

## **MEMORANDUM**

**SUBJECT:** Posting EPA-HQ-OLEM-2021-0842 to Regulations.gov for Public Access

**FROM:** Kirsten Hillyer  
Materials Recovery and Waste Management Division  
Office of Resource Conservation and Recovery  
Office of Land and Emergency Management

**THRU:** Andy Crossland  
Division Director  
Materials Recovery and Waste Management Division  
Office of Resource Conservation and Recovery  
Office of Land and Emergency Management

This memorandum authorizes the posting of EPA-HQ-OLEM-2021-0842 to Regulations.gov for public access.

### **Background:**

American Electric Power (AEP) subsidiary Appalachian Power Company (APCO) owns and operates a coal-fired power plant, the Mountaineer Power Plant, in Letart, West Virginia. The Mountaineer Power Plant is located along the Ohio River and approximately 100 miles southeast of Columbus, OH. At Mountaineer, APCO operates a 28 acres unlined coal combustion residuals (CCR) surface impoundment with two basins called the East and West Bottom Ash Ponds (collectively referred to as the BAP). The East and West basins of the BAP were utilized in alternating fashion, with one pond generally receiving wastestreams while the other basin was being cleaned out. The BAP is located on the south side of the plant adjacent to and on the west side of West Virginia Route 62 and is approximately 2,200 feet from the Ohio River. At Mountaineer, there is also a landfill onsite that is located approximately two miles south of the plant.

Under the Environmental Protection Agency (EPA) regulations for CCR landfills and surface impoundments at 40 C.F.R. §257.101(a), unlined CCR surface impoundments such as the BAP were generally required to cease receipt of all CCR and non-CCR wastestreams by April 11, 2021. This deadline was established after the United States Court of Appeals for the District of Columbia Circuit (D.C. Cir.) found that EPA erred when it established a rule that allows unlined CCR surface impoundments to continue to operate until they leak despite the Agency's conclusions that "unlined impoundments have a 36.2 to 57% chance of leakage at a harmfully contaminating level" and that such leaks, when they occur, pose substantial risks to humans and the environment. *See Utility Solid Waste Activities Group (USWAG) v. EPA*, 901 F.3d 414, 427-428 (D.C. Cir. 2018) (finding that "[i]t is inadequate under RCRA for the EPA to conclude that a major category of impoundments that the agency's own data show are prone to leak pose 'no reasonable probability of adverse effects on human health or the environment,' 42 U.S.C. §6944(a), simply because they do not already leak"). Despite the risks posed by unlined

CCR surface impoundments, EPA’s regulations provide an opportunity for such impoundments to continue to operate beyond April 11, 2021, if the owner or operator submits a demonstration showing that the facility meets the criteria for 40 C.F.R. § 257.103(f)(1).

On November 30, 2020, AEP, on behalf of APCO, submitted a demonstration (referred to as the “Demonstration” in this document) for the Mountaineer Plant to EPA seeking an extension pursuant to 40 C.F.R § 257.103(f)(1) to allow the BAP to continue to receive CCR wastestreams until March 31, 2022, and continue to receive non-CCR wastestreams until January 9, 2023. After EPA determined the Demonstration request was complete on January 11, 2022, the requirement to close the BAP was tolled pending a final decision by EPA. 40 C.F.R. § 257.103(f)(3)(ii).

EPA is proposing to find that the Mountaineer Plant is not in compliance with all of the requirements of subpart D of part 257, including noncompliance with the groundwater monitoring and corrective action requirements. For this reason, EPA is proposing to conditionally approve the request for an extension because the Agency has determined that conditions can be developed to address the identified noncompliance before the date of the requested extension. EPA is also taking comment on whether the Agency should deny the request for an extension based on the proposed findings of noncompliance.

EPA is soliciting public comment on the proposed decision to conditionally approve APCO’s extension request. The basis for EPA’s proposed decision is explained in the document titled “Proposed Decision: Proposed Conditional Approval of Alternative Closure Deadline for Mountaineer Power Plant” which is attached to this memo. This document will be open for public comment from July 26, 2022 to August 25, 2022. The only issues on which the Agency is soliciting comment relate to the information in the docket supporting this proposed decision.

Submit your comments, identified by Docket ID No. EPA-HQ-OLEM-2021-0842, by one of the following methods:

- [www.regulations.gov](http://www.regulations.gov): Follow the on-line instructions for submitting comments.
- Mail: U.S. Environmental Protection Agency, EPA Docket Center, Office of Land and Emergency Management, Docket ID No. EPA-HQ-OLEM-2021-0842, Mail Code 28221T, 1200 Pennsylvania Avenue NW, Washington, DC 20460
- Hand Delivery or Courier (by scheduled appointment only): EPA Docket Center, WJC West Building, Room 3334, 1301 Constitution Avenue NW, Washington, DC 20004. The Docket Center’s hours of operations are 8:30 a.m. – 4:30 p.m., Monday – Friday (except Federal Holidays).

Follow the online instructions for submitting comments. Once submitted, comments cannot be edited or removed from Regulations.gov. The EPA may publish any comment received to its public docket. Do not submit electronically any information you consider to be Confidential Business Information (CBI) or other information whose disclosure is restricted by statute. Multimedia submissions (audio, video, etc.) must be accompanied by a written comment. The written comment is considered the official comment and should include discussion of all points you wish to make. The EPA will generally not consider comments or comment contents located outside of the primary submission (i.e.

on the web, cloud, or other file sharing system). For additional submission methods, the full EPA public comment policy, information about CBI or multimedia submissions, and general guidance on making effective comments, please visit: <http://www.epa.gov/dockets/commenting-epa-dockets>.

Due to public health concerns related to COVID-19, the EPA Docket Center and Reading Room are open to the public by appointment only. Our Docket Center staff also continues to provide remote customer service via email, phone, and webform. Hand deliveries or couriers will be received by scheduled appointment only. For further information and updates on EPA Docket Center services, please visit us online at <https://www.epa.gov/dockets>.

The EPA continues to carefully and continuously monitor information from the Centers for Disease Control and Prevention (CDC), local area health departments, and our Federal partners so that we can respond rapidly as conditions change regarding COVID-19.

**FOR FURTHER INFORMATION CONTACT:** For information concerning this proposed decision, contact:

- Kirsten Hillyer, Office of Resource Conservation and Recovery, Materials Recovery and Waste Management Division, Environmental Protection Agency, 1200 Pennsylvania Avenue NW, MC: 5304T, Washington, DC 20460; telephone number: (202)566-0542; email address: [Hillyer.Kirsten@epa.gov](mailto:Hillyer.Kirsten@epa.gov).
- Frank Behan, Office of Resource Conservation and Recovery, Materials Recovery and Waste Management Division, Environmental Protection Agency, 1200 Pennsylvania Avenue NW, MC: 5304T, Washington, DC 20460; telephone number: (202) 566-0531; email address: [Behan.Frank@epa.gov](mailto:Behan.Frank@epa.gov).
- For more information on coal ash regulations, please visit <https://www.epa.gov/coalash>.

