presented by agricultural use, we now believe our previous analysis assumed unrealistically high-end conditions, and that the risk, which we now believe to be on the order of 10^{-6} , does not warrant national regulation of coal combustion wastes that are used in agricultural applications.

In the RTC, we were not able to identify damage cases associated with these types of beneficial uses, nor do we now believe that these uses of coal combustion wastes present a significant risk to human health or the environment. While some commenters disagreed with our findings, no data or other support for the commenters' position was provided, nor was any information provided to show risk or damage associated with agricultural use. Therefore, we conclude that none of the beneficial uses of coal combustion wastes listed above pose risks of concern.

2. Disposal in Landfills and Surface Impoundments

In this section, we discuss available information regarding the potential risks to human health and the environment from the disposal of coal combustion wastes into landfills and impoundments. In sum, our conclusion is these wastes can pose significant risks when mismanaged and, while significant improvements are being made in waste management practices due to increasing state oversight, gaps in the current regulatory regime remain.

We have determined that the establishment of national regulations is warranted for coal combustion wastes when they are disposed in landfills and surface impoundments, because: (a) The composition of these wastes has the potential to present danger to human health and the environment under some circumstances and "potential" damage cases identified by EPA and commenters, while not definitively demonstrating damage from coal combustion wastes, lend support to our conclusion that these wastes have the potential to pose such danger; (b) we have identified eleven cases of proven damage to human health and the environment by improper management of these wastes when land disposed; (c) while industry management practices have improved measurably in recent years, there is sufficient evidence these wastes are currently being managed in

a significant number of landfills and surface impoundments without proper controls in place, particularly in the area of groundwater monitoring; and (d) while there have been substantive improvements in state regulatory programs, we have also identified significant gaps either in states' regulatory authorities or in their exercise of existing authorities. Moreover, we believe that the costs of complying with regulations that specifically address these problems, while large in absolute terms, are only a small percentage of industry revenues.

When we considered a tailored subtitle C regulatory approach, we estimated the potential costs of regulation of coal combustion wastes (including the utility coal combustion wastes addressed in the 1993 Part 1 determination) to be \$1 billion per year. While large in absolute terms, we estimate that these costs are less than 0.4 percent of industry sales. Our preliminary estimate of impact on profitability is a function of facility size, among other factors. For the larger facilities, we estimate that reported pre-tax profit margins of about 13 percent may be reduced to about 11 percent. For smaller facilities, margins may be reduced from about nine percent to about seven percent.

We identified that the constituents of concern in these wastes are metals, particularly hazardous metals. We further identified that leachate from various large volume wastes generated at coal combustion facilities infrequently exceed the hazardous waste toxicity characteristic for one or more of the following metals: arsenic, cadmium, chromium, lead, and mercury. Additionally, when we compared waste leachate concentrations for hazardous metals to their corresponding MCLs (or potential MCLs in the case of arsenic), we found that there was a potential for risk as a result of arsenic leaching from these wastes. The criteria we examined included the existing arsenic MCL, a lower health based number presented in the RTC, and two assumed values in between. We examined this range of values because, as explained earlier in this notice, EPA is in the process of revising the current MCL for arsenic to a lower value as a result of a detailed study of arsenic in drinking water and we wanted to assess the likely range of values that would be under consideration by EPA. Once we have completed a review of our groundwater model and made necessary changes, we will reevaluate the potential risks from metals in coal combustion wastes and compare any

projected groundwater contamination to the MCLs that exist at that time.

We also identified situations where the improper management of mill rejects, a low volume and uniquely associated waste, with high volume coal combustion wastes has the potential to cause releases of higher quantities of hazardous metals. When these wastes are improperly managed, the mill rejects can create an acidic environment which enhances leachability and can lead to the release of hazardous metals in high concentrations from the co-managed wastes to ground water or surface waters. Thus, our analysis of the characteristics of coal combustion wastes leads us to conclude that these wastes have the potential to pose risk to human health and the environment. We also plan to address such waste management practices in our subsequent rulemaking.

Additionally, we identified 11 proven damage cases that documented disposal of coal combustion wastes in unlined landfills or surface impoundments that involved exceedences of primary MCLs or other health-based standards in ground water or drinking water wells. Three of the proven damage cases were on the EPA Superfund National Priorities List. Although these damage cases indicate that coal combustion wastes can present risks to human health and the environment, they also show the effectiveness of states' responses when damages were identified. All of the sites were at older, unlined units, with disposal occurring prior to 1993. None of these cases involved actual human exposure. Given the large number of facilities that do not now conduct groundwater monitoring, we have a concern that additional cases of damage may be undetected.

As detailed in the RTC and explained earlier in this notice, we identified that the states and affected industry have made considerable progress in recent years toward more effective management of coal combustion wastes. We also identified that the ability for most states to impose specific regulatory controls for coal combustion wastes has increased almost three-fold over the past 15 years. Forty-three states can now impose a liner requirements at landfills whereas 15 years ago, 11 had the same authority. In addition to regulatory permits, the majority of states now have authority to require siting controls, liners, leachate collection, groundwater monitoring, closure controls, and other controls and requirements for surface impoundments and landfills.

Nonetheless, we have concluded that there are still gaps in the actual application of these controls and

requirements, particularly for surface impoundments. While most states now have the appropriate authorities and regulations to require liners and groundwater monitoring that would reduce or minimize the risks that we have identified, we have also identified numerous situations where these controls are not being applied. For example, only 26 percent of utility surface impoundments and 57 percent of utility landfills have liner systems in place. We have insufficient information to determine whether the use of these controls is significantly different for non-utility disposal units, due to a small sample size.

While many of these unlined units may be subject to grandfathering provisions that allow them to continue to operate without being lined, or may not need to be lined due to site-specific conditions, we are especially concerned that a substantial number of units do not employ groundwater monitoring to ensure that if significant releases occur from these unlined units, they will be detected and controlled. In 1995, groundwater was monitored at only 38 percent of utility surface impoundments. While monitoring is more frequent at landfills, there are still many units at which releases of hazardous metals could go undetected. For example, of the approximately 300 utility landfills, 45 newer landfills (15%) do not monitor ground water. We are concerned that undetected releases could cause exceedences of drinking water or other health-based standards that may threaten public health or groundwater and surface water resources. Thus, we conclude that national regulations would lead to substantial improvements in the management of coal combustion wastes.

3. Minefilling

We have determined that the establishment of national regulations is warranted for coal combustion wastes when they are placed in surface or underground mines because: (a) We find that these wastes when minefilled have the potential to present a danger to human health and the environment, (b) minefilling of these wastes has been an expanding practice and there are few states that currently operate comprehensive programs that specifically address the unique circumstances of minefilling, making it more likely that any damage to human health or the environment would go unnoticed or unaddressed, and (c) we believe that the cost of complying with regulations that address these potential dangers may not have a substantial impact on this practice because

minefilling continues to grow in those few states that already have comprehensive programs.

We recognize that at this time, we cannot quantify the nature of damage that may be occurring or may occur in the future as a result of using coal combustion wastes as minefill. It is often impossible to determine if existing groundwater quality has been impacted by previous mining operations or as a result of releases of hazardous constituents from the coal combustion wastes used in minefilling applications. We have not as yet identified proven damage cases resulting from the use of coal combustion wastes for minefilling.

We also acknowledge that when the complexities related to site-specific geology, hydrology, waste chemistry and interactions with the surrounding matrix, and other relevant factors are properly taken into account, coal combustion wastes used as minefill can provide significant benefits. However, when not done properly, minefilling has the potential to contaminate ground water to levels that could damage human health and the environment. Based on materials submitted during the public comment period, coal combustion wastes used as minefill can lead to increases in hazardous metals released into ground water if the acidity within the mine overwhelms the capacity of the coal combustion wastes to neutralize the acidic conditions. This is due to the increased leaching of hazardous metals from the wastes. The potential for this to occur is further supported by data showing that management of coal combustion wastes in the presence of acid-generating pyritic wastes has caused metals to leach from the combustion wastes at much higher levels than are predicted by leach test data for coal combustion wastes when strongly acidic conditions are not present. Such strongly acidic conditions often exist at mining sites.

Although we have identified no damage cases involving minefilling, we are also aware of situations where coal combustion wastes are being placed in direct contact with ground water in both surface and underground mines. We concluded in our recent study of cement kiln dust management practices that placement of cement kiln dust in direct contact with ground water led to a substantially greater release of hazardous metals than we predicted would occur when the waste was placed above the water table. For this reason, we find that there is a potential for increased releases of hazardous metals as a result of placing coal combustion wastes in direct contact with groundwater. Also, there are damage

cases associated with coal combustion wastes in landfills. The Agency believes it is reasonable to be concerned when similar quantities of coal combustion wastes are placed in mines, which often are not engineered disposal units and in some cases involve direct placement of wastes into direct contact with ground water.

We are concerned that government oversight is necessary to ensure that minefilling is done appropriately to protect human health and the environment, particularly since minefilling is a recent, but rapidly expanding use of coal combustion wastes. Government oversight has not yet "caught up" with the practice consistently across the country. There are some states that have programs that specifically address minefilling practices. We are likely to find that their programs or certain elements of their programs could serve as the basis for a comprehensive, flexible set of national management standards that ensure protection of human health and the environment. We also believe that these state programs will provide valuable experience in coordinating with SMCRA program requirements. However, at this time, few of the programs are comprehensive. Commenters pointed out, and we agree, there are significant gaps in other states. We believe that additional requirements for long-term groundwater monitoring, and controls on wastes placed directly into groundwater might be prudent.

E. What Approach Will EPA Take in Developing National Regulations?

We will not promulgate any regulations for beneficial uses other than minefilling. We do not wish to place any unnecessary barriers on the beneficial use of fossil fuel combustion wastes so that they can be used in applications that conserve natural resources and reduce disposal costs.

Once we concluded there is a need for some form of national regulation of coal combustion wastes disposed in landfills and surface impoundments and used as minefill, we considered two approaches. One approach would involve promulgating subtitle D regulations, pursuant to sections 1008 and 4004(a) of RCRA, that would contain criteria defining landfills and impoundments that would constitute "sanitary landfills." Any facility that failed to meet the standards would constitute an open dump, which is prohibited by section 4005(a) of RCRA. Such standards would set a consistent baseline for protective management throughout the country. We would also work with the Department of Interior,

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Office of Surface Mining to evaluate whether equivalent protectiveness for minefilling could be afforded by relying on revision of existing SMCRA regulations or by relying on a combination of RCRA and SMCRA authorities.

The second approach was to promulgate regulations pursuant to Subtitle C of RCRA, that would have been similar to our recent proposed regulation of cement kiln dust. Following this approach, EPA would develop national management standards based on the Subtitle D open dump criteria as discussed above, as well as a set of tailored Subtitle C requirements promulgated pursuant to RCRA section 3004(x). If the wastes were properly managed in accordance with the subtitle D-like standards, they would not be classified as hazardous wastes. When they were not properly managed, they would become listed hazardous wastes subject to tailored subtitle C standards. This scheme would be effective in each state authorized for the hazardous waste program when that state modified its hazardous waste program to incorporate the listing.

Under this approach, after states have adopted the contingent listing, facilities that have egregious or repeated violations of the management standards would be moved into the subtitle C program (subject to the tailored RCRA 3004 (x) requirements, rather than to the full set of subtitle C requirements). Thus, EPA would have authority to enforce the management standards.

The decision whether to establish regulations under subtitle C or D of RCRA for disposal of coal combustion wastes in landfills and surface impoundments and when minefilled was a difficult one. EPA believes that, in this case, either approach would ensure adequate protection of public health and the environment. Either subtitle C or D provides EPA with the authority to prescribe protective standards for the management of these wastes. Moreover, as described above, the standards that EPA would adopt under either regime, because of the flexibility provided by section 3004 (x), would be substantively the same. Also, under either approach, a facility that fails to comply with the standards is in violation of RCRA—in the case of subtitle C, the facility would be in violation of the tailored standards promulgated under section 3004(x). In the case of subtitle D, the facility would be in violation of the prohibition in section 4005(a) of RCRA against "open dumping." The prohibition against open dumping is, however, enforceable only by private citizens and states, not EPA.

Management standards established under the authority of subtitle C (including tailored section 3004(x) standards) are also enforceable by EPA. It appears that more than 40 states already have sufficient authority to implement most, if not all of the national standards we contemplate would be appropriate for surface impoundments and landfills. One difference between the two regimes may be that states could cite revised subtitle D standards as a basis for exercising their existing authorities more vigorously, potentially promoting swifter adoption of appropriate controls for surface impoundments and landfills. In addition, subtitle D standards would be applicable and enforceable by citizens as soon as the federal rule becomes effective. Subtitle C standards in contrast, would not apply until incorporated into state subtitle C programs. For minefilling, we would also explore SMCRA as a possible mechanism to speed implementation, even if we relied on subtitle D to establish protective standards, because minefilling operations already are subject to SMCRA permitting authority.

Taking into account the common and distinct features of these alternative approaches, EPA believes at this time, based on the current record, that subtitle D regulations are the more appropriate mechanism for a number of reasons. In view of the very substantial progress that states have made in regulating disposal of fossil fuel combustion wastes in surface impoundments and landfills in recent years, as well as the active role that this industry has played recently in facilitating responsible waste disposal practices, EPA believes that subtitle D controls will provide sufficient clarity and incentive for states to close the remaining gaps in coverage, and for facilities to ensure that their wastes are managed properly.