Attachment

## **PROPOSED DETERMINATION**

### **Proposed Conditional Approval of Alternative Closure Deadline for the Mountaineer Power Plant**

#### **SUMMARY:**

American Electric Power (AEP) subsidiary Appalachian Power Company (APCO) owns and operates a coal-fired power plant, the Mountaineer Power Plant, in Letart, West Virginia. The Mountaineer Power Plant is located along the Ohio River and approximately 100 miles southeast of Columbus, OH. At Mountaineer, APCO operates a 28 acres unlined coal combustion residuals (CCR) surface impoundment with two basins called the East and West Bottom Ash Ponds (collectively referred to as the BAP). The East and West basins of the BAP were utilized in alternating fashion, with one pond generally receiving wastestreams while the other basin was being cleaned out. The BAP is located on the south side of the plant adjacent to and on the west side of West Virginia Route 62 and is approximately 2,200 feet from the Ohio River. At Mountaineer, there is also a landfill onsite that is located approximately two miles south of the plant.

Under the Environmental Protection Agency (EPA) regulations for CCR landfills and surface impoundments at 40 C.F.R. §257.101(a), unlined CCR surface impoundments such as the BAP were generally required to cease receipt of all CCR and non-CCR wastestreams by April 11, 2021. This deadline was established after the United States Court of Appeals for the District of Columbia Circuit (D.C. Cir.) found that EPA erred when it established a rule that allows unlined CCR surface impoundments to continue to operate until they leak despite the Agency's conclusions that "unlined impoundments have a 36.2 to 57% chance of leakage at a harmfully contaminating level" and that such leaks, when they occur, pose substantial risks to

humans and the environment. *See Utility Solid Waste Activities Group (USWAG) v. EPA*, 901 F.3d 414, 427-428 (D.C. Cir. 2018) (finding that “[i]t is inadequate under RCRA for the EPA to conclude that a major category of impoundments that the agency’s own data show are prone to leak pose ‘no reasonable probability of adverse effects on human health or the environment,’ 42 U.S.C. §6944(a), simply because they do not already leak”). Despite the risks posed by unlined CCR surface impoundments, EPA’s regulations provide an opportunity for such impoundments to continue to operate beyond April 11, 2021, if the owner or operator submits a demonstration showing that the facility meets the criteria for 40 C.F.R. § 257.103(f)(1).

On November 30, 2020, AEP, on behalf of APCO, submitted a demonstration (referred to as the “Demonstration” in this document) for the Mountaineer Plant to EPA seeking an extension pursuant to 40 C.F.R § 257.103(f)(1) to allow the BAP to continue to receive CCR wastestreams until March 31, 2022, and continue to receive non-CCR wastestreams until January 9, 2023. After EPA determined the Demonstration request was complete on January 11, 2022, the requirement to close the BAP was tolled pending a final decision by EPA. 40 C.F.R. § 257.103(f)(3)(ii).

EPA is proposing to find that the Mountaineer Plant is not in compliance with all of the requirements of subpart D of part 257, including noncompliance with the groundwater monitoring and corrective action requirements. For this reason, EPA is proposing to conditionally approve the request for an extension because the Agency has determined that conditions can be developed to address the identified noncompliance before the date of the requested extension. EPA is also taking comment on whether the Agency should deny the request for an extension based on the proposed findings of noncompliance.

**DATES:** *Comments.* Comments must be received on or before August 25, 2022.

**ADDRESSES:** The EPA has established a docket for this notice under Docket ID No. EPA-HQ-OLEM-2021-0842. The EPA established a docket for the August 28, 2020, CCR Part A final rule under Docket ID No. EPA-HQ-OLEM-2019-0172. All documents in the docket are listed in the <https://www.regulations.gov> index. Publicly available docket materials are available either electronically at <https://www.regulations.gov> or in hard copy at the EPA Docket Center. The Public Reading Room is open from 8:30 a.m. to 4:30 p.m., Monday through Friday, excluding holidays. The telephone number for the Public Reading Room is (202) 566-1744, and the telephone number for the EPA Docket Center is (202) 566-1742. You may send comments, identified by Docket ID. No. EPA-HQ-OLEM-2021-0842, by any of the following methods:

- Federal e-Rulemaking Portal: <https://www.regulations.gov/> (our preferred method).  
Follow the online instructions for submitting comments.
- Mail: U.S. Environmental Protection Agency, EPA Docket Center, Docket ID No. EPA-HQ-OLEM-2021-0842, Mail Code 28221T, 1200 Pennsylvania Avenue NW, Washington, DC 20460
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*Instructions:* All submissions received must include the Docket ID No. (EPA-HQ-OLEM-2021-0842) for this action. Comments received may be posted without change to <https://www.regulations.gov>, including any personal information provided. Once submitted, comments cannot be edited or removed from the docket. The EPA may publish any comment received to its public docket. Do not submit electronically any information you consider to be Confidential Business Information (CBI) or other information whose disclosure is restricted by

statute. Multimedia submissions (audio, video, etc.) must be accompanied by a written comment. The written comment is considered the official comment and should include discussion of all points you wish to make. The EPA will generally not consider comments or comment contents located outside of the primary submission (i.e. on the web, cloud, or other file sharing system). For additional submission methods, the full EPA public comment policy, information about CBI or multimedia submissions, and general guidance on making effective comments, please visit <https://www.epa.gov/dockets/commenting-epa-dockets>.

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**FOR FURTHER INFORMATION CONTACT:** For information concerning this proposed decision, contact:

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- Frank Behan, Office of Resource Conservation and Recovery, Materials Recovery and Waste Management Division, Environmental Protection Agency, 1200 Pennsylvania

Avenue NW, MC: 5304T, Washington, DC 20460; telephone number: (202) 566-0531;  
email address: [Behan.Frank@epa.gov](mailto:Behan.Frank@epa.gov).

- For more information on coal ash regulations, please visit <https://www.epa.gov/coalash>.

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**List of Acronyms**

ACM – Assessment of Corrective Measures

AEP – American Electric Power

APCO – Appalachian Power Company

BAP – Bottom Ash Pond

CBI – Confidential Business Information

CCR – Coal Combustion Residuals



C.F.R. – Code of Federal Regulations

ELG – Effluent Limit Guidelines

EPA – Environmental Protection Agency

gpm/sqft – gallons per minute per square foot

GWMCA – Groundwater Monitoring Corrective Action

LCLs – lower confidence levels

MGD – million gallons per day

NPDES – national pollutant discharge elimination system

PJM – PJM Interconnection LLC

RTO – Regional Transmission Organization

SSI - statistically significant increase

SSL – statistically significant level

UHDC – under hopper drag chain

UPLs – upper prediction limits

UTL – upper tolerance limit

## **I. General Information**

### *A. The Decision the Agency is Proposing.*

EPA is proposing to conditionally approve the extension request submitted by AEP as an agent for its affiliate, APCO, for an unlined CCR surface impoundment, the bottom ash pond (BAP), located at the Mountaineer Plant in Letart, West Virginia. AEP submitted the Demonstration to EPA for approval seeking an extension pursuant to 40 C.F.R § 257.103(f)(1) to allow the surface impoundment to continue to receive CCR and non-CCR wastestreams after April 11, 2021.

After review of the Demonstration and additional information provided by APCO, EPA proposes to find that the Demonstration fails to show that APCO is in compliance with the CCR regulations. Notwithstanding this proposed finding, EPA is proposing to conditionally approve the request for an extension, instead of proposing to deny the extension, based on proposed conditions that address the identified compliance issues and that could be implemented at Mountaineer before the date of the requested extension. Thus, EPA is proposing to conditionally approve the request if, prior to final action, APCO agrees to satisfy the conditions specified in Section IV.A of this proposed decision. If the conditions are met, EPA's conditional approval would allow Mountaineer to continue placing certain non-CCR wastestreams in the BAP through January 9, 2023. EPA is proposing that failure to meet any of the conditions subsequent to issuance of the final conditional approval would automatically convert the conditional approval into a denial. In such a case, the facility's deadline to cease placing any waste into the BAP would revert to 135 days from the date of EPA's final decision, which is the deadline that would have been established had EPA denied the extension request. See Section IV.B of this document for further discussion of the basis for that deadline and of the process for a potential extension to address reliability issues.

Additionally, EPA solicits comment on whether to deny the Demonstration on the grounds that it fails to meet the requirements of 40 C.F.R. § 257.103(f)(1)(iv) in case, after reviewing public comment, EPA determines a conditional approval to be inappropriate.

*B. The Agency's Authority for this Proposed Decision.*

This proposal is being issued pursuant to the authority in 40 C.F.R. § 257.103(f).

## II. Background

### A. Summary of Part A Final Rule

In April 2015, EPA issued its first set of regulations establishing requirements for CCR surface impoundments and landfills. “Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals From Electric Utilities,” 80 FR 21302 (April 17, 2015). In 2020, EPA issued revisions to that rule. “Hazardous and Solid Waste Management System: Disposal of Coal Combustion Residuals From Electric Utilities; A Holistic Approach to Closure Part A: Deadline to Initiate Closure rule” 85 FR 53516 (Aug. 28, 2020) (the “Part A Rule”). The Part A Rule established April 11, 2021, as the date that electric utilities must cease placing waste into all unlined CCR surface impoundments. The Part A Rule also revised the alternative closure provisions of the CCR regulations (40 C.F.R. § 257.103) by allowing owners or operators to request an extension to continue to receive CCR and/or non-CCR wastestreams in unlined CCR surface impoundments after April 11, 2021, provided that certain criteria are met. EPA established two site-specific alternatives to initiate closure of unlined CCR surface impoundments (40 C.F.R. § 257.103(f)), commonly known as extensions to the date to cease receipt of waste.

The first alternative is for a facility that must continue to use an unlined CCR surface impoundment after April 11, 2021, because no alternative capacity is available either on-site or off-site, and it was technically infeasible to develop alternative capacity by that date. 40 C.F.R. § 257.103(f)(1) (titled *Development of Alternative Capacity is Technically Infeasible*). The second alternative is for coal-fired boiler(s) that are going to permanently shut down by a date certain after April 11, 2021, but there is no alternative capacity either on- or off-site that is available to accept the CCR and non-CCR wastestreams between April 11, 2021, and the permanent closure

date of the coal-fired boiler. 40 C.F.R. § 257.103(f)(2) (titled *Permanent Cessation of Coal-Fired Boiler(s) by a Date Certain*).

In this case, Mountaineer is requesting an extension under the first Part A alternative. Under this alternative, an owner or operator may submit a demonstration seeking EPA approval to continue using its unlined CCR surface impoundment for the specific amount of time needed to develop alternative disposal capacity for its CCR and/or non-CCR wastestreams. EPA may grant an extension of the deadline to cease receipt of waste if the facility demonstrates that the requirements of 40 C.F.R. § 257.103(f)(1) are met. Specifically, the regulation requires the facility to demonstrate that: 1) no alternative disposal capacity is currently available on or off-site of the facility; 2) the CCR and/or non-CCR waste stream must continue to be managed in that CCR surface impoundment because it was technically infeasible to complete the measures necessary to obtain alternative disposal capacity either on or off-site at the facility by April 11, 2021; and 3) the facility is in compliance with all the requirements of 40 C.F.R. part 257, subpart D. 40 C.F.R. § 257.103(f)(1)(i)-(iii).

Under the first requirement, the owner or operator must demonstrate that there is no alternative disposal capacity available on or off-site. 40 C.F.R. § 257.103(f)(1)(i). As part of this, facilities must evaluate all potentially available disposal options to determine whether any are technically feasible. 40 C.F.R. § 257.103(f)(1)(iv)(A)(1). The owner or operator must also evaluate the site-specific conditions that affected the options considered. 40 C.F.R. § 257.103(f)(1)(iv)(A)(1)(i). Additionally, the regulations prohibit the owner or operator from relying on an increase of cost or inconvenience of existing capacity as a basis for meeting this criterion. 40 C.F.R. § 257.103(f)(1)(i).

The Demonstration must substantiate the absence of alternative capacity for each wastestream that the facility is requesting to continue placing in the CCR surface impoundment beyond April 11, 2021. 40 C.F.R. § 257.103(f)(1)(iv)(A)(I). As soon as alternative capacity is available for any of the wastestreams, the owner or operator must use that capacity to dispose of those wastestreams instead of using the unlined CCR surface impoundment. 40 C.F.R. § 257.103(f)(1)(v). This means that if there is a technically feasible option to reroute any of the wastestreams away from the unlined surface impoundment, the owner or operator must do so. 40 C.F.R. § 257.103(f)(1)(ii), (v). In the CCR Part A Rule preamble, EPA acknowledged that some of these wastestreams are very large and will be challenging to relocate, especially for those that are sluiced. However, the smaller volume wastestreams have the potential to be rerouted to temporary storage tanks. In such cases, the owner or operator must evaluate this option, and, if it is determined to be technically feasible, must implement it. 85 Fed. Reg. 53,541.

EPA also stated in the Part A Rule that it is important for the facility to include an analysis of the adverse impacts to the operation of the power plant if the CCR surface impoundment cannot be used after April 11, 2021. EPA stated that this is an important factor in determining whether the disposal capacity of the CCR surface impoundment in question is truly needed by the facility. EPA required that a facility provide analysis of the adverse impacts that would occur to plant operations if the CCR surface impoundment in question were no longer available. 40 C.F.R. § 257.103(f)(1)(iv)(A)(I)(ii).

In addition, to support the alternative deadline requested in the demonstration, the facility must submit a workplan that contains a detailed explanation and justification for the amount of time requested. 40 C.F.R. § 257.103(f)(1)(iv)(A). The written workplan narrative must describe each option that was considered for the new alternative capacity selected, the time frame under

which each potential capacity could be implemented, and why the facility selected the option that it did. *Id.* 40 C.F.R. § 257.103(f)(1)(iv)(A)(I). The discussion must include an in-depth analysis of the site and any site-specific conditions that led to the decision to implement the selected alternative capacity. 40 C.F.R. § 257.103(f)(1)(iv)(A)(I)(i).