For minefilling, although we have considerable concern about certain current practices (e.g., placement directly into groundwater), we have not yet identified a case where placement of coal wastes can be determined to have actually caused increased damage to ground water. In addition, there is a federal regulatory program—SMCRA—expressly designed to address environmental risks associated with coal mines. Finally, given that states have been diligent in expanding and upgrading programs for surface impoundments and landfills, we believe they will be similarly responsive in addressing environmental concerns arising from this emerging practice. In short, we arrive at the same conclusions, for substantially the same reasons, for

this practice as we did for landfills and surface impoundments: that subtitle D controls, or upgraded SMCRA controls or a combination of the two, should provide sufficient clarity and incentive to ensure proper handling of this waste when minefilled. Having determined that subtitle C regulation is not warranted for all other management practices, EPA does not see a basis in the record for carving this one practice out for separate regulatory treatment.

Once these subtitle D regulations are effective, facilities would be subject to citizen suits for any violation of the standards. If EPA were addressing wastes that had not been addressed by the states (or the federal government) in the past, or an industry with wide evidence of irresponsible solid waste management practices, EPA may well conclude that the additional incentives for improvement and compliance provided by the subtitle C scheme—the threat of federal enforcement and the stigma associated with improper management of RCRA subtitle C waste—were necessary. But the record before us indicates that the structure and the sanctions associated with a subtitle D approach (or a SMCRA approach if EPA determines it is equivalent) should be sufficient.

We also see a potential downside to pursuing a subtitle C approach. Section 8002(n)(8) directs us to consider, among other factors, "the current and potential utilization of such materials." Industry commenters have indicated that they believe subjecting any coal combustion wastes to a subtitle C regime would place a significant stigma on these wastes, the most important effect being that it would adversely impact beneficial reuse. As we understand it, the concern is that, even though beneficially reused waste would not be hazardous under the contemplated subtitle C approach, the link to subtitle C would nonetheless tend to discourage purchase and re-use of the wastes or products made from the wastes. We do not wish to place any unnecessary barriers on the beneficial uses of these wastes, because they conserve natural resources, reduce disposal costs and reduce the total amount of waste destined for disposal. States and industry have also expressed concern that regulation under subtitle C could cause a halt in the use of coal combustion wastes to reclaim abandoned and active mine sites. If this were to occur, it would be unfortunate in that when done properly, we recognize this practice can lead to substantial environmental benefits. EPA believes the contingent management scheme we discussed should diminish

any stigma that might be associated with the subtitle C link. Nonetheless, we acknowledge the possibility that the approach could have unintended consequences. We would be particularly concerned about any adverse effect on the beneficial re-use market for these wastes because more than 23 percent (approximately 28 million tons) of the total coal combustion waste generated each year is beneficially reused and an additional eight percent (nine million tons) is used for minefilling. EPA believes that such reuse when performed properly, is by far the environmentally preferable destination for these wastes, including when minefilled. Normally, concerns about stigma are not a deciding factor in EPA's decisions under RCRA, given the central concern under the statute for protection of human health and the environment. However, given our conclusion that the subtitle D approach here should be fully effective in protecting human health and the environment, and given the large and salutary role that beneficial reuse plays for this waste, concern over stigma is a factor supporting our decision today that subtitle C regulation is unwarranted in light of our decision to pursue a subtitle D approach.

As we proceed with regulation development, we will also take enforcement action under RCRA section 7003 when we identify cases of imminent and substantial endangerment. We will also use Superfund remedial and emergency response authorities under the Comprehensive Environmental Response Compensation and Liabilities Act (CERCLA), as appropriate, to address damages that result in risk to human health and the environment. We will also take into account new information as it becomes available. We are awaiting a National Academy of Sciences report scheduled to be released in June 2000. This report will present a comprehensive review of mercury and recommendations on appropriate adverse health effects levels for this constituent. We believe that this report will enhance our understanding of the risks due to exposure to mercury, and we will review and assess its implications for today's decision on fossil fuel combustion wastes. These efforts may result in a re-evaluation of the risks posed by managing coal combustion wastes.

3. What Is the Basis for EPA's Regulatory Determination for Oil Combustion Wastes?

A. What Is the Agency's Decision Regarding the Regulatory Status of Oil Combustion Wastes and Why Did EPA Make This Decision?

We have determined that it is not appropriate to issue regulations under subtitle C of RCRA applicable to oil combustion wastes because: (a) We have not identified any beneficial uses that are likely to present significant risks to human health or the environment; and (b) except for a limited number of unlined surface impoundments, we have not identified any significant risks to human health and the environment associated with any waste management practices.

We intend to work with the State of Massachusetts and the owners and operators of the remaining two oil combustion facilities that currently manage their wastes in unlined surface impoundments to ensure that their wastes are managed in a manner that protects human health and the environment.

B. What Were EPA's Tentative Decisions as Presented in the Report to Congress and Why Did EPA Make That Decision?

In the Report to Congress, we stated that the only management scenario for which we found risks posed by management of oil combustion wastes was when oil combustion wastes are managed in unlined surface impoundments. The Report to Congress further explained that we were considering two approaches to address these identified risks. One approach was to regulate using RCRA subtitle C authority. The other approach was to encourage voluntary changes so that no oil combustion wastes are managed in unlined surface impoundments. This voluntary approach is based on recent industry and state regulatory trends to line oil combustion waste disposal units and implement groundwater monitoring.

We also tentatively decided that the existing beneficial uses of oil combustion wastes should remain exempt from RCRA subtitle C. There are few existing beneficial uses of these wastes, which include use in concrete products, structural fill, roadbed fill, and vanadium recovery. We determined that no significant risks to human health exist for the beneficial uses of these wastes. For the case of facilities that accept these wastes to recover vanadium from them, we explained that if the wastes resulting from the metal recovery processes are hazardous, they will be

subject to existing hazardous waste requirements.

We found in most cases that OCW, whether managed alone or co-managed, are rarely characteristically hazardous. Additionally, we identified no significant ecological risks posed by land disposal of OCW. We identified only one documented damage case involving OCW in combination with coal combustion wastes, and it did not affect human receptors.

Although most of the disposed oil combustion wastes are managed in lined surface impoundments, we did identify six utility sites where wastes are managed in unlined units. We expressed particular concern with management of these wastes in unlined settling basins and impoundments that are designed and operated to discharge the aqueous portion of the wastes to ground water. Our risk analysis indicated that, in these situations, three metals—arsenic, nickel, and vanadium—may pose potential risk by the groundwater pathway.

C. How Did Commenters React to EPA's Tentative Decisions and What Was EPA's Analysis of Their Comments?

Because we were able to identify so few unlined surface impoundments, the only management scenario for which we found risks, the primary focus of the comments regarding oil combustion wastes was on the six unlined surface impoundments that we identified. In addition, there were extensive comments on our modeling and risk assessment methodology for the groundwater pathway that are applicable to our assessment of risks posed by oil combustion wastes.

1. How Did Commenters React to the Six Unlined Oil Combustion Waste Surface Impoundments That We Identified?

Comments. Industry commenters supported the approach to encourage voluntary changes in industry practices on a site-specific basis, and explained why they believed hazardous waste regulations are unnecessary. The environmental community supported the development of hazardous waste regulations.

EPA's Analysis of Comments. In the RTC, we identified that our only concern about oil combustion wastes was based on the potential for migration of arsenic, nickel, and vanadium from unlined surface impoundments. We requested information on this issue and did not receive any additional data and/or information to refute our tentative finding stated in the RTC that these

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unlined surface impoundments could pose a significant risk.

As stated in the RTC, there are only six sites involving two companies that have unlined surface impoundments. Four of the sites are in Florida and are operated by one company. The company operating the four unlined impoundments in Florida is undertaking projects to mitigate potential risks posed by their unlined management units. At a May 21, 1999 public hearing, the company announced its plans to remove all the oil ash and basin material from its unlined impoundments and to line or close the units. The company informed us in January 2000 that it had completed the lining of all the units. Based on this information, we do not believe that these units pose a significant risk to human health and the environment.

The other two sites with unlined impoundments are operated by one utility in Massachusetts. Both sites are permitted under Massachusetts' ground water discharge permit program and have monitoring wells around the unlined basins. Arsenic is monitored for compliance with state regulations. Although the company expressed no plans to line their impoundments, they are preparing to implement monitoring for nickel and vanadium in ground water around the waste management units. We have been working with the State and the company to obtain additional information to evaluate these two management units. We will continue this effort and will work with the company and the State to ensure that any necessary measures are taken so that these wastes are managed in a manner that protects human health and the environment.

2. How Did Commenters React to the Groundwater Modeling and Risk Assessment Analyses Conducted by EPA to Support Its Findings in the Report to Congress?

Comments. Industry and public interest group commenters submitted detailed critiques of the ground water model, EPACMTP, that we used for our risk analysis. Industry commenters believe that the model will overestimate the levels of contaminants that may migrate down-gradient from disposed wastes. Environmental groups expressed the opposite belief; that is, that the model underestimates down-gradient chemical concentrations and, therefore, underestimates the potential risk posed by oil combustion wastes.

EPA's Analysis of the Comments. We are carefully reviewing all of the comments on the model and have determined that the process of

thoroughly investigating all of the comments will take substantially more time to complete than is available within the court deadline for issuing this regulatory determination. At this time, we are uncertain of the overall outcome of our analysis of the issues raised in the comments. Accordingly, we have decided not to use the results of our ground water pathway risk analysis in support of today's regulatory determination on fossil fuel combustion wastes. As explained above, we believe that actions have been taken or are under way by specific companies and/or the State of Massachusetts to address potential risks at the six impoundments that we have been able to identify. Therefore we believe that further groundwater analysis is unnecessary at this time.

Meanwhile, we will continue with our analysis of comments on the groundwater model and risk analysis. This may involve changing or restructuring various aspects of the model, if appropriate. It may also include additional analyses to determine whether any changes to the model or modeling methodology would materially affect the groundwater risk analysis results that were reported in the RTC. If our investigations reveal that a reanalysis of groundwater risks is appropriate, we will conduct the analysis and reevaluate today's decisions as appropriate.

In addition to our ongoing review of comments on the groundwater model, one element of the model—the metals partitioning component called "MINTEQ"—has been proposed for additional peer review. When this additional peer review is completed, we will take the findings and recommendations into account in any overall decision to re-evaluate today's regulatory determination.

D. What Is the Basis for Today's Decisions?

We have determined that it is not appropriate to establish national regulations applicable to oil combustion wastes because: (a) We have not identified any beneficial uses that are likely to present significant risks to human health or the environment; and (b) except for two remaining unlined surface impoundments, we have not identified any significant risks to human health and the environment associated with any waste management practices. As explained in the previous section, we intend to work with the State of Massachusetts and the owners and operators of the remaining two oil combustion facilities that currently manage their wastes in unlined surface

impoundments to ensure that any necessary measures are taken so that their wastes are managed in a manner that protects human health and the environment. Given the limited number of sites at issue and our ability to adequately address risks from these waste management units through site-specific response measures, we see no need for issuing regulations under subtitle C or D of RCRA.

4. What Is the Basis for EPA's Regulatory Determination for Natural Gas Combustion Wastes?

A. What Is the Decision Regarding the Regulatory Status of Natural Gas Combustion Wastes?

For the reasons described in the Report to Congress (pages 7–1 to 7–3), EPA has decided that regulation of natural gas combustion wastes as hazardous wastes under RCRA subtitle C or D is not warranted. The burning of natural gas generates virtually no solid waste.

B. What Was EPA's Tentative Decision as Presented in the Report to Congress?

The Agency's tentative decision was to retain the subtitle C exemption for natural gas combustion because virtually no solid waste is generated.

C. How Did Commenters React to EPA's Tentative Decision?

No commenters on the RTC disagreed with EPA's findings or its tentative decision to continue the exemption for natural gas combustion wastes.

Specific comments on this issue supported our tentative decision to retain the exemption for natural gas combustion waste. One industry association encouraged us to foster the use of natural gas as a substitute for other fossil fuels. While some public interest group commenters disagreed broadly with our tentative conclusions to retain the exemption for fossil fuel combustion wastes, they did not specifically address natural gas combustion wastes.

D. What Is the Basis for Today's Decision?

The burning of natural gas generates virtually no solid waste. We, therefore, believe that there is no basis for EPA developing subtitle C or D regulations applicable to natural gas combustion wastes.

5. What Is the History of EPA's Regulatory Determinations for Fossil Fuel Combustion Wastes?

A. On What Basis Is EPA Required To Make Regulatory Determinations Regarding the Regulatory Status of Fossil Fuel Combustion Wastes?

Section 3001(b)(3)(C) of the Resource Conservation and Recovery Act (RCRA) as amended requires that, after completing a Report to Congress mandated by section 8002(n) of RCRA, the EPA Administrator must determine whether Subtitle C (hazardous waste) regulation of fossil fuel combustion wastes is warranted.

B. What Was EPA's General Approach in Making These Regulatory Determinations?

We began our effort to make our determination of the regulatory status of fossil fuel combustion wastes by studying high volume coal combustion wastes managed separately from other fossil fuel combustion wastes that are generated by electric utilities. In February 1988, EPA published the Report to Congress on Wastes from the Combustion of Coal by Electric Utility Power Plants. The report addressed four large-volume coal combustion wastes generated by electric utilities and independent power producers when managed alone. The four wastes are fly ash, bottom ash, boiler slag, and flue gas desulfurization (FGD) wastes. The report did not address co-managed utility coal combustion wastes (UCCWs), other fossil fuel wastes generated by utilities, or wastes from non-utility boilers burning any type of fossil fuel. Because of other priorities at the time, we did not immediately complete a determination of the regulatory status of these large-volume coal combustion wastes.

C. What Happened When EPA Failed To Issue Its Determination of the Regulatory Status of the Large Volume Utility Combustion Wastes in a Timely Manner?

In 1991, a suit was filed against EPA for not completing a regulatory determination on fossil fuel combustion wastes (*Gearhart v. Reilly*, Civil No. 91-2345 (D.D.C.)). On June 30, 1992, the Agency entered into a Consent Decree that established a schedule for us to complete the regulatory determination for all fossil fuel combustion wastes in two phases:

- The first phase covers fly ash, bottom ash, boiler slag, and flue gas emission control wastes from the combustion of coal by electric utilities and independent commercial power

producers. These are the four large volume wastes that were the subject of the 1988 Report to Congress described above. We refer to this as the Part 1 regulatory determination.

- The second phase covers all of the "remaining" fossil fuel combustion wastes not covered in the Part 1 regulatory determination. We refer to this as the Part 2 regulatory determination, which is the subject of today's action. Under the current court-order, EPA was directed to issue the Part 2 regulatory determination by April 25, 2000.

D. When Was the Part 1 Regulatory Decision Made and What Were EPA's Findings?

In 1993, EPA issued the Part 1 regulatory determination, in which we retained the exemption for Part 1 wastes (see 58 FR 42466; August 9, 1993). The four Part 1 large-volume utility coal combustion wastes (UCCWs) are also addressed in the Part 2 regulatory determination when they are co-managed with low-volume fossil fuel combustion wastes not covered in the Part 1 determination.

6. Executive Orders and Laws Addressed in Today's Action

A. Executive Order 12866—Determination of Significance

Under Executive Order 12866, (58 FR 51735, Oct. 4, 1993) we must determine whether the regulatory action is "significant" and therefore subject to review by the Office of Management and Budget (OMB) and the requirements of the Executive Order. The Order defines "significant regulatory action" as one that is likely to result in a rule that may:

- Have an annual effect on the economy of \$100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or tribal governments or communities;
- Create a serious inconsistency or otherwise interfere with an action taken or planned by another agency;
- Materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof; or
- Raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles in the Executive Order."

Under Executive Order 12866, this is a "significant regulatory action." Thus, we have submitted this action to OMB for review. Changes made in response to OMB suggestions or recommendations are documented in the public record.

B. Regulatory Flexibility Act (RFA), as Amended by the Small Business Regulatory Enforcement Fairness Act of 1996 (SBREFA), 5 U.S.C. 601 et seq.

Today's action is not subject to the RFA, which generally requires an agency to prepare a regulatory flexibility analysis for any rule that will have a significant economic impact on a substantial number of small entities. The RFA applies only to rules subject to notice-and-comment rulemaking requirements under the Administrative Procedure Act (APA) or any other statute. This action is not subject to notice and comment requirements under the APA or any other statute. Today's action is being taken pursuant to section 3001(b)(3)(C) of the Resource Conservation and Recovery Act. This provision requires EPA to make a determination whether to regulate fossil fuel combustion wastes after submission of its Report to Congress and public hearings and an opportunity for comment. This provision does not require the publication of a notice of proposed rulemaking and today's action is not a regulation. See *American Portland Cement Alliance v. E.P.A.*, 101 F.3d 772 (D.C.Cir. 1996).

C. Paperwork Reduction Act Information Collection Requests

Today's final action contains no information collection requirements.

D. Unfunded Mandates Reform Act

Today's action is not subject to the requirements of sections 202 and 205 of the Unfunded Mandates Reform Act of 1995 (UMRA), Public Law 104-4. Title II of UMRA establishes requirements for federal agencies to assess the effects of their regulatory actions on state, local, and tribal governments and the private sector. Under section 202 of the UMRA, EPA generally must prepare a written statement, including a cost-benefit analysis, for proposed and final rules with "federal mandates" that may result in expenditures to state, local, and tribal governments, in the aggregate, or to the private sector, of \$100 million or more in any one year.

Before we issue a rule for which a written statement is needed, section 205 of the UMRA generally requires us to identify and consider a reasonable number of regulatory alternatives and adopt the least costly, most cost-effective, or least burdensome alternative that achieves the rule's objectives. Section 205 doesn't apply when it is inconsistent with applicable law. Moreover, section 205 allows us to adopt an alternative other than the least costly, most cost-effective, or least

burdensome alternative if the final rule explains why that alternative was not adopted. Before we establish any regulatory requirements that may significantly affect small governments, including tribal governments, we must have developed under section 203 of the UMRA a small-government-agency plan. The plan must provide for notifying potentially affected small governments, enabling them to have meaningful and timely input in the developing EPA regulatory proposals with significant federal intergovernmental mandates, and informing, educating, and advising small governments on compliance with the regulatory requirements.

Today's final action contains no federal mandates (under the regulatory provisions of Title II of the UMRA) for state, local, or tribal governments or the private sector. Today's final action imposes no enforceable duty on any state, local or tribal governments or the private sector.

In addition, we have determined this action contains no federal mandate that may result in expenditures of \$100 million or more for state, local, and tribal governments, in the aggregate, or the private sector in any one year.

E. Executive Order 13132: Federalism

Executive Order 13132, entitled Federalism (64 FR 43255, August 10, 1999) requires us to develop an accountable process to ensure meaningful and timely input by state and local officials in the development of regulatory policies that have federalism implications. The executive order defines policies that have federalism implications to include regulations that have substantial direct effects on the states, on the relationship between the national government and the states, or on the distribution of power and responsibilities among the various levels of government.

Under section 6 of Executive Order 13132, we may issue a regulation that has federalism implications, that imposes substantial direct compliance costs, and that isn't required by statute, only if the federal government provides funds the direct compliance costs incurred by state and local governments, or if EPA consults with state and local officials early in the development of the proposed regulation. Also, EPA may issue a regulation that has federalism implications and that preempts state law, only if we consult with state and local officials early in the development of the proposed regulation.

If EPA complies by consulting, Executive Order 13132 requires us to provide OMB, in a separately identified section of the rule's preamble, a

federalism summary impact statement (FSIS). The FSIS must describe the extent of our prior consultation with state and local officials, summarizing the nature of their concerns and our position supporting the need for the regulation, and state the extent to which the concerns of state and local officials have been met. Also, when we transmit a draft final rule with federalism implications to OMB for review under Executive Order 12866, our federalism official must include a certification that EPA has met the requirements of Executive Order 13132 in a meaningful and timely manner.

Today's final action does not have federalism implications. It will not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government, as specified in Executive Order 13132. This is because no requirements are imposed by today's action, and EPA is not otherwise mandating any state or local government actions. Thus, the requirements of section 6 of the Executive Order do not apply to this final action.

F. Executive Order 13084: Consultation and Coordination With Indian Tribal Governments

Under Executive Order 13084, EPA may take an action that isn't required by statute, that significantly or uniquely affects the communities of Indian tribal governments, and that imposes substantial direct compliance costs on those communities, only if the federal government provides the funds necessary to pay the direct compliance costs incurred by the tribal governments or EPA consults with those governments. If EPA complies by consulting, Executive Order 13084 requires us to describe in a separately identified section of the preamble to the rule the extent of our prior consultation with representatives of affected tribal governments, summarizing of the nature of their concerns, and state the need for the regulation. Also, Executive Order 13084 requires EPA to develop an effective process permitting elected officials and other representatives of Indian tribal governments "to provide meaningful and timely input in the development of regulatory policies on matters that significantly or uniquely affect their communities."

Today's final action does not significantly or uniquely affect the communities of Indian tribal governments. This is because today's action by EPA involves no regulations or other requirements that significantly

or uniquely affect Indian tribal governments. So, the requirements of section 3(b) of Executive Order 13084 do not apply to this action.

G. Executive Order 13045: Protection of Children From Environmental Health Risks and Safety Risks

"Protection of Children from Environmental Health Risks and Safety Risks" (62 FR 19885, April 23, 1997) applies to any rule that: (1) Is "economically significant" as defined under Executive Order 12866, and (2) concerns an environmental health or safety risk that EPA has reason to believe may have a disproportionate effect on children. If the regulatory action meets both criteria, we must evaluate the environmental health or safety effects of the planned rule on children and explain why the planned regulation is preferable to other potentially effective and reasonably feasible alternatives considered by the Agency.

Today's final action isn't subject to the Executive Order because it is not economically significant as defined in Executive Order 12866, and because we have no reason to believe the environmental health or safety risks addressed by this action present a disproportionate risk to children. Risks were thoroughly evaluated during the course of developing today's decision and were determined not to disproportionately affect children.

H. National Technology Transfer and Advancement Act of 1995

As noted in the proposed rule, section 12(d) of the National Technology Transfer and Advancement Act of 1995 ("NTTAA"), Public Law. No. 104-113, section 12(d) (15 U.S.C. 272 note) directs EPA to use voluntary-consensus standards in its regulatory activities unless doing so would be inconsistent with applicable law or otherwise impractical. Voluntary-consensus standards are technical standards (such as materials specifications, test methods, sampling procedures, and business practices) that are developed or adopted by voluntary-consensus standards bodies. The NTTAA directs us to explain to Congress, through OMB, when we decide not to use available and applicable voluntary-consensus standards.

Today's final action involves no technical standards. So, EPA didn't consider using any voluntary-consensus standards.

**I. Executive Order 12898:
Environmental Justice**

EPA is committed to addressing environmental justice concerns and is assuming a leadership role in environmental justice initiatives to enhance environmental quality for all populations in the United States. The Agency's goals are to ensure that no segment of the population, regardless of race, color, national origin, or income bears disproportionately high and adverse human health or environmental impacts as a result of EPA's policies, programs, and activities, and that all people live in safe and healthful environments. In response to Executive Order 12898 and to concerns voiced by many groups outside the Agency, EPA's Office of Solid Waste and Emergency Response formed an Environmental Justice Task Force to analyze the array of environmental justice issues specific to waste programs and to develop an overall strategy to identify and address

these issues (OSWER Directive No. 9200.317).

J. Congressional Review Act

The Congressional Review Act, 5 U.S.C. 801 *et seq.*, as added by the Small Business Regulatory Enforcement Fairness Act of 1996, does not apply because this action is not a rule for purposes of 5 U.S.C. 804(3). Rather, this action is an order as defined by 5 U.S.C. 551(6).

7. How To Obtain More Information

Documents related to this regulatory determination, including EPA's response to the public comments, are available for inspection in the docket. The relevant docket numbers are: F-99-FF2D-FFFFF for the regulatory determination, and F-99-FF2P-FFFFF for the RTC. The RCRA Docket Information Center (RIC), is located at Crystal Gateway I, First Floor, 1235 Jefferson Davis Highway, Arlington, VA.

The RIC is open from 9 a.m. to 4 p.m., Monday through Friday, excluding Federal holidays. To review docket materials, it is recommended that the public make an appointment by calling 703-603-9230. The public may copy a maximum of 100 pages from any regulatory docket at no charge. Additional copies cost \$0.15/page. The index and some supporting materials are available electronically. See the Supplementary Information section for information on accessing them.

List of Subjects in 40 CFR Part 261

Fossil fuel combustion waste, Coal combustion, Gas combustion, Oil combustion, Special wastes, Bevill exemption

Dated: April 25, 2000.

Carol M. Browner,
Administrator.

[FR Doc. 00-11138 Filed 5-19-00; 8:45 am]

BILLING CODE 6560-50-U

**pg 1 of 104 pgs
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in the docket
KSM*

MEMORANDUM

COMMONWEALTH OF VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

DIVISION OF WATER PROGRAM COORDINATION

SUBJECT: Guidance Memorandum No. 98 - 2010
VPDES Permit and VPA Permit Ground Water Monitoring Plans

TO: Regional Directors

FROM: Larry Lawson, P.E., Division Director

DATE: September 30, 1998

COPIES: Regional Permit Managers, Regional Water Permit Managers, Regional Remediation Program Managers, Regional Compliance and Enforcement Managers, Martin Ferguson, Alan Anthony, Andy Hagelin, Hassan Vakili, Terry Wagner (without attachment)

The Department of Environmental Quality is charged with the protection of state waters and the issuance of VPDES and VPA permits is one way of accomplishing that goal. The State Water Control Law (62.1-44.3) provides a definition of state waters which is inclusive of ground water. The ground water standards (9 VAC 25-260-190) sets forth the approach that DEQ should take in considering potential permits and it states as follows:

"In order to prevent the entry of pollutants into groundwater occurring in any aquifer, a soil zone or alternate protective measure or device sufficient to preserve and protect present and anticipated uses of ground water shall be maintained at all times. Zones for mixing wastes with ground water may be allowed, upon request, but shall be determined on a case-by-case basis and shall be kept as small as possible."