The workplan must contain a visual timeline and narrative discussion to justify the time request. 40 C.F.R. § 257.103(f)(1)(iv)(A)(3). The visual timeline must clearly indicate how each phase and the steps within that phase interact with or are dependent on each other and the other phases. Additionally, any possible overlap of the steps and phases that can be completed concurrently must be included. This visual timeline must show the total time needed to obtain the alternative capacity and how long each phase and step is expected to take. The detailed narrative of the schedule must discuss all the necessary phases and steps in the workplan, in addition to the overall time frame that will be required to obtain capacity and cease receipt of waste. The discussion must include: 1) why the length of time for each phase and step is needed and a discussion of the tasks that occur during the specific step, 2) why each phase and step must happen in the order it is occurring, 3) the tasks that occur during each of the steps within the phase and 4) anticipated worker schedules. 40 C.F.R. § 257.103(f)(1)(iv)(A)(3). This overall discussion of the schedule assists EPA in understanding whether the time requested is warranted. Finally, facilities must include a narrative on the progress made towards the development of alternative capacity as of the time the demonstration was compiled. 40 C.F.R. § 257.103(f)(1)(iv)(A)(4). This section of the Demonstration is intended to show the progress and efforts the facility has undertaken to work towards ceasing placement of waste in the unlined CCR surface impoundment and to determine whether the submitted schedule for obtaining alternative capacity was adequately justified at the time of submission.

The Part A Rule also requires that a facility be in compliance with all the requirements in 40 C.F.R. part 257 subpart D in order to be approved for an extension. 40 C.F.R. § 257.103(f)(1)(iii). Various compliance documentation must be submitted with the demonstration for the entire facility, not just for the CCR surface impoundment in question. 40 C.F.R. § 257.103(f)(1)(iv)(B). Additionally, the information presented in the narrative of the Demonstration and information posted on the facility's website relating to the closure or retrofit of the impoundment and the development of the new alternative disposal capacities are considered by EPA to allow for an adequate analysis of the facility's compliance with the CCR regulations.

The first group of compliance documents required to be included in the Demonstration relate to documentation of the facility's compliance with the requirements governing the design, construction, and installation of the groundwater monitoring systems. The rule specifically requires copies of the following documents: 1) map(s) of groundwater monitoring well locations (these maps should identify the CCR units as well); 2) well construction diagrams and drilling logs for all groundwater monitoring wells; 3) maps that characterize the direction of groundwater flow accounting for seasonal variation; 4) constituent concentrations, summarized in table form, at each groundwater monitoring well monitored during each sampling event; and 5) description of site hydrogeology including stratigraphic cross-sections. 40 C.F.R. § 257.103(f)(1)(iv)(B)(2)-(4).

The second group of documents required under the regulations are those necessary to demonstrate compliance with the corrective action regulations, if applicable. To comply with this requirement, a facility that triggered corrective action must at the least submit the following documentation: the corrective measures assessment required at 40 C.F.R. § 257.96; progress

reports on remedy selection and design; and the report of final remedy selection required at 40 C.F.R. § 257.97(a). 40 C.F.R. § 257.103(f)(1)(iv)(B)(5) and (6).

Finally, the regulations require facilities to submit the most recent structural stability assessment required at 40 C.F.R. § 257.73(d), and the most recent safety factor assessment required at 40 C.F.R. § 257.73(e) and §§ 257.103(f)(1)(iv)(B) (7) and (8).

*B. Description of Mountaineer Plant and Summary of Request for Extension*

On November 30, 2020, AEP, as an agent for its affiliate, APCO, submitted the Demonstration pursuant to 40 C.F.R. § 257.103(f)(1) requesting additional time to develop alternative capacity to manage CCR and non-CCR wastestreams at the Mountaineer Plant in Letart, West Virginia.<sup>1</sup> APCO is the owner and operator of the Mountaineer Plant. EPA reviewed the Mountaineer Demonstration to determine whether it included the required information, analyses, and documentation required under 40 C.F.R. § 257.103(f)(1). On January 11, 2022, EPA notified AEP that its demonstration was deemed complete, and, pursuant to 40 C.F.R. § 257.103(f)(3)(ii), that completeness determination tolls the April 11, 2021 cease receipt of waste date for the unlined surface impoundment the Demonstration covers until EPA issues a final decision on this proposed action. *See* Letter to AEP in the docket.

The Demonstration submitted by APCO seeks approval of an alternative site-specific deadline to complete closure of the Mountaineer BAP. Specifically, the Demonstration requests alternative deadlines of March 31, 2022, and January 9, 2023, as the dates APCO will cease routing all CCR and non-CCR wastestreams, respectively, to the Mountaineer BAP. The Demonstration further states that complete closure of the CCR surface impoundment will occur by July 21, 2023.

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<sup>1</sup> See Mountaineer Alternative Deadline for Closure Demonstration in the Docket



As described in the Demonstration, APCO plans to obtain alternative capacity to the Mountaineer BAP by implementing the following efforts: 1) installing equipment necessary for dry bottom ash conversion by using an under hopper drag chain (UHDC) conveyor system; and 2) repurposing the BAP to a lined pond for the non-CCR wastestreams.

To assist the readers' review, EPA provides below additional details on the Mountaineer facility, including information on the generation capacity of the Mountaineer Power Plant, information on its CCR surface impoundments and landfill, and information on other non-CCR impoundments. This summary is based on information provided in the Demonstration.

*1. Coal-fired boilers and generation capacity.*

The Demonstration states that Mountaineer operates a single boiler, dual turbine plant that has a net generation capacity of 1,300 megawatts (MW).

*2. CCR units and CCR wastestreams.*

APCO currently operates two CCR units at Mountaineer that are subject to the federal CCR regulations: the Mountaineer BAP and the Mountaineer Landfill. The Mountaineer BAP is a surface impoundment with two basins called the East and the West Bottom Ash Ponds (collectively referred to as the "BAP" in the Demonstration) and it is the CCR unit for which alternative dates to cease receipt of waste are sought. The Demonstration states that the approximate surface area of the BAP is 28 acres. The BAP CCR surface impoundment receives approximately 2.2 million gallons a day (MGD) of sluiced water containing bottom ash.

The second unit is an active CCR landfill named the Mountaineer Landfill, located approximately two miles southwest of the plant operations. The Mountaineer Landfill is

described as approximately 660 total acres (including disposal and non-disposal operation) of which 297 acres are currently permitted for coal ash disposal.<sup>2</sup>

Relevant to APCO's request, the BAP is an unlined CCR surface impoundment and subject to closure pursuant to 40 C.F.R. § 257.101(a)(1). This provision requires APCO to cease placing CCR and non-CCR wastestreams into the unit and either retrofit or close it as soon as technically feasible, but not later than April 11, 2021. According to the Demonstration, the BAP complies with all location restrictions specified in 40 C.F.R. §§ 257.60-257.64.