Ground water monitoring has been addressed in both VPDES and VPA permits for many years; however, the various approaches from region to region may not have been consistent. Thus, in early August 1997, a ground water committee was established for the purpose of developing a guidance document on ground water monitoring, with specific emphasis on VPDES and VPA permitting. This guidance, which is attached, is to assist the regional offices in making consistent decisions on various ground water issues given fairly similar situations. In addition, it addresses issues as 1) when to require ground water monitoring, 2) monitoring well installation, 3) parameters to consider for monitoring, 4) proper sampling and

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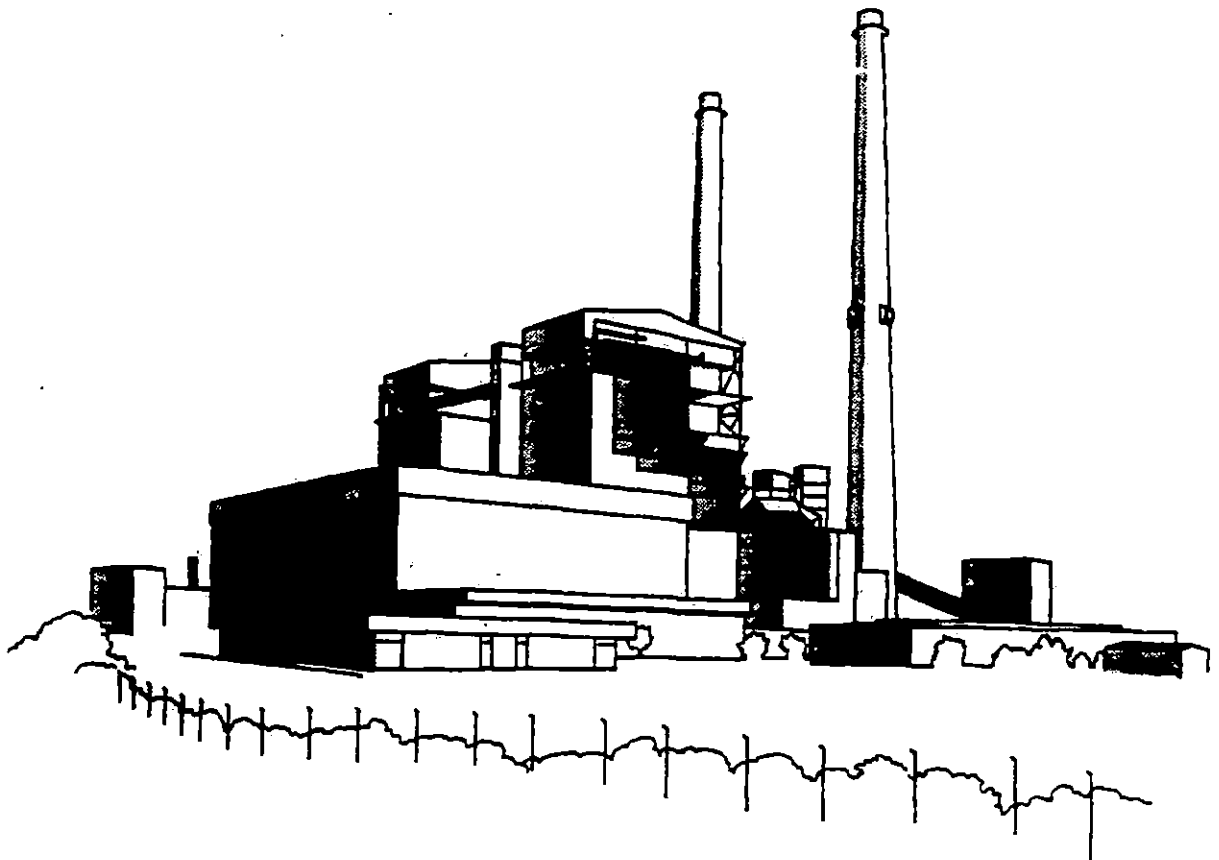


Solid Waste

Report to Congress

Appendices

Wastes from the Combustion of Coal by Electric Utility Power Plants





COMMONWEALTH of VIRGINIA

STATE WATER CONTROL BOARD

2111 Hamilton Street

MAY 14 1991

Richard N. Burton
Executive Director

Post Office Box 11143
Richmond, Virginia 23230-1143
(804) 367-0056

CERTIFIED MAIL
RETURN RECEIPT REQUESTED
P 620 918 395

VEPCO
Innsbrook Technical Center
5000 Dominion Boulevard
Glen Allen, Virginia 23060

Attention: Environmental Compliance Unit

Re: Cancellation of Consent Special Order - Possum Point
Plant

Dear Sir or Madam:

Based on a review of regional and enforcement files in the above referenced matter, it appears that the requirements of the above referenced consent special order (hereinafter the "Order"), issued on September 12, 1989 have either been substantially fulfilled, or, if not fulfilled, incorporated into the newly reissued VPDES permit for the Possum Point facility. Accordingly, I am prepared to recommend to the State Water Control Board, at its next quarterly meeting on June 24, 1991, that the Order be cancelled, and hereby give you the notice of cancellation required by the Order. Should you have any questions or concerns regarding the cancellation proceeding, please do not hesitate to contact me at (804) 367-6811.

Sincerely,

A handwritten signature in cursive script, appearing to read "Kathleen F. O'Connell".

Kathleen F. O'Connell

cc: Jan Pickerel, SWCB, NRO
Steve Hetrick, SWCB, VRO



COMMONWEALTH of VIRGINIA

STATE WATER CONTROL BOARD

2111 Hamilton Street

Richard N. Burton
Executive Director

Post Office Box 11143
Richmond, Virginia 23230-1143
(804) 367-0056

STATE WATER CONTROL BOARD ENFORCEMENT ACTION

A SPECIAL ORDER

ISSUED TO

Virginia Power, Possum Point Station 9/12/89

This Special Order (hereinafter referred to as the "Order") is hereby issued by the State Water Control Board (hereinafter referred to as the "Board"), under the authority of Section 62.1-44.15(8a) of the Code of Virginia of 1950, as amended, (hereinafter referred to as the "Code"), to the Virginia Electric and Power Company (hereinafter referred to as "Virginia Power").

Virginia Power owns and operates an industrial wastewater treatment facility (hereinafter referred to as the "Facility"), which serves the Possum Point Power Station, and which is located in Dumfries, Virginia. The Facility discharges wastewater to State waters at Quantico Creek and the Potomac River Basin. Discharge of wastewater from the Facility is the subject of VPDES permit No. VA0002071 (hereinafter the "Permit"), which became effective April 26, 1985, and which will expire April 26, 1990.

Under a prior special order, effective April 14, 1987, Virginia Power was required to study groundwater contamination in the area of its two fly ash disposal ponds, D & E (hereinafter referred to as the "Site") at the Possum Point Power Station. The results of the study indicate that groundwater monitoring and remediation is required at the Site. Accordingly, the Board orders Virginia Power and Virginia Power agrees to implement the groundwater remediation and monitoring plan contained in Appendix A hereto and incorporated herein by reference.

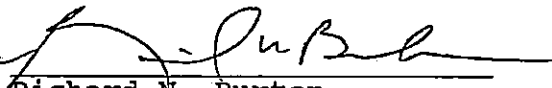
Virginia Power waives its rights to service of, a hearing on, written findings of fact and conclusions of law in support of, and judicial review of this Order. Virginia Power agrees that the Board may cancel this Order, in its sole discretion, upon thirty days written notice, and that otherwise, the Order may be

modified only with Virginia Power's consent or after due notice and opportunity for hearing.

This Order shall become effective upon the date of its execution by the Board's Executive Director or his designee.


And it is SO ORDERED this 12 day of Sept, 1989.

State Water Control Board


Richard N. Burton
Executive Director

The terms and conditions of this Order are hereby voluntarily agreed to by the Virginia Electric and Power Company:

Virginia Electric and Power
Company

By: 
VP-F&H (Title)
Date: 2/6/89

State of Virginia
City/County of Henrico

The foregoing Order was executed before me this 12th day of June, 1989, by E. Wayne Harrell, V.P. - Facilities & Maintenance of Virginia Electric and Power Company, on behalf of said company.


Notary Public

My Commission Expires: February 1, 1992

APPENDIX A

GROUNDWATER REMEDIATION AND MONITORING PLAN

In order to address potential and existing groundwater contamination at the Site, Virginia Power shall:

1. Remediate the Site in accordance with the Final Conceptual Design Report for Dry Waste Disposal Site and Metals Pond Rehabilitation and Corrective Action Plan (hereinafter the "Corrective Action Plan"), prepared by GAI Consultants, Inc., dated November, 1988, and previously submitted to the Board, and shall additionally:
 - a. Submit to the Board's Northern Regional Office, on or before forty-five (45) days after the effective date of this Order, a water balance, affirming that the capacity of the metals pond and Pond E is adequate for treatment and/or neutralization of all incoming flow;
 - b. Submit to the Board's Northern Regional Office by December 19, 1989, the recommendation of consulting engineers concerning the treatment of any leachate collected from the dry waste disposal site. The method of leachate treatment selected should ensure that proper pH levels can be maintained in said leachate;
 - c. Submit an amended Construction Schedule with reference dates to the Board's Northern Regional Office within sixty (60) days of the effective date of this Order. Both the Board and Virginia Power recognize that construction schedule dates are predicated upon timely receipt of appropriate permits and approvals from Prince William County, the Virginia Department of Waste Management and the Board, and may require additional amendment. Upon commencement of construction, quarterly progress reports on the status of construction shall be submitted to the Board's Northern Regional Office, during the first year of construction.
2. Submit results of quarterly sampling of monitoring wells PP-1, 3B, ED-18, ED-21, ED-22, ED-23, and ED-24 to the Board's Northern Regional Office in accordance with the existing VPDES permit schedule.

Both the Board and Virginia Power agree that should trends indicative of an increase in pollutants be identified by the above referenced Corrective Action Plan, the Corrective Action Plan shall be re-evaluated by the Board and that new or additional remediation measures may be required by the Board. Plans and schedules for construction of any such remediation measures must be submitted to the Board within forty-five (45) days after completion of such re-evaluation.



COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

Street address: 629 East Main Street, Richmond, Virginia 23219

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David K. Paylor
Director

(804) 698-4000
1-800-592-5482

Douglas W. Domenech
Secretary of Natural Resources

November 18, 2010

U. S. Environmental Protection Agency
Mail code: 5305T
1200 Pennsylvania Avenue, NW
Washington, DC 20460

**RE: Virginia Department of Environmental Quality's Comments on EPA Proposed Rule
Hazardous and Solid Waste Management System; Identification and Listing of Special
Wastes; Disposal of Coal Combustion Residuals from Electric Utilities
(Docket ID No. EPA HQ-RCRA-2009-0640)**

Dear Sir or Madam:

On behalf of the Virginia Department of Environmental Quality (DEQ), I appreciate this opportunity to provide comments on EPA's proposed regulations related to the management and disposal of coal combustion residues (CCRs). At the outset, you should note that Virginia DEQ continues to believe that, with respect to the dry handling of CCRs, these proposed regulations are unnecessary and EPA does not need to promulgate new CCR regulations under either Subtitle C or D. These regulations will adversely impact proven state regulatory programs such as the one in Virginia. At most, if after further consideration EPA continues to believe that a Federal input is necessary, then it should do so in the form of guidance that can be used as a tool by the states to better their rules and regulations to ensure further protection of human health and the environment. As proposed, these regulations will significantly impact the Commonwealth of Virginia in many ways regardless of whether EPA decides to regulate CCR disposal under either Subtitle C or Subtitle D. Therefore, if this regulatory action is pursued, Virginia DEQ recommends that changes to both of the proposed options are necessary to avoid unintended adverse impacts to our state's regulatory programs, private businesses, and human health and the environment.

This letter provides an overview of Virginia DEQ's comments on and concerns with the proposed regulation along with recommendations for EPA's consideration. Detailed comments providing information specifically requested by EPA as well as recommended revisions to EPA's proposed regulatory language and an overview of Virginia's CCR management program are attached (see Attachment A).

Virginia DEQ's General Comments on Subtitle C Proposal:

Virginia DEQ maintains its position that CCR regulation under the authorities of RCRA Subtitle C is overly burdensome and we do not support EPA's proposal to regulate CCRs as a "special" hazardous waste. CCRs are not hazardous wastes, even without consideration of the Bevill exclusions. CCRs do not fail EPA's toxicity benchmark test, the TCLP. EPA's remarks that TCLP may not be a good predictor are flawed; if the TCLP is not a good predictor, then EPA should be taking action to amend the TCLP analysis for determining whether a solid waste is a toxic hazardous waste. EPA is not doing so because the TCLP is a good predictor and EPA's proposal to regulate CCRs as a new listing under "special" hazardous waste makes this clear as EPA had to create a new way to handle this non-hazardous waste under the Subtitle C authorities.

Virginia DEQ again urges EPA to fully consider the repercussions of this special hazardous waste proposal for CCRs. How will states, already strained by budgetary cutbacks, deal with the fiscal impacts and permitting burden of such regulation? Fees are not an "easy" answer for many states, including Virginia, as fees require legislative action. How will the lack of hazardous waste disposal capacity be addressed especially considering the millions of additional tons of CCRs that would have otherwise been used, reused, or recycled and which will now need to be disposed of as a hazardous waste?

EPA has continually reviewed the Bevill exemptions for CCRs and Virginia DEQ strongly encourages EPA to maintain the Bevill exemptions for all types of CCRs. States should be allowed to take the lead in regulating the disposal of CCRs rather than being required to regulate CCRs as "special" hazardous waste under Subtitle C, because it is the states that have the most expertise in dealing with solid waste management issues.

For these reasons and others that are further vetted in Attachment A, Virginia DEQ has been and continues to be strongly opposed to regulation of CCRs as hazardous waste, special or otherwise. EPA's concerns regarding their oversight ability should be addressed through the authorities of §7003 of RCRA or through other mechanisms including congressional action.

Virginia DEQ's General Comments on Subtitle D Proposal:

Virginia DEQ does not fully support EPA's proposal to regulate CCRs under the authorities of RCRA Subtitle D. While the Subtitle D regulatory approach is greatly preferred over the Subtitle C proposal, there are issues that need further consideration if the Subtitle D approach is pursued by EPA. The general concern is that the proposed regulations do not provide states with enough flexibility regarding CCR management or disposal options. Many states, like Virginia, have a long history of dealing with industrial solid waste. The regulations need to be flexible enough to allow states to use equivalent alternatives rather than a specific "standard" as necessary and appropriate. This would include allowing states to evaluate and approve alternate liner and cover designs. The prescriptive one-size-fits-all approach is overly burdensome and unnecessary in areas where local conditions provide an equivalent degree of protection.

As noted above, Virginia DEQ continues to believe that EPA does not need to promulgate new CCR regulations under either Subtitle C or D. These regulations will adversely impact proven state regulatory programs such as the one in Virginia. At most, if a federal

program is necessary, then it should be in the form of guidance that can be used as a tool by the states to better their rules and regulations to ensure further protection of human health and the environment.

Virginia DEQ's General Comments on Beneficial Use:

Defining CCR as hazardous waste will eliminate or drastically reduce its beneficial use potential in addition to reducing the significant environmental benefits of recycling CCR and the jobs associated with this market. EPA has identified no environmental benefit to defining CCR as hazardous waste; indeed, the only reason for this proposal is to arguably clarify EPA's enforcement authority. This "benefit" does not justify the risk of adverse impacts to CCR reuse and recycling. The damage to environmentally sound CCR beneficial use that a special hazardous waste designation will cause would be irreparable.

Virginia DEQ's Regulatory Requirements:

In Virginia, CCRs are regulated as a solid waste under our state authorities and this material is treated in a likewise manner as other industrial non-hazardous solid wastes. Virginia's regulations require an extensive permitting process for facilities that treat, store, or dispose of solid wastes. Beneficial uses also require review and approval prior to implementation.

Virginia's regulations require the proper management of solid wastes, such as CCRs, in order to prevent adverse impacts on human health or the environment. These regulations provide requirements for CCR management as a solid waste, including appropriate criteria for disposal units and provide allowances for beneficial reuse in a manner that is protective of human health and the environment. Virginia, like many states, has a strong and established solid waste management program. Virginia's statutory law under the Virginia Waste Management Act includes enforcement authorities, as was demonstrated to EPA when we obtained approval for our municipal solid waste (MSW) program (a RCRA Subtitle D program). This approach has been successful for regulation of MSW and is significant proof that the states have the ability to regulate solid waste within their jurisdiction.

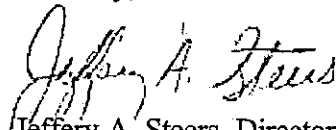
Virginia DEQ's Recommendations:

States are best equipped to make beneficial use determinations for CCRs, whether the uses are for construction, manufacturing, or other applications. Virginia DEQ continues to stress the importance for EPA to thoroughly examine existing CCR disposal permitting and beneficial use programs in Virginia and other states before concluding that a broad overhaul is needed as opposed to formalized proper recognition and approval of state programs which has proven successful for the management of MSW. EPA's resources would be better served by providing technical guidance to states and assisting with emerging issues like the potential for changes to the composition of CCRs with the improvements in new air pollution control technologies.

In summary, we believe the best approach to regulating CCR nationally is to develop a program that can be administered by states with existing resources. Preferably such approach would be through Federal guidance to help the states ensure that their programs are consistently protective of human health and the environment. If, after further reflection, EPA determines that a regulatory approach is necessary, they EPA should be guided by the approach that was taken in the MSW program under RCRA Subtitle D bearing in mind that sufficient flexibility would be necessary to ensure appropriate consideration of local conditions as they relate to the design of liners, leachate management, and final covers. Additionally, the states should continue to administer the beneficial use program and be the decision-makers on beneficial use of CCR and other solid wastes within their borders.

Thank you for your time and consideration of our comments. If you have any questions or need further clarification, please contact me at 804-698-4079 or Jeffery.Steers@deq.virginia.gov.

Sincerely,


Jeffery A. Steers, Director
Waste Division

cc: James Golden, DEQ Deputy Director
Angie Jenkins, Policy Director

Attachment

Specific Comments on the Proposed Regulations

The following are Virginia DEQ's comments on the proposed regulatory language and suggested revisions to that language.

SUBTITLE C OPTION:

As previously set forth in numerous correspondence and comments, CCRs should not be regulated under RCRA subtitle C and Virginia DEQ continues to respectfully request that EPA not pursue its proposal to regulate CCRs as a hazardous waste under its RCRA Subtitle C authorities and its regulations of 40 CFR Parts 261, 264, 265, 268, and 270. Regulation of CCRs as a hazardous waste will have major adverse impacts on Virginia, including:

- Virginia's state law currently prohibits the issuance of permits for off-site hazardous waste disposal facilities under Subtitle C without a certificate of siting issued by the Virginia Waste Management Board. Since the adoption of this statutory requirement in 1984, no off site facility has been able to secure such a certificate and currently no hazardous disposal facility exists in Virginia.
- As Virginia does not have any hazardous waste disposal capacity and due to the complexities of our state statutory laws, if EPA chooses the Subtitle C approach, all CCRs generated in Virginia will be required to be shipped out of state and likely will result in significant adverse economic impacts and will significantly increase the risk of significant adverse environmental impacts.
- The adverse impacts to beneficial use of CCRs, regardless of efforts to the contrary, will be substantial due to public perception and the stigma that will be attached if CCRs are unnecessarily deemed special hazardous waste.
- Budgetary impacts to state programs will be considerable. In Virginia that estimate is an additional \$350,000 per year to support the regulatory, permitting and inspection programs. This additional impact to budgets cannot be addressed solely through the suggested "fees".

Virginia DEQ does not believe that the strict environmental standards of Subtitle C are needed to provide adequate protection of human health and the environment as related to CCR management. EPA has proven success with its implementation of the municipal solid waste landfill (MSW) program and the associated state approval program. If EPA wishes to continue to pursue regulatory action, it should examine the best means for effectively implementing a similar program for CCR. Many states properly manage CCRs under state laws and regulations which are substantively equivalent to the federal Subtitle D standards, and these successful programs should be evaluated and encouraged.

Through its discussion of its proposal, EPA suggests that the Federal government does not believe that states have the ability or desire to enforce this nation's solid waste laws. By invoking its Subtitle C authorities, EPA states that it can retain and assert appropriate enforcement authority. Virginia DEQ has consistently demonstrated the ability to conduct an effective and comprehensive RCRA program including a successful compliance and enforcement history, as is illustrated by EPA's own feedback during the State Review

Framework process. Further, EPA already has broad enforcement authority under RCRA §7003 to address potential substantial threats or endangerment to human health and the environment for releases of solid waste. Although EPA asserts that the enforcement provisions under the Subtitle C option will provide EPA with more enforcement authority than under the Subtitle D option, Virginia DEQ cautions EPA to examine all options and consider potential changes that may enhance the proposal. EPA should consider seeking congressional assistance to provide for greater enforcement authorities under the provisions of the RCRA Subtitle D rather than try to regulate CCRs under the Subtitle C option.

SUBTITLE D OPTION:

The Subtitle D proposal, while infinitely more reasonable than the Subtitle C proposal, is not without concern. The main concern is the lack of flexibility and the budget impacts to implement this program if this Subtitle D option is pursued. The proposed regulations do not provide states with enough flexibility regarding CCR management or disposal options. Additionally, states seeking approval of their CCR program will have to consider the impacts to their budgets due to the regulatory and permitting burden that will ensue. These budgetary impacts, while considerably less than those under the Subtitle C option, are still significant especially during this time of shrinking state funds and, therefore, cannot be ignored. These costs must be considered and Virginia DEQ recommends that EPA more fully evaluate these impacts and consider the work done by EPA and ECOS on the cost of rules implementation.

Based on the proposed regulatory language for the Subtitle D option, Virginia DEQ suggests the following revisions to provide for clarity and flexibility. These revisions and comments are in italicized text following the proposed EPA language.

Location Restrictions

Section 257.60 Proposed Rule

Sec. 257.60 Placement above the natural water table.

(a) New CCR landfills and new CCR surface impoundments and lateral expansions must be constructed with a base that is located a minimum of two feet above the upper limit of the natural water table.

(b) For purposes of this section, natural water table means the natural level at which water stands in a shallow well open along its length and penetrating the surficial deposits just deeply enough to encounter standing water at the bottom. This level is uninfluenced by groundwater pumping or other engineered activities.

This proposed language is confusing. We believe that the maximum seasonal high water table is a threshold that can be measured through indicators such as soil morphology or field measurements and the use of the maximum seasonal high water table is an appropriate measure of the upper limit of the natural water table. We request this section to be modified to read as follows:

Sec. 257.40- include a new term and definition- "Maximum seasonal water table" means the highest level of a saturated zone (the apparent or perched water table) over a continuous period of more than two weeks in most years, but not a permanent water table.

Sec. 257.60 Placement above the uppermost aquifer.

New CCR landfills and new CCR surface impoundments and lateral expansions must be constructed with a base that is located a minimum of two feet above the maximum seasonal water table as defined in proposed regulation 257.40 and certified by a qualified groundwater scientist, professional geologist, or professional engineer.

Design Criteria

Section 257.70 Proposed Rule

Sec. 257.70 Design criteria for new CCR landfills and lateral expansions.

(a) New CCR landfills and lateral expansions of CCR landfills shall be constructed:

(1) With a composite liner, as defined in paragraph (a)(2) of this section and a leachate collection system that is designed and constructed to maintain less than a 30-cm depth of leachate over the liner. The design of the composite liner and leachate collection system must be prepared by, or under the direction of, and certified by an independent registered, professional engineer.

(2) For purposes of this section, composite liner means a system consisting of two components; the upper component must consist of a minimum 30-mil flexible membrane liner (FML), and the lower component must consist of at least a two-foot layer of compacted soil with a hydraulic conductivity of no more than 1×10^{-7} cm/sec. FML components consisting of high density polyethylene (HDPE) shall be at least 60-mil thick. The FML component must be installed in direct and uniform contact with the compacted soil component.

(3) For purpose of this section, hydraulic conductivity means the rate at which water can move through a permeable medium. (i.e., the coefficient of permeability).

(b) [Reserved]

This proposed language is restrictive and would not allow designs which can be equally protective of groundwater and surface water. Other alternate liners have been used successfully throughout the country and provisions to allow alternate liners need to be incorporated. A composite Subtitle D liner is clearly not needed to protect groundwater or surface water in all geologic and climatic scenarios. States should have the flexibility to review and approve alternative liner designs that will provide adequate protection as allowed under part 258 for sanitary landfills. Therefore, we request that paragraph (a) (1) of this section be modified to allow alternate designs as follows:

1) With a composite liner, as defined in paragraph (a) (2) of this section and a leachate collection system that is designed and constructed to maintain less than a 30-cm depth of leachate over the liner or an alternate design approved by the Director of an approved State that demonstrates that leachate will be contained

or managed in a manner that is protective of groundwater and surface water. The design of the composite liner and leachate collection system must be prepared by, or under the direction of, and certified by an independent registered, professional engineer. (Proposed change underlined)

Section 257.71 Proposed Rule

Sec. 257.71 Design criteria for existing CCR surface impoundments.

(a) No later than [five years after effective date of final rule] existing CCR surface impoundments shall be constructed:

(1) With a composite liner, as defined in paragraph (a) (2) of this section and a leachate collection system between the upper and lower components of the composite liner. The design shall be in accordance with a design prepared by, or under the direction of, and certified by an independent registered professional engineer.

(2) For purposes of this section, composite liner means a system consisting of two components; the upper component must consist of a minimum 30-mil flexible membrane line (FML), and the lower component must consist of at least two-foot layer of compacted soil with a hydraulic conductivity of no more than 1×10^{-7} cm/sec. FML components consisting of high density polyethylene (HDPE) shall be at least 60-mil thick. The FML component must be installed in direct and uniform contact with the compacted soil component.

(3) For purposes of this section, hydraulic conductivity means the rate at which water can move through a permeable medium (i.e., the coefficient of permeability).

When permitted designs call for composite liners, we must assure good composite action by requiring intimate and uniform contact between the FML component and the compacted soil component. Introduction of a leachate collection system between the two components of the composite liner system defeats the effectiveness of the composite liner. First, a composite liner is two liners in intimate contact with one another. The proposal is not that of a composite liner but of a double liner with a leak detection system. EPA is urged to reconsider what type of liner is to be used and to properly describe it. Virginia DEQ requests that paragraph (a) (1) of this section be modified to read as follows (changes suggested are underlined):

(1) With a composite liner, as defined in paragraph (a) (2) of this section and a leachate collection system above the upper component of the composite liner. The design shall be in accordance with a design prepared by, or under the direction of, a registered professional engineer and these plans shall be certified by an independent registered professional engineer.

Section 257.72 Proposed Rule

Sec. 257.72 Design criteria for new CCR surface impoundments and lateral expansions.