Based on the evaluation of alternative disposal options, APCO selected the following options for compliance at the Mountaineer Plant: 1) converting from wet bottom ash system to dry handling system, using a UHDC conveyor system, 2) closing of the BAP CCR surface impoundment by removal, and 3) installing new, lined, non-CCR wastewater settling ponds within the footprint of the BAP CCR surface impoundment. The Demonstration maintains the alternative capacities and strategy can be implemented in the least amount of time of the alternatives evaluated and accommodates the unique site features such as quantity of wastestreams and the lack of off-site disposal facilities. The Demonstration concludes that the planned alternative complies with both the CCR rule and Effluent Limit Guidelines (ELG) applicable to the Mountaineer Plant.

3. *Non-CCR impoundments and non-CCR wastestreams.*

Approximately 8.5 MGD of various non-CCR wastestreams are sent to the BAP CCR surface impoundment. These wastestreams include coal pile runoff, limestone and gypsum area runoff, fly ash silo sump water, pyrites transfer water, various low volume wastestreams (wash down of the plant areas) to plant drains and sumps, and storm water runoff.

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<sup>2</sup> Demonstration, PDF p. 456

New non-CCR Wastewater Settling Ponds: First, a new (14-acre) lined East Settling Pond will be constructed within the footprint of the existing East basin of the BAP, to treat non-CCR wastestreams generated at the plant. The East Settling Pond will discharge to the existing East Wastewater Pond, which will continue to discharge (in series) to the existing Reclaim Pond, Clearwater Pond, and the Ohio River pursuant to a West Virginia national pollutant discharge elimination system (NPDES) permit. Second, the new (14-acre) lined West Settling Pond will be constructed within the footprint of the existing West basin of the BAP to treat non-CCR wastestreams generated at the plant. The West Settling Pond will discharge to the existing West Wastewater Pond, which will continue to discharge (in series) to the existing Reclaim Pond, Clearwater Pond, and the Ohio River pursuant to the NPDES permit. Finally, a tank-based chemical treatment system with appropriate retention time to provide proper mixing of chemicals to facilitate settling to meet plant discharge requirements will be installed.

### **III. EPA Analysis of Demonstration**

EPA is proposing to conditionally approve the extension request for the BAP CCR surface impoundment at the Mountaineer Plant because, although APCO has not demonstrated that the facility is in compliance with all the requirements of 40 C.F.R. part 257 subpart D, EPA has determined that conditions can be developed to bring the facility into compliance with the CCR rule requirements.

Below, EPA first discusses APCO's evaluation of on- and off-site capacity and the impacts on the facility if the BAP cannot be used through the proposed extension date. EPA is proposing to find that the analyses provided in the Demonstration support APCO's conclusions that no alternative capacity is available and that there would be adverse impacts on the facility if the BAP is closed before the requested extension.

EPA then discusses APCO's compliance with the other requirements of the Subpart D regulations applicable to Mountaineer. EPA is proposing to conclude that the Demonstration does not support the sufficiency of the groundwater monitoring network or demonstrate compliance with the required corrective action measures. EPA has developed conditions that will address the identified issues. If APCO agrees to meet the conditions, EPA may grant an extension to the cease receipt of waste date as discussed further below.

*A. Evaluation of APCO's Claim of No Alternative Disposal Capacity On- or Off-Site*

As discussed above in Section II.A., to obtain an extension of the cease receipt of waste deadline, the owner or operator must demonstrate that there is no alternative disposal capacity available on- or off-site. 40 C.F.R. § 257.103(f)(1)(iv)(A). In this case, the Demonstration provides detailed analyses of the potential alternative disposal options both on- and off-site as required by the Part A Rule, and as discussed below, EPA is proposing to find that the conclusion that no alternative capacity exists is supported by the information provided.

*1. Lack of Alternative Capacity for CCR Wastestreams*

The Mountaineer Plant produces one sluiced CCR wastestream that is currently managed in the BAP. The Demonstration states that the bottom ash is sluiced to the BAP at an average flow rate of 2.2 MGD. All the other CCR wastestreams at the Mountaineer Plant are handled dry and are disposed of in the Mountaineer Landfill on-site so they are not relevant for this evaluation.

*(a) On-site Capacity.* APCO concludes that the only available onsite capacity for the CCR wastestream is the BAP. The BAP receives approximately 2.2 MGD of sluiced water containing bottom ash. There is not another CCR surface impoundment at the Mountaineer Plant;

therefore, APCO maintains that there is not available on-site capacity for disposal of the sluiced bottom ash wastestream.

EPA agrees that there is not another existing CCR unit at the Mountaineer Plant that is capable of managing the sluiced CCR wastestream. There is the Mountaineer Landfill onsite; however, to use the Mountaineer Landfill for the bottom ash it would need to be separated from the sluice water and dried. Therefore, EPA is proposing to conclude that there is not an alternative available on-site for the sluiced bottom ash wastestream.

*(b) Off-site Capacity.* APCO states in the Demonstration that it is impractical to dispose of the bottom ash off-site due to the volume produced per day. The 2.2 MGD of bottom ash sluice flow equates to approximately 9,130 tons per day of sluiced bottom ash water. The Demonstration states that this will require 457 trucks per day (or one truck every three minutes) to haul the CCR off-site. Additionally, APCO states that there are no facilities to collect and load this wastestream into tanks for transport, and construction of such facilities would interfere with the construction activities for the long term compliance option that APCO is implementing to comply with the CCR and ELG rules. The increase of truck traffic will also pose significant safety risks and will likely be impossible to functionally achieve.

EPA agrees with the analysis provided in the Demonstration and is proposing to conclude that it is not technically feasible to divert the sluiced bottom ash off-site based on the reasons set forth above.

## 2. *Lack of Alternative Capacity for Non-CCR Wastestreams*

APCO states approximately 8.5 MGD of various non-CCR wastestreams are managed in the BAP. These wastestreams include coal pile runoff, limestone and gypsum area runoff, fly ash silo sump water, pyrites transfer water, various low volume wastestreams (wash down of the

plant areas) to plant drains and sumps, and storm water runoff. Each of these wastestreams vary in volume from 0.38 to 3.7 MGD. The total average flow rate for the non-CCR wastestreams is approximately 8.5 MGD. The non-CCR wastestreams are summarized in Table 1. For the trucks required in Table 1 the calculation is:

$$\frac{\text{Average Flow gallons}}{\text{day}} \times \frac{8.3 \text{ pounds}}{\text{gallons}} \times \frac{\text{ton}}{2000 \text{ pounds}} \times \frac{\text{truck}}{20 \text{ tons}} = \frac{\text{trucks}}{\text{day}}$$

Table 1: Non-CCR wastestream flows to the BAP<sup>3</sup>

Non-CCR Wastestream	Average Flow (gpd)	Current Configuration	AEP Notes	Trucks Required
Coal Pile Runoff Ponds (includes Limestone & Gypsum Area Runoff) and Storm Water Sump	200,000 plus 180,000 gallons from Storm Water Sump	Flows to the existing BAP	The BAP provides treatment for these non-CCR wastestreams (primarily solids settling) to allow them to meet the NPDES discharge limits	79 per day
North and South Fly Ash Silo Sumps	3,100,000	Flows to the existing BAP		644 per day
Turbine Room Sump	3,700,000	Flows to the existing BAP		768 per day
Pyrite Transfer Water	1,300,000	Sluiced to the existing BAP	Pyrite material will be sluiced to the new East Settling Pond before being dewatered and transported to the onsite landfill	270 per day

(a) *On-site Capacity.* APCO states that there are not any alternative ponds available on-site that can accept the non-CCR wastestreams. The Mountaineer Plant does have wastewater, reclaim, and clearwater ponds downstream of the BAP, however, there is not existing infrastructure to deliver the wastestreams to these ponds. In addition, APCO states that re-routing

<sup>3</sup> Table 1 extracted from the Demonstration (pages 5-6)

these wastestreams to these other ponds will decrease the settling time, increase loading to the ponds, and require permitting equivalent to the permitting required for the selected alternative. To support its statements about settling time, APCO conducted a hydraulic analysis to determine whether rerouting the non-CCR wastestreams would provide adequate settling time for treatment in the wastewater, clearwater and reclaim ponds. The analysis shows that ideal solids settling time is 0.05 gallons per minute per square foot (gpm/sqft) or less, with the recommendation to not exceed 0.10 gpm/sqft. Based on these findings, APCO concludes that these settling times cannot be achieved in the east or west wastewater ponds without a risk for solids carryover to the clearwater and reclaim ponds, which could result in violations of the NPDES discharge limits and negatively impact other recycle streams for the plant operations. Therefore, APCO concludes that there is not available alternative capacity on-site for the non-CCR wastestreams.

EPA evaluated APCO's analysis for the lack of capacity available on-site and is proposing to agree that the Mountaineer plant does not have sufficient existing capacity for the non-CCR wastestreams when excluding the BAP, primarily based on their analysis of the proper settling time needed if the wastestreams were sent to the wastewater, clearwater and reclaim ponds.

*(b) Off-site Capacity.* APCO conducted a similar analysis for off-site disposal options for the non-CCR wastestreams as it did for the CCR wastestream, and, based on that analysis, APCO states that the large volume of non-CCR wastestreams produced makes it not technically feasible to divert the wastestreams off-site. The 8.5 MGD of non-CCR wastestreams equates to 35,192 tons per day and would require 1,760 trucks per day (more than one truck leaving the plant every minute) to haul the wastestreams off-site. Table 1, above, shows truck requirements for the individual non-CCR wastestreams. In addition, APCO states that there are currently no existing

facilities on-site to collect and load the wastestreams into tankers for transport, and construction of such facilities to manage these flows on a temporary basis would interfere with the construction activities for the long term compliance option. Additionally, the rate of truck traffic needed will be impossible to achieve and in any event would pose a significant safety risk. APCO concludes that it is not possible to divert the non-CCR wastestreams off-site.

EPA is proposing to agree that there is a lack of off-site capacity for non-CCR wastestreams. EPA agrees that it is technically infeasible to divert the wastestreams off-site, given the volume of trucks that would be needed, and that the construction of facilities to manage these flows on a temporary basis would interfere with the construction activities for long term compliance. The only wastestream that has the potential to be diverted off-site is the Coal Pile Runoff Ponds and Storm Water Sump, which would require just over three trucks per hour or one truck leaving every 18 minutes. However, given that this wastestream includes the Storm Water Sump, it would be impossible to manage this part of the wastestream during a rain event. Therefore, EPA is proposing to agree with APCO's conclusion that there is not capacity available off-site for any of the non-CCR wastestreams.

*B. Evaluation of APCO's Analysis of Adverse Impacts to Plant Operations*

The Part A Rule next requires that a facility provide analysis of the adverse impacts that would occur to plant operations if the CCR surface impoundment in question were no longer available. 40 C.F.R. § 257.103(f)(1)(iv)(A)(I)(ii). APCO provided a justification in their Demonstration as required, and, for the reasons discussed below, EPA is proposing to find that there would be adverse impacts to the power plant if the BAP could not be used after April 11, 2021.



APCO maintains that if the Mountaineer Plant is required to immediately cease placement of CCR and non-CCR wastestreams into the BAP, then APCO will need to cease power production temporarily or permanently at the facility. APCO further states that the idling or closure of the Mountaineer Plant will stop the production of CCR wastestreams and some non-CCR wastestreams, but it will not eliminate the need for handling other non-CCR wastestreams such as coal pile runoff and low volume wastewater from various water collection sumps from around the plant. Finally, APCO asserts that the BAP is critical in treating these wastestreams in order to meet its NPDES discharge limits. Therefore, APCO states that the BAP will still be needed even if the Mountaineer Plant were to cease operation or discontinue the combustion of coal and the production of CCR wastestreams.

APCO also maintains that the immediate forced cessation of power production at the Mountaineer Plant could cause serious local power delivery constraints and more regional reliability concerns in the affected states. APCO's Demonstration includes tables of the "*Utility Scale Generation from Coal – 2018 and 2019*" for the midwestern states in which AEP operates generating Units.<sup>4</sup> The tables show that West Virginia is heavily dependent on the power generation from coal. Based on this, APCO concludes that the cessation of the Mountaineer Plant will heavily impact the grid if multiple coal generating plants were to cease operation simultaneously.

EPA understands that requiring APCO to immediately cease placement of waste is not feasible for Mountaineer without impacts to the Mountaineer Power Plant. Additionally, EPA understands that if the Mountaineer Plant were to idle or shut down, that will not completely stop all the wastestream flows to the BAP, as coal pile run off and other non-CCR flows from around

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<sup>4</sup> See Demonstration pdf page 15

the plant would continue. EPA proposes to find that if the Mountaineer Power Plant were unable to continue using the BAP, and if no other on- or off-site alternative capacity is available, there would be adverse impacts on the ability to run the associated boiler such that a longer planned temporary outage would likely be required. EPA considers that the information APCO has submitted is insufficient to substantiate their claims regarding the broader impact of such an outage. However, as discussed in Unit IV.B.2, EPA is proposing to establish a process that would allow APCO to demonstrate that a temporary outage will impact grid reliability.

*C. Evaluation of APCO's Site-Specific Analysis for the Alternative Capacity Selected and Justification for Time Requested to Develop Selected Alternative*

As discussed above in section II.A., the regulations require APCO to demonstrate that the time it is requesting is the fastest technically feasible time frame to develop their selected alternative capacity option, and that the development of any of the available alternatives to manage the wastestreams was not feasible prior to April 11, 2021. To support these findings, the facility must submit a detailed justification for the amount of time requested that includes: 1) a description of each option that was considered; 2) the time frame under which each potential capacity could be implemented, and 3) why the facility selected the option that it did, along with an in-depth analysis of the site and any site-specific conditions that led to the decision to implement the selected alternative capacity. 40 C.F.R. § 257.103(f)(1)(iv)(A)(I)(i). These factors assist EPA in understanding whether the time requested is warranted.