(a) New CCR surface impoundments and lateral expansions of CCR landfills or surface impoundments shall be constructed:

(1) With a composite liner, as defined in paragraph (a) (2) of this section and a leachate collection system between the upper and lower components of the composite liner. The

design of the composite liner and leachate collection system must be prepared by, or under the direction of, and certified by an independent registered, professional engineer.

(2) For purposes of this section, composite liner means a system consisting of two components; the upper component must consist of a minimum 30-mil flexible membrane liner (FML), and the lower component must consist of at least a two-foot layer of compacted soil with a hydraulic conductivity of no more than 1×10^{-7} cm/sec. FML components consisting of high density polyethylene (HDPE) shall be at least 60-mil thick. The FML component must be installed in direct and uniform contact with the compacted soil component.

When permitted designs call for composite liners, we assure good composite action by requiring intimate and uniform contact between the FML component and the compacted soil component. We believe that the introduction of the leachate collection system between the two components of the composite liner would defeat the composite action. Virginia DEQ requests paragraph (a) (1) of this section be modified to read as follows (changes suggested are underlined):.

(1) With a composite liner, as defined in paragraph (a) (2) of this section and a leachate collection system above the upper component of the composite liner. The design shall be in accordance with a design prepared by, or under the direction of, a registered engineer and shall be certified by an independent registered professional engineer.

Closure Criteria

Section 257.100 Proposed Rule

(c) At closure, the owner or operator of a surface impoundment must:

- (1) Eliminate free liquids by removing liquid wastes or solidifying the remaining wastes and waste residues;
- (2) Stabilize remaining wastes to a bearing capacity sufficient to support the final cover; and
- (3) Cover the surface impoundment with a final cover designed and constructed to:
 - (i) provide long-term minimization of the migration of liquids through the closed impoundment;
 - (ii) Function with minimum maintenance; and
 - (iii) Promote drainage and minimize erosion or abrasion of the cover;
 - (iv) Accommodate settling and subsidence so that the cover's integrity is maintained;and
- (v) Have a final cover system that meets the requirements of subsection (d).

Paragraph (d) of this section prescribes one cover design option and paragraph (e) authorizes an alternative final cover design. Therefore we request that paragraph (c) (v) be modified as follows (changes requested are underlined):

(v) Have a final cover system that meets the requirements of subsection (d) or (e).

Virginia DEQ's Response to EPA's Request for Comments on Specific Areas

In the preamble to EPA's Proposed Rule on "Hazardous and Solid Waste Management System; Identification and Listing of Special Wastes; Disposal of Coal Combustion Residuals from Electric Utilities" (Docket ID No. EPA HQ-RCRA-2009-0640), EPA identified many issues for which it is soliciting comment along with supporting information and data. The major issues on which comments with supporting information and data are requested are listed below with Virginia DEQ's response to the comment noted in *italics*.

Management of CCRs

- Whether regulatory approaches should be established individually for the four Bevill CCR wastes (fly ash, bottom ash, boiler slag, and FGD sludges) when destined for disposal.

Virginia DEQ continues to believe that the Bevill exclusion should remain in effect for all CCR wastes as it has for many years and has been affirmed and supported by EPA in the past. However, if EPA seeks to unnecessarily regulate disposal of CCR wastes, then such regulation should be confined to only the waste that appears of most concern to EPA, fly ash.

- The regulatory approaches proposed in the notice and the alternative approaches EPA is considering as discussed in Section XIII of the preamble.

Section XIII describes alternative ways to regulate CCR. Virginia DEQ believes that EPA should consider establishing different standards for wet storage and dry storage of CCR. For example, in section XIII of the preamble of the rule, EPA discussed the possibility of regulating wet storage under Subtitle C and dry management under Subtitle D due to the different risks associated with surface impoundments, and the differences between the physical and chemical mobility of wet vs. dry CCRs. Virginia DEQ believes that this type of approach is one that EPA should carefully research. Regulation of the different handling methods under different authorities will lead to legal issues and is confusing. It is the characteristics of the waste material that should determine the regulatory scheme.

Establishing guidances concerning these different management options would provide more flexibility in the proper management of CCRs and will do so in a manner that is protective of human health and the environment without an adverse and substantial additional cost burden to the states.

EPA has also stated that the enforcement provisions under the Subtitle C option provide EPA with more enforcement authority than under the Subtitle D option. Virginia DEQ urges EPA to do their due diligence and examine all options and consider potential changes that may enhance the proposal. EPA should consider seeking from Congress greater enforcement authority under the provisions of the Subtitle D program if that is a factor that is driving EPA to pursue regulating CCRs under the Subtitle C option. This would allow EPA the option to further regulate CCRs without being required to label

CCRs as hazardous waste; thereby, eliminating concerns associated with beneficially using a hazardous waste.

- The Agency has documented, through proven damage cases and risk analyses, that the wet handling of CCRs in surface impoundments poses higher risks to human health and the environment than the dry handling of CCRs in landfills. EPA seeks comments on the standards proposed in this notice to protect human health and the environment from the wet handling of CCRs. For example, in light of the TVA Kingston, Tennessee, and the Martins Creek, Pennsylvania CCR impoundment failures, should the Agency require that owners or operators of existing and new CCR surface impoundments submit emergency response plans to the regulatory authority if wet handling of CCRs is practiced?

Emergency response plans are a necessary component for the safe management of any waste and Virginia DEQ agrees that owners or operators of CCR surface impoundments should have such plans in place in the event of an emergency situation. Permitted solid waste facilities in Virginia are required to have an emergency contingency plan and to have arrangements with local police and fire departments.

- The degree to which coal refuse management practices have changed and the impacts of those changes or, for example, groundwater monitoring and the use of liners.

Virginia DEQ has a very strong and established solid waste regulatory program, as our EPA approved MSW permit program attests to, and has successfully regulated the management of coal ash as industrial waste under our laws and regulations. Coal ash is a solid waste and, as such, is treated in a likewise manner as other industrial solid wastes. The Virginia Solid Waste Management Regulations provide requirements for CCR management, including appropriate criteria for disposal units, and allow for its beneficial reuse in a manner that is protective of human health and the environment. In 2009, Virginia DEQ began working with stakeholders to revise Virginia's Coal Combustion Byproduct Regulations. Potential revisions to these regulations include additional protections that would be more protective of human health and the environment. The regulatory revisions being considered include:

- *Inclusion of a maximum amount of fill material that could be beneficially used at a site under the Coal Combustion Byproduct Regulations.*
- *Development of a risk based approach to regulating CCR sites, based on size, with different requirements concerning groundwater monitoring and review of the information submitted.*
- *Revisions to setback requirements to be more consistent with the siting requirements of landfills.*
- *Inclusion of a prohibition of creating ponds in the CCR fill areas.*
- *Addition of a requirement for a hydrogeologic and geotechnical report to be prepared for the site which provides more documentation concerning the subsurface conditions, including the seasonally high water table.*
- *Addition of operational requirements to address dust control requirements, compaction requirements, the maximum size of the fill area that can be open at one time, the placement of soil after 60 days of not receiving CCR and cleanout requirements for sedimentation ponds.*

- *Additional closure requirements were discussed. Capping of the site will occur using one of three options specified in the regulations. There are limits on disturbing the cap and final cover must be maintained on the site.*
- *Groundwater monitoring would be required for larger sites.*
- *Public notification/participation would be required, through posting of a sign on the site, similar to a zoning sign, advising the public of the activity.*

The changes to the regulations listed above have been discussed with stakeholders; however, DEQ has not moved forward with developing the proposed regulation for public comment. Due to EPA's impending regulatory action on CCRs, DEQ put on hold developing a proposal in December 2009 since EPA was scheduled to release a CCR proposal in December 2009. At this time, DEQ has not reinitiated this rulemaking process but once initiated DEQ believes that changes concerning the issues listed above will further strengthen Virginia's Coal Combustion By-Product Regulations concerning the use of unencapsulated CCRs as fill material.

Risk Assessment

- *The screening analysis conducted to estimate risks from fugitive CCR dust; data from any ambient air monitoring for particulate matter that has been conducted; where air monitoring stations are located near CCR landfills or surface impoundments; and information on any techniques, such as wetting, compaction, or daily cover that are or can be employed to reduce such exposures.*

When working with stakeholders to examine ways to revise Virginia's regulations, additional measures were identified to be included in the regulations concerning the control of dust from these sites. These measures included requiring compaction of coal ash to occur within 72 hours of placement, requiring sites to be developed in phases, with a maximum phase size of 15 acres and only two phases being active at one time, and the covering of fill sites with soil after 60 days of not receiving CCR. Additionally, surface wetting or surfactant agents would be required to be applied to the site to prevent fugitive dust. Additionally, Virginia DEQ controls fugitive dusts under our air regulatory programs. Landfills, like other construction activities, are required to adhere to these requirements.

- *Information and data regarding the existence of drinking water wells that are down-gradient of CCR disposal units, any monitoring data that exists on those monitoring wells and the potential of these wells to be intercepted by surface water bodies. The Virginia DEQ has monitoring data for monitoring wells at permitted landfills, including captive industrial landfills that are receiving CCRs. Groundwater monitoring is required in accordance with our state laws and regulations. However, it should be noted that EPA's request is confusing. Environmental monitoring wells are NOT drinking water wells, are usually constructed differently and lie within different aquifers. EPA should clarify what data they are looking to have provided, monitoring well data or down-gradient drinking water well data.*

Liners

- Whether, in addition to the flexibility provided by section 3004(o)(2), regulations should also provide for alternative liner designs based on, for example, a specific performance standard, such as the performance standard in 40 CFR 258.40(a)(1), or a site specific risk assessment, or a standard that the alternative liner, such as a clay liner, was at least as effective as the composite liner.

The proposed language is unduly restrictive and would not allow designs which can be equally protective of groundwater and surface water. Other liner systems have been used successfully throughout the country. A composite Subtitle D liner is clearly not needed to protect groundwater or surface water in all geologic and climatic scenarios. States should have the flexibility to review and approve alternative liner designs that will provide adequate protection as allowed under part 258 for MSW landfills. Virginia DEQ has approved alternative liners to be used for our MSW sanitary landfills and has an established process for determining the adequacy of alternative liner proposals.

Beneficial Use

- The growth and maturation of state beneficial use programs and the growing recognition that the beneficial use of CCRs is a critical component in strategies to reduce GHG emissions taking into account the potentially changing composition of CCRs as a result of improved air pollution controls and the new science on metals leaching.

As air pollution control technology evolves, the composition of CCRs will change. Beneficial use programs need to retain flexibility to address the changes in CCR composition. Due to the need for flexibility, Virginia DEQ supports EPA continuing to evaluate the changing composition of CCR and developing guidance concerning applicable beneficial use applications based on the composition of CCRs and the management strategies for these beneficial uses. EPA's support of beneficial use is an essential component of the success of these programs.

- Information and data on the extent to which states request and evaluate CCR characterization data prior to the beneficial use of unencapsulated CCRs.

Virginia DEQ's beneficial use program requires testing of any solid waste prior to it being beneficially used. For CCR, this would require analysis in accordance with the TCLP. If the CCR exceeds any characteristic for hazardous toxicity per the results of the TCLP, it cannot be beneficially reused under our Coal Combustion Byproduct Regulations. Virginia DEQ has processed requests for the beneficial use of unencapsulated CCRs and has a set protocol on the testing of CCRs for such use. The diversified uses of materials under the beneficial use program in the state allow regulatory staff to evaluate each potential use scenario and request testing requirements to fit each scenario. CCRs are regularly tested for TCLP as described above. In addition to the analytical results, the following additional information must be provided under the Coal Combustion Byproduct Regulations:

1. *A certification that the applicant has legal control over the site for the project life and the closure period;*

2. *A certification from the governing body of the county, city, or town in which the site is to be located that the location and operation of the CCR site are consistent with all applicable ordinances;*

3. *A general description of the intended use, reuse, or reclamation of CCR that includes the following:*

a. A description of the nature, purpose and location of the fossil fuel combustion products site, including a topographic map showing the site area and available soils, and geological maps. The description shall include an explanation of how CCR will be stored prior to use, reuse or reclamation, if applicable;

b. The estimated beginning and ending dates for the operation;

c. An estimate of the volume of the CCR to be utilized; and

d. A description of the proposed type of CCR to be used, reused, or reclaimed, including physical and chemical characteristics of the CCR. The chemical description shall contain the results of TCLP analyses for the specified constituents. The description shall also contain a statement that the project will not manage CCR that fail the TCLP testing;

4. *A certification by a professional engineer licensed to practice by the Commonwealth that the project meets the locational restrictions and setback requirements of the regulations;*

5. *A certificate signed by a professional engineer licensed to practice by the Commonwealth that the project has been designed in accordance with the standards of the regulations;*

6. *An operational plan;*

7. *A closure plan; and*

8. *A signed statement that the owner or operator shall allow authorized representatives of the Commonwealth, upon presentation of appropriate credentials, to have access to areas in which the activities covered by this chapter will be, are being, or have been conducted to ensure compliance.*

- The appropriate means of characterizing beneficial uses that are both protective of human health and the environment and provide benefits. EPA is also requesting information and data demonstrating where the federal and state programs could improve on being environmentally protective and, where states have, or are developing, increasingly effective beneficial use programs.