We have evaluated APCO's analysis and are proposing to conclude that the time requested is the fastest technically feasible time frame to develop their selected alternative capacity option, and that the development of any of the other available alternatives to manage the wastestreams was not feasible prior to April 11, 2021.

*1) Selected Alternative Capacities for the BAP*

In the Demonstration APCO evaluated alternative capacity options to manage the CCR and non-CCR wastestreams currently managed by the BAP. The evaluation determined the feasibility of options to achieve compliance with the CCR requirements as well as ELG requirements. APCO asserts that constructing a new CCR impoundment and retrofitting all or a portion of the BAP would be possible at the Mountaineer Plant; however, these methods would not achieve compliance with the applicable ELG. Therefore, these methods were not selected for the Mountaineer Plant.

APCO also evaluated the potential of utilizing a temporary treatment tank system for the CCR and non-CCR wastestreams. APCO maintains that the temporary treatment system to manage the CCR and non-CCR wastestreams for the Mountaineer Plant would require a chemical feed system, chemical mix tanks, clarifiers, and a filtration system. Based on the typical and maximum flow rates, the number and size of clarifiers required to handle these wastestreams to replace the BAP would range from 2 to 4, 140-foot diameter tanks. APCO states that this size of temporary system is well beyond any type of rental units that are available.

APCO asserts that the best alternative capacity method for the Mountaineer Plant is a multiple technology system composed of converting the boiler to dry bottom ash handling and repurposing the BAP to receive non-CCR wastestreams. APCO selected this approach because it will achieve the necessary compliance needs on the fastest technically feasible schedule for the Mountaineer Plant, balancing both CCR and ELG rule requirements. APCO asserts it will take 21 months to complete the conversion to dry handling for the bottom ash handling system and 29 months to complete repurposing the BAP to a non-CCR wastestream basin.

The Demonstration also contained an evaluation of the available bottom ash dry handling system technologies to determine if they would be feasible to implement at the Mountaineer Plant (shown in Table 4 of the Demonstration). APCO determined that all the technologies would require the same amount of time to implement. APCO selected the UHDC conveyor system because it determined it was best suited for the site-specific circumstances.

As noted above, APCO evaluated various dry handling systems and selected the UHDC conveyor system. This system will require a planned boiler outage to complete the tie in of the equipment and make the final transition to the dry handling system. Prior to the planned outage, APCO plans to complete as much work as possible to make the most efficient use of the outage time. During the outage, APCO will install the UHDC conveyor system and associated equipment to collect and dewater the bottom ash. APCO will also need to install a concrete ash bunker to collect and temporarily store CCR material from the UHDC conveyor system and a sump at the new ash bunker to collect storm water or excess quench water and return to the ash hopper pit sump. Material from the ash bunker will be hauled to the Mountaineer landfill for disposal or be sold for beneficial use. Once APCO completes the conversion to dry handling for the bottom ash, they will cease placement of CCR into the BAP. This was scheduled for March 31, 2022.

APCO determined that due to lack of available land for a new non-CCR wastewater basin, it is going to repurpose the area where the BAP is currently located to construct the new basins. In order for this to happen, APCO will need to first divert the wastestreams from the east basin of the BAP to the west basin of the BAP. APCO will then begin closure by removal by dewatering and removing all the CCR from the basin by mechanical excavation. All the CCR material will either be hauled to the Mountaineer landfill for disposal or beneficially used. APCO

states that a third-party engineer will independently certify the removal of CCR upon completion. It further states that this certification will be performed in phases across the entire BAP, and that the verification of the removal of the CCR will be done both visually and by analytical testing. The contractor will then remove an extra foot of soil as a precautionary measure to remove any contamination from the basin and test soil samples for Appendix IV constituents.

Once all the contamination removal is verified complete, APCO states that the contractors will begin the construction to repurpose the east basin of the BAP for the East Settling Basin. First, APCO plans to establish a new subgrade, prepare for the liner installation, and prep the subgrade for the installation of the new tank-based chemical treatment system that will facilitate settling to meet plant discharge requirements at the new non-CCR wastewater ponds. The new East Settling Basin will be lined. APCO did not include the liner specifications in the Demonstration.

Once the East Settling Basin and the tank-based chemical treatment system are complete, APCO states that the non-CCR wastestreams will be diverted to the East basin from the West basin of the BAP. Then the same repurposing process that occurred for the East basin will be done for the West basin to construct the West Settling Basin. When the non-CCR wastestreams are diverted to the East Settling Basin, APCO will cease placement of waste in the BAP. This is currently scheduled for January 2023.

*2) Evaluation of APCO's Justification for Time Requested to Develop Selected Alternative Disposal Capacity.*

As discussed above in section II.A., facilities must demonstrate that the amount of time requested in the demonstration is the fastest technically feasible time to develop the selected

alternative disposal capacity by including a visual timeline and narrative discussion to support the time requested. 40 C.F.R. § 257.103(f)(1)(iv)(A)(I)(iii) and § 257.103(f)(1)(iv)(A)(3).

APCO developed the required timeline and narrative and, based on its evaluation, determined that the best alternative capacity method for Mountaineer is a multiple technology system consisting of a conversion to dry handling of bottom ash and development of two new non-CCR wastewater basins that will take 21 and 29 months, respectively, to implement. APCO selected an UHDC conveyor system to convert the bottom ash to dry handling. The Mountaineer Plant already has a CCR landfill onsite for the dry bottom ash to be disposed in when the conversion is complete. As discussed below, EPA is proposing to conclude that APCO has justified the time requested to develop alternative disposal capacity.

*a) Evaluation of Time Necessary to Convert to Dry Handling*

The dry bottom ash handling system project schedule is driven by the scheduled boiler outage to allow for the removal of the current sluicing system and installation of the new UHDC conveyor system equipment. According to the Demonstration, APCO started the design and engineering for the dry handling system in August 2020 and anticipated it to be completed by August 2021. The Demonstration also states that APCO worked with the Region Transmission Operator (RTO) to obtain approval for an outage for the Unit in the Spring of 2022. According to APCO, the RTO procedures do not allow the Mountaineer Plant much flexibility to adjust these outages or perform them in the non-shoulder months (summer and winter) due to the limited generating capacity during these peak electricity usage times. To prepare for the outage and the installation of the UHDC conveyor system, as much work as possible was supposed to be completed prior to the Spring 2022 outage.

The Demonstration also asserts that APCO is planning to have three construction labor contracts that will be developed in parallel with the detailed design efforts. APCO allowed for approximately six months to seek competitive bids and award the labor contracts to complete the necessary work. The first labor bid package for the civil labor contract was planned to be issued for bid in March 2021 and awarded in August 2021. The Demonstration notes that the Structural/Mechanical (S/M) and Electrical, Instrumentation, and Controls (EIC) construction bid packages were scheduled to be issued in March and May of 2021 and awarded in August and October of 2021. The civil construction was planned to start immediately following award in August 2021.