The volume of beneficial use requests, including those involving CCRs, in the Commonwealth of Virginia taken in conjunction with the variability of the requests, has created a situation where a "one size fits all" approach to beneficial use requests is not feasible. The one predominate beneficial use request in Virginia is for civil engineering purposes, though the process for reviewing beneficial use requests begins the same for each case. The entity requesting the beneficial use determination must prove that 1) the material is not hazardous based on RCRA definitions and supporting analytical laboratory data (typically TCLP tests); 2) that the intended beneficial use is not a veil for disposal; and 3) that the beneficial use is a viable option for the material. If the beneficial use request passes these criteria, Virginia DEQ regulatory staff then examine the specific intended beneficial use and develops additional criteria and use restrictions to ensure reasonable human and environmental protection. For beneficial uses of CCRs

in a manner that is not provided under the Virginia Solid Waste Management Regulations, Virginia developed the Coal Combustion By-Product Regulations which standardized the necessary process and information needed for the use, reuse, or reclamation of CCRs. As noted previously, Virginia DEQ is currently undertaking a rulemaking process to amend these regulations in order to provide further environmental protections for the beneficial use of CCRs.

Given the above approach for evaluating and approving beneficial use requests, the state would be hesitant to create a more regimented protocol that would not allow each beneficial use request to be evaluated on its own set of unique circumstances. Additionally, CCR beneficial use requests are not required for "typical" applications, i.e. use of fly ash as a concrete admixture or use of bottom ash as sandblasting media. Forcing such approvals into a situation where staff must review each and every request, even for uses that have been considered standard by industry groups such as ASTM or ASCE, would cause undue burden to state regulatory staff already taxed by declining state budgets and workforce reductions and would fail to provide more protection to human health and the environment.

- *Whether certain uses of CCRs (e.g., uses involving unencapsulated uses of CCRs) warrant tighter control and why such tighter control is necessary. Virginia DEQ welcomes any guidance from EPA to be used as a tool to enhance our rules and regulations. As previously discussed, Virginia DEQ initiated a rulemaking process to amend our regulations regarding the use of unencapsulated CCRs, such as when used in general fill construction projects. This rulemaking was undertaken in an effort to further ensure our regulatory requirements provided further protection of human health and the environment for CCR beneficial use projects allowed under the regulation. These revised/additional requirements were listed in the previous section. As part of this effort, Virginia DEQ is considering implementing a more risk-based approach to regulating CCR in Virginia. This approach would be dependent on a site specific risk assessment based on site specific conditions that take into account the composition of CCRs, their leaching potential, geologic and hydrogeologic environment, volume, rate of application, the amount of CCR used at a site as fill material and the composition of CCRs. Under this risk-based approach, larger sites would be subject to more requirements, such as groundwater monitoring.*

- *If EPA determines that regulations are needed for the beneficial use of CCRs, should EPA consider removing the Bevill exemption for such uses and regulate these uses under RCRA subtitle C, develop regulations under RCRA subtitle D or some other statutory authority, such as under the Toxic Substances Control Act? Virginia DEQ does not believe that specific regulations regarding the beneficial use of CCRs. Many states have rigorous beneficial use programs which require review and approval. Therefore, Virginia DEQ recommends that beneficial uses of CCRs not be removed from the Bevill exemption. Virginia DEQ continues to support the Bevill exemption for all CCRs, whether managed as solid waste or beneficially used. CCRs are successfully beneficially used and those uses need to be supported. If further requirements are necessary for specific beneficial uses, then those should be addressed*

through guidance by EPA, not regulatory action under RCRA Subtitle C or D, or other statutory authority. CCRs are a solid waste and each state should determine how to best manage these solid waste within their state borders. Virginia DEQ's solid waste management program has successfully done so over the years and opposes any changes to the status of CCRs destined for beneficial use.

As noted, Virginia DEQ recommends that guidance be developed and it would be helpful to ensure that CCRs are managed and used in an environmentally sound manner and Virginia DEQ urges EPA to work through organizations such as ASTSWMO to assist in the development of guidance.

- Whether it is necessary to define beneficial use better or develop detailed guidance on the beneficial use of CCRs to ensure protection of human health and the environment, including whether certain unencapsulated beneficial uses should be prohibited.

Virginia DEQ opposes any prohibition of unencapsulated use of CCRs, as long as they can be proven to be genuine beneficial uses and not a veil for disposal. Broadly restricting a category of potential beneficial use based on a few incidences of mismanagement goes against the ideas of innovation credited to waste reduction initiatives put in place by many states. Such prohibitions of usage should be left to each state, where factors such as precipitation, soil chemistry, and CCR composition can be evaluated by regulatory staff knowledgeable of those factors.

- Whether the Agency should promulgate standards allowing uses on the land, on a site specific basis, based on site specific risk assessments, taking into consideration the composition of CCRs, their leaching potential under the range of conditions under which the CCRs would be managed, and the context in which CCRs would be applied, such as location, volume, rate of application, and proximity to water.

Virginia DEQ supports any scientifically based standard that will be developed for the beneficial use program for the factors listed above to be used as a tool, not a regulatory mandate, to further ensure protection of human health and the environment.

- If materials characterization is required, what type of characterization is most appropriate? If the CCRs exceed the toxicity characteristic at pH levels different from the TCLP, should they be excluded from beneficial use? When are totals levels relevant?

The determination of what material characterization is most appropriate cannot be arbitrarily assigned. The circumstances of the intended beneficial use should dictate the proper characterization. For example, if a particular CCR was going to be used in conjunction with spent lime from municipal water treatment to stabilize a TCLP type soil in order to make it a non-hazardous waste then the TCLP test is an appropriate test. However, if our purpose is to limit and minimize risk to the human then TCLP is not the appropriate test and total concentration becomes relevant since the risk calculations are based on total concentration. The testing should be determined by the beneficial use proposed so that appropriate analysis can be utilized.

- Whether EPA should fully develop a leaching assessment tool in combination with the Draft SW-846 leaching test methods described in Section I. F. 2 and other tools (e.g., USEPA's *Industrial Waste Management Evaluation Model* (IWEM)) to aid prospective beneficial users in calculating potential release rates over a specified period of time for a range of management scenarios.

Virginia DEQ welcomes any guidance from EPA to be used as a tool to advance our regulations and guidance for the benefit of public health and the environment. The guidance would be a useful tool in evaluating the potential fate and transport of contaminants. If guidance is issued, its use should not be mandated by federal regulation. A leaching assessment tool would be of a great assistance to beneficial use programs.

- Historically, EPA has proposed or imposed conditions on other types of hazardous wastes used in a manner constituting disposal (e.g., maximum application rates and risk-based concentration limits for cement kiln dust used as a liming agent in agricultural applications (see 64 FR 45639; August 20, 1999); maximum allowable total concentrations for nonnutritive and toxic metals in zinc fertilizers produced from recycled hazardous secondary materials (see 67 FR 48393; July 24, 2002). Should EPA should establish standards, such as maximum/minimum thresholds, or rely on implementing states to impose CCR site-specific limits based on front-end characterization that ensures individual beneficial uses remain protective?

Virginia DEQ believes EPA should perform additional research and base its finding only on sound science and provide guidance to states to develop CCR site-specific limitations for any proposed beneficial use project.

- Whether there are incentives that could be provided that would increase the amount of CCRs that are beneficially used and comment on specific incentives that EPA could adopt that would further encourage the beneficial use of CCRs.

EPA's support of the beneficial use of CCRs is essential to the program's success. As EPA's resources eclipse that of a state's, EPA must take a mentoring role in supporting state efforts and providing guidance and tools necessary to carry out successful beneficial use programs for CCRs and other waste materials. Incentives can include recognition of innovations and allowing states to request funding for beneficial use programs, including pilot studies, through their cooperative agreements.

Stigma

The best approach to handle the stigma which may complicate CCR beneficial use is for CCRs not to be regulated as a hazardous waste under the authorities of RCRA Subtitle C. As discussed previously, there is no benefit to regulating CCRs as a "special" hazardous waste and, doing so will only cause viable and beneficial uses of this material to meet with unnecessary stigma with respect to public perception.

Today's Co-proposed Regulations

General

- Some commenters have suggested that EPA not promulgate any standards, whether they be RCRA subtitle C or D, but continue to rely on the states to regulate CCRs under their existing or new state authorities. The Agency solicits comment on such an approach, including how such an approach would be protective of human health and the environment.

Failure of the surface impoundment in December 2008 at TVA's Kingston Fossil Plant in Harriman, Tennessee appears to be a driving factor in EPA deciding to regulate CCRs. EPA's response has been to develop two proposals which both provide broad regulation of CCRs in surface impoundments and landfills.

Virginia DEQ has consistently opposed any regulation of CCRs as a hazardous waste, even as a "special" hazardous waste. In responding to the failure of the surface impoundment in TVA's Kingston Fossil Plant in Harriman, Tennessee, EPA made the decision to send the CCR to a solid waste landfill, not a hazardous waste landfill. This decision supports the position that CCR is not a hazardous waste. It is noted that damage cases have been documented due to the failure of surface impoundments and, therefore, it only makes sense that surface impoundments should have regulatory requirements to protect human health and the environment from the potential failure of these impoundments. DEQ supports further regulation of wet storage of CCR and storage impoundments that manage CCR. However, the dry handling of CCRs in landfills is an area where the states have much more expertise than EPA. States regularly permit and ensure compliance of the landfills operating within their borders. It is the states that should be allowed to regulate these facilities under their authorities or under a similar EPA approved permit program as is currently used for MSW landfills.

As part of our rulemaking process for amending our Coal Combustion Byproduct Regulations, the DEQ assembled an advisory panel of technical experts in the field of CCRs to review and provide options to strengthen Virginia's Coal Combustion Byproduct Regulations. The main driver noted was the issue of maintaining separation between CCRs and groundwater/surface water. This criteria was identified as an essential factor related to the risks associated with using CCRs as fill material. EPA should review the work that states have undertaken prior to determining if a regulatory approach is necessary. It is essential that any approach allow states flexibility to adopt regulations in their state to address specific criteria needed to protect their natural resources and their citizenry from any risks posed by the various types of CCR as well as the flexibility to tailor standards based on the type of CCR being used and the composition of the CCR.

RCRA Subtitle C Regulations

Virginia DEQ is not providing any responses to the specific questions of this subsection as we do not support EPA's proposal to regulate CCRs under the authorities of RCRA Subtitle C. CCRs are not hazardous wastes and any proposal to regulate them as such is inconsistent with sound science and common sense. EPA is urged to fully consider the repercussions a RCRA Subtitle C regulation will present to not only the states, but to

industry and to the people that rely on coal powered electricity. EPA can accomplish their desire to ensure protection of human health and the environment through other mechanisms, such as Subtitle D or guidance. These other options need to be utilized. EPA's concerns regarding their oversight ability should be addressed through the authorities of §7003 of RCRA or through other mechanisms including congressional action.

RCRA Subtitle D Regulations

- EPA broadly solicits comment on the approach of relying on certifications by independent registered professional hydrologists or engineers of the adequacy of actions taken at coal fired utilities to design and operate safe waste management systems.

Virginia currently regulates professional geologists and professional engineers through the Department of Professional and Occupational Regulation (DPOR). These individuals are already providing Virginia DEQ with similar certifications which are required to be submitted under either Virginia's Solid Waste Management Regulations for solid waste management facilities, including landfills, or the Coal Combustion Byproduct Regulations for siting of projects. Independent registered professional engineers or hydrologists are a necessary component of a successful program and the duties of the two professionals should be clearly spelled out as these types of professionals are not interchangeable.

- Additional information regarding the extent to which landfill capacity would be affected by applying the proposed subtitle D location restrictions to existing CCR landfills.

Requiring CCRs to be placed in industrial landfills would greatly reduce the lifespan of permitted industrial landfills in Virginia. Virginia DEQ is unaware of the amount of CCRs that are generated within the state annually, mainly because of the successes of reuse and recycling programs that occur under provisions of beneficial use. Most recent estimates indicate that Virginia has available capacity at non-captive industrial landfills for approximately 13 million tons of industrial waste. In reality industrial landfills handle many types of waste streams and the remaining lifespan of these landfills would be significantly reduced if CCRs are required to be disposed at these facilities. There are currently only two permitted non-captive industrial landfills in Virginia and Virginia DEQ is unable to estimate if these two facilities would be capable of managing the additional waste material if CCRs were required to be placed in these landfills. There would likely be an increase in the number of captive landfills operating in Virginia, which would require an increase in the resources needed to oversee these landfills because the standards CCR landfills would be required to meet under this proposal are similar to existing Municipal Solid Waste and Industrial landfill standards.

- Whether the subtitle D option, if promulgated, should allow facilities to use alternative designs for new disposal units, so long as the owner or operator of a unit could obtain certification from an independent registered professional engineer or hydrologist that the alternative design would ensure that the appropriate concentration values for a set of constituents typical of CCRs will not be exceeded in the uppermost

aquifer at the relevant point of compliance (i.e., 150 meters from the unit boundary down gradient from the unit, or the property boundary if the point of compliance is beyond the property boundary).

Virginia DEQ concurs that the Subtitle D option must provide flexibility in the design of new disposal units and provide performance standards to be met, such as the one noted in this comment. This is the only way to accommodate changes in technology which occur faster than EPA modifies their regulations.

- Whether there could be homeland security implications with the requirement to post information on an internet site and whether posting certain information on the internet may duplicate information that is already available to the public through the state.

If states were required to adopt regulations under the Subtitle D option, Virginia DEQ would likely adopt standards similar to those in place for municipal solid waste landfills and industrial waste landfills. This would include the issuance of a permit to a CCR landfill. The information reviewed by Virginia DEQ prior to issuing a permit would be information that would be available to the public from DEQ. Requiring a facility to post information on a website would duplicate information already available to the public from DEQ. Virginia statute contains provisions that protect trade secret information from being released to the public.

- Whether the subtitle "D prime" option is protective of human health and the environment.

The "D prime" option allows surface impoundments to continue to operate for their useful life without requiring them to install composite liners. Virginia DEQ is concerned about allowing unlined surface impoundments to continue to operate without an established closure date. When the Subtitle D regulations were issued by EPA, not all landfills in Virginia were equipped with liners. In 1993, state statutes were amended to allow landfills to continue to operate until their vertical design capacity was reached and required landfills to submit an estimated date of closure which was not enforceable by the state. After many years of the continued operation of these unlined landfills, some of these landfills were anticipating continuing operation for decades instead of their previously estimated closure date. The state statute was subsequently amended in 2000 to establish a process for assigning closure dates to these unlined landfills. Unlined landfills were prioritized for closure based on potential threat to human health and the environment, and required to close in 2007, 2012, or 2020. Virginia DEQ's previous experience with allowing unlined landfills to continue operation until vertical capacity was reached causes the state to have concerns with the "D prime" option. EPA's proposal indicates 75% of surface impoundments are greater than 25 years old, with 10% being greater than 50 years. Allowing unlined surface impoundments to continue operation indefinitely does not provide protection to human health and the environment.

- EPA is proposing that existing CCR landfills and surface impoundments that cannot make a showing that a CCR landfill or surface impoundment can be operated safely in a floodplain or unstable area must close within five years after the effective date of the rule. EPA solicits comment on the appropriate amount of time necessary to meet

this requirement, as well as measures that could help to address the potential for inadequate disposal capacity.

Five years is the minimum amount of time for Virginia DEQ to implement the rulemaking process to amend our regulations, receive permit applications, review permit applications for new CCR landfills that meet the standards of the Subtitle D proposal, and issue permits for these landfills. EPA would have to commit staff to approve the CCR permit program, however, if the MSW program is to be utilized as a model. Approvals of state permit programs would need to be completed within 18 months after the effective date of the rule so that adequate time can be allowed for the permit application process.

With respect to the Subtitle C option, however, five years is insufficient time for the state to initiate a rulemaking process, submit an authorization package, gain approval for a Subtitle C delegation of the program, and review permit application and issue permits for landfills meeting hazardous waste standards. The timeline is further complicated as our statutory law prohibits issuance of any off site hazardous waste facility permit without first securing a certificate of siting which is a very complex process and could potentially take years to secure the certificate.

Surface Impoundment Closeout

- Whether the Agency should provide for a variance process allowing some surface impoundments that manage wet-handled CCRs to remain in operation because they present minimal risk to groundwater (e.g., because they have a composite liner) and minimal risk of a catastrophic release (e.g., as indicated by a low or less than low potential hazard rating under the Federal Guidelines for Dam Safety established by the Federal Emergency Management Agency).

This approach is reasonable for low risk surface impoundments and should be allowed under the proposals.

Financial Assurance

- EPA broadly solicits comments on whether financial assurance should be a key program element under a subtitle D approach, if the decision is made to promulgate regulations under RCRA subtitle D.

Virginia DEQ has had financial assurance requirements in effect since 1988 for all solid waste landfills, including industrial landfills. The financial assurance requirements address closure, post-closure care, groundwater monitoring, and corrective action. Due to the similarity of the proposed CCR landfills to municipal solid waste and industrial landfills, financial assurance provisions should be adopted if the Subtitle D approach is undertaken. Failure to adopt financial assurance requirements would not be in the best interests of the states. If a facility was abandoned then states could become liable for the costs of closure, post-closure, and/or corrective action.

State Programs

- Detailed information on current and past individual state regulatory and non-regulatory approaches taken to ensure the safe management of CCRs, not only under state waste authorities, but under other authorities as well, including the implementation of those approaches.

Please refer to the "Summary of CCR Management in Virginia" section of this attachment (see next section).

- The potential of federal regulations to cause disruption to states' implementation of CCR regulatory programs under their own authorities, including more specifics on the potential for procedural difficulties for state programs, and measures that EPA might adopt to try to mitigate these effects.

***Subtitle C option:** Due to Virginia's rulemaking process, it is our experience that it may take two years to amend our hazardous waste regulations and even longer to receive EPA authorization to implement these rules in lieu of EPA's implementation of the program. Previously, it took EPA approximately 16 years to authorize Virginia DEQ's Hazardous Waste Corrective Action program. EPA's estimate of one to two years for states to adopt the rule and receive authorization for its implementation is unrealistic. This delay in authorization approvals is an issue that has plagued EPA in the past, and as EPA will be working to authorize a large number of different state programs concurrently, it is likely that this will be a very slow process for program authorization. Until the regulations are amended and federal authorization is obtained, Virginia DEQ will be unable to implement a Subtitle C CCR regulatory program. Funding for this new/expanded program will also be a barrier to implementing this program. Therefore, funding support and additional time will be needed to implement this program.*

***Subtitle D option:** Under the Subtitle D proposal, the minimum federal criteria would take effect within 180 days after promulgation of the final rule. Virginia DEQ would likely need to undertake a rulemaking to revise our regulations for CCR landfill requirements and surface impoundments to be consistent with EPA's promulgated regulatory requirements. While EPA's minimum Subtitle D standards include many self-regulating provisions, Virginia DEQ would likely implement and oversee these facilities directly through regulation as we do for the municipal solid waste landfill provisions under 40 CFR 258. In general, the full regulatory process in Virginia takes almost two years to complete and, therefore, Virginia DEQ would need additional time to incorporate these requirements into current regulations before a CCR program could be implemented. Funding for this expanded CCR program will also be a barrier to implementation, as Virginia DEQ has had numerous budget cuts in the last few years. Federal funding for this program and more time to allow the states to undertake regulatory action and to implement the program will be necessary.*

Damage Cases

- The report of additional damage cases submitted to EPA on February 24, 2010 by the Environmental Integrity Project and EarthJustice.
While there were no Virginia sites listed in the February 2010 report, two Virginia sites were discussed in the report, In Harm's Way (August 2010). This report discussed historical releases from storage ponds into adjacent rivers from the American Electric Power's Clinch River Plant (1967) and the Glen Lyn plant (1970's and early 1980's). It should be noted that these are not recent cases and are legacy issues which are not an accurate picture of Virginia's current regulatory programs.

Summary of CCR Management in Virginia

Virginia DEQ has undertaken numerous steps over the years to protect human health and the environment from Coal Combustion Residuals (CCRs). Virginia DEQ regulates CCRs as an industrial solid waste under two separate regulations; the Virginia Solid Waste Management Regulations, 9 VAC 20-80, for management of non-hazardous solid wastes and the Coal Combustion Byproduct Regulations, 9 VAC 20-85, for the beneficial use of coal combustion byproducts. Both our municipal solid waste landfills and industrial landfills may be permitted to dispose of CCRs; however, most CCRs which are disposed of are managed by captive industrial landfills. Both of these types of landfills have liners and leachate collection systems, and groundwater monitoring is conducted at these facilities. Additionally, CCRs may also be beneficially used in products or as structural fill material if certain standards are met for conditional exemptions. In accordance with the requirements of the Coal Combustion Byproduct Regulations, CCRs may also be used, reused, or reclaimed in a manner not addressed under the Virginia Solid Waste Management Regulations.

The Virginia Waste Management Board adopted the existing industrial waste landfill regulations in 1988 and since then, there has never been an incident where an environmental release, from any of the landfills designed and constructed in accordance with these regulations has adversely impacted the environment. It is clear from this that any increase in regulation, such as the proposal under RCRA Subtitle C, will not yield any significant environmental benefit. We believe human health and the environment have been adequately protected by the solid waste laws and regulations that are presently in place in Virginia for the management of industrial wastes like CCRs.

In Virginia, a company applying for a permit to operate an industrial solid waste landfill must provide the Virginia DEQ with comprehensive engineered design plans, site geological and hydrogeologic information, a groundwater monitoring plan, a demonstration of financial assurance for closure and post-closure care, an operating plan, and other required permit application documents. Additionally, the third party construction quality assurance must be submitted with quality assurance and quality control documents that ensure the units have been constructed in accordance with approved engineering plans. Our permitting process also includes a public participation process consisting of a comment period and a public hearing as needed or when requested.

In addition to the high degree of regulatory requirements and oversight by our solid waste permitting program, DEQ also routinely inspects solid waste management facilities. DEQ's routine inspection frequency for solid waste landfills is quarterly. During inspections, waste management practices are evaluated with respect to applicable regulations and permit conditions and the integrity of the containment systems is visually examined. On an as needed basis, DEQ's solid waste permit engineers also visit these facilities to assess compliance related to design, construction, operations, and monitoring.

Historical information shows that Virginia has had no known cases of proven environmental damage from any permitted industrial landfills managing CCRs. Virginia's regulatory process for management of CCR in landfills is comprehensive and provides adequate protection of human health and environment. The regulatory requirements will continue to require sound engineering design, construction quality assurance, operations, groundwater quality monitoring, engineered closure, post-closure care, and financial assurance to cover cost of closure, post-closure care, and corrective action for these facilities.

In Virginia, CCRs may also be used, reused, or reclaimed in a manner not addressed under Virginia's solid waste regulations when such use, reuse or reclamation is performed in accordance with the requirements of the Coal Combustion Byproduct Regulations. Administrative procedures are provided for the submission of appropriate documentation and professional engineering certification for the use of CCRs in this manner. This regulation establishes appropriate standards for siting, design, construction, operation, and closure of projects using CCR. If CCR is to be used beneficially as a fill material in Virginia, the following information must be provided to be reviewed by agency staff:

- A certification that the owner or operator has legal control over the site for the project life and the closure period;
- A certification from the governing body of the county, city, or town in which the site is to be located that the location and operation of the site are consistent with all applicable ordinances;
- A general description of the intended use, reuse, or reclamation of CCR that includes the following:
 - A description of the nature, purpose and location of the CCR site, including a topographic map showing the site area and available soils, and geological maps. The description shall include an explanation of how CCR will be stored prior to use, reuse or reclamation, if applicable;
 - The estimated beginning and ending dates for the operation;
 - An estimate of the volume of the CCR to be utilized; and
 - A description of the proposed type of CCR to be used reused or reclaimed, including physical and chemical characteristics of the CCR.
- A certification by a professional engineer licensed to practice by the Commonwealth that the project meets the location restrictions and setback requirements of the regulations;
- A certificate signed by a professional engineer licensed to practice by the Commonwealth that the project has been designed in accordance with the standards of the regulations;
- An operational plan;
- A closure plan; and
- A signed statement that the owner or operator shall allow authorized representatives of the Commonwealth, upon presentation of appropriate credentials, to have access to areas in which the activities covered by this chapter will be, are being, or have been conducted to ensure compliance.

Staff review the information submitted to ensure that the established regulatory standards are being met. Since Virginia originally adopted the Coal Combustion Byproduct Regulations in 1995, approximately 5.5 million cubic yards of CCRs have been used beneficially as fill material under these regulations.

The beneficial reuse of CCRs as fill material for construction of the Battlefield Golf Club was identified by EPA as a concern in many sections of its proposal. Virginia DEQ does not consider EPA's discussion to be a fair representation of this issue and requests that EPA refer to its own update on this site (see April 2010 Battlefield Golf Club Community Update). The results stated in this update are:

- EPA's review of the data indicates that metals are not migrating from the fly ash on the golf course to the residential drinking water wells.
- Metals contaminants were below EPA drinking water standards in all residential wells that EPA tested, except for lead. Lead has been detected above the drinking water standard in several residential wells, but the lead does not appear to be from the fly ash.
- EPA concludes that people can use the golf course without concern. The metal concentrations in the surface water and sediments on the golf course are below standards set for drinking water and soil.
- Based on the data EPA reviewed, there is no current evidence that there is a threat to the public or the environment from the fly ash at the golf course. At this time EPA has no further plan to pursue listing this site on the NPL.

As EPA's own conclusions do not indicate harm from this site, Virginia DEQ respectfully disagrees with EPA's presentation of this issue in the proposal and requests that the situation of the Battlefield Golf Club not be used to mistakenly assume problems with Virginia's CCR management program when in fact EPA's own data and conclusions do not support that assumption. Virginia DEQ is very proud of the success of its beneficial use program for CCRs and other solid wastes, and has worked diligently to ensure that success while protecting human health and the environment.

Due to Virginia's comprehensive regulatory program for management of solid waste CCRs, EPA is urged to reconsider their proposal for regulation of CCRs. Our permit program for industrial landfills is analogous to our EPA approved MSW permit program; justifying why further constraints, such as those proposed by EPA, are unnecessary. Additionally, Virginia's beneficial use program has been recognized by the Green Highways Projects and others for its innovative ways in dealing with CCRs and other high volume waste streams. If pursued, EPA's proposal, especially the Subtitle C option, will only hamper Virginia DEQ's efforts as we strive to meet the challenges of resource recovery by reducing the amount of waste managed through use, reuse and recycling.

CERTIFICATE OF SERVICE

I hereby certify that copies of the foregoing *Rebuttal Testimony and Exhibits*, as filed in Docket No. E-22, Subs 562 and 566, were served electronically or via U.S. mail, first-class postage prepaid, upon all parties of record.

This the 12th day of September, 2019.

/s/Mary Lynne Grigg

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