The construction of the dry handling system was planned to occur between August 2021 and May 2022. A significant portion of the construction for the conversion to dry handling was supposed to be done prior to the Spring 2022 outage. As much of the needed structural and electrical relocations and additions are planned prior to the outage so that the outage can be used to tie in the new UHDC equipment and conduct work that is required to be done during the outage. Once the outage begins no new sluiced bottom ash will be generated. Therefore, APCO requested March 31, 2022, as their date to cease placement of CCR into the BAP.

On February 14, 2022, EPA contacted AEP to request additional information on the current progress toward construction of the conversion to a bottom ash handling system. On March 1, 2022, AEP responded to EPA's request and stated that the Bottom Ash Conversion is proceeding as scheduled.<sup>5</sup> On May 13, 2022, EPA contacted AEP for an update on if Mountaineer ceased receipt of waste on March 31, 2022, for CCR wastestreams into the BAP. On May 18, 2022, AEP responded that sluicing CCR to the BAP ceased on March 10, 2022.<sup>6</sup>

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<sup>5</sup> See Mountaineer – CCR Part A Demonstration, Request for Additional Information – AEP Response in the docket.

<sup>6</sup> See Mountaineer Cease Receipt of CCR Wastestreams – Email May 18, 2022

EPA proposes to conclude that the process and time requested for the conversion of the bottom ash system to dry handling is reasonable. EPA believes APCO planned to and did use the time prior to the outage efficiently in order to prepare for the outage in the Spring of 2022. The start of the outage was correlated to the requested date to cease placement of CCR into the BAP because sluiced CCR would not be generated during or after the outage. EPA is proposing to conclude that the date requested to cease receipt of the CCR wastestream into the BAP is the fastest technically feasible time frame to develop their selected alternative capacity option, and that the development of this alternative to manage the wastestreams was not feasible prior to April 11, 2021.

*b) Evaluation of the Time to Close the BAP and Construct the Settling Pond*

APCO states in the Demonstration that the BAP is divided into two basins, East and West, that are used in alternating fashion, with one pond generally receiving wastestreams while the other pond is being cleaned out. APCO is planning to divert all the wastestreams to the West BAP while completing closure of the East BAP and construction of the new East Settling Basin. APCO started the engineering and design of the BAP closure and new settling ponds in August 2020 with the plan to be completed by September 2021. Additionally, APCO states that it will need to work with West Virginia Department of Environmental Protections on updates to their NPDES permit, WV Dam Safety, and air permit determinations to construct the ponds. APCO started this process in November 2020 and anticipated permit processes to end in December 2021.

Similar to the conversion to dry handling, APCO states they will be issuing three construction labor packages in parallel with the detailed design efforts and each other. APCO again estimated six months to competitively bid and award each of the packages. The first



package was supposed to be put out for bid in August 2021 and awarded to the selected construction contractors by March 2022. The two other packages were supposed to be issued in September and December 2021 and were supposed to be awarded by March and June 2022, respectively. The East Settling Basin construction was planned to begin immediately following award in March 2022.

APCO anticipated that the removal of the CCR from the East BAP basin would occur between March and June of 2022. The Demonstration also states that upon certification of closure by removal, APCO will proceed with construction of the new East Settling Pond within the East BAP basin footprint. APCO anticipates that the new East Settling Pond will be completed by October 2022.

While the new East Settling Pond is being constructed, APCO states in the Demonstration it will also be constructing the tank-based chemical treatment system that will be located within the footprint of the East BAP basin. The tank-based chemical treatment system construction is anticipated to begin in August 2022 and be completed in January 2023. Upon completion of this treatment system the non-CCR wastestreams will be able to be routed from the West BAP basin to the new East Settling Pond. At this point, the BAP will no longer be receiving non-CCR wastestreams. Therefore, APCO requests January 9, 2023, for the date to cease placement of non-CCR wastestreams into the BAP.

On February 14, 2022, EPA contacted AEP to request additional information on the current state of closure and construction. On March 1, 2022, AEP responded to EPA's request for an update and stated that the schedule for the contracts associated with the BAP repurposing were delayed.<sup>7</sup> Notwithstanding the delay, AEP maintains that the construction of the BAP

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<sup>7</sup> See Mountaineer – CCR Part A Demonstration, Request for Additional Information – AEP Response in the docket.

repurposing will otherwise proceed in accordance with the plan outlined in the Demonstration and AEP expects to meet the target dates.

EPA evaluated the time requested to complete the construction on the closure of the East BAP and new East Settling Pond and is proposing to conclude that it is the fastest feasible time to develop their selected alternative capacity option, and that the development of any other alternative to manage the wastestreams was not feasible prior to April 11, 2021.

#### *D. Evaluation of APCO's Compliance Documentation*

The Part A Rule requires that a facility must be in compliance with all the requirements in 40 C.F.R. part 257 subpart D in order to be approved for an extension to the cease receipt of waste deadline. 40 C.F.R. § 257.103(f)(1)(iii). In this case, as discussed below, EPA has identified deficiencies in the monitoring network and in implementation of corrective actions. We discuss these issues in detail below.

##### *1. Groundwater Monitoring Compliance*

As stated in Section II.A. above, the regulations require development of a groundwater monitoring network that will identify the baseline level of constituents in the uppermost aquifer upgradient of a CCR unit, so that those levels can be compared with the levels in the wells downgradient of the CCR unit. *See* 2015 CCR rule preamble at 74 FR 21302, 21399-400. The objective of a groundwater monitoring system is to analyze groundwater to determine whether it has been contaminated by the CCR unit being monitored. Prompt contaminant detection is important in order for corrective measures to be developed to stop migration of contaminants as soon as possible.

To ensure detection of a release, the regulations establish a general performance standard that all groundwater monitoring systems must meet: all groundwater monitoring systems must

consist of a sufficient number of appropriately located wells that will yield groundwater samples in the uppermost aquifer that represent the quality of the background groundwater and the quality of groundwater passing the downgradient waste boundary. 40 C.F.R. § 257.91(a)(1), (2).

Because hydrogeologic conditions vary so widely from one site to another, the regulations do not prescribe the exact number, location, and depth of monitoring wells needed to achieve the general performance standard. Rather the regulation requires installation of a minimum of one upgradient and three downgradient wells, as well as any additional monitoring wells necessary to achieve the general performance standard of accurately representing the quality of the background groundwater and the groundwater passing the waste boundary. 40 C.F.R. § 257.91(c)(1), (2). The number, spacing, and depths of the monitoring wells must be determined based on a thorough characterization of the site, including a number of specifically identified factors relating to the hydrogeology of the site (e.g., aquifer thickness, groundwater flow rates and direction). 40 C.F.R. § 257.91(b). Groundwater elevation measurements must be obtained around the unit(s) at sampling events over time to calculate groundwater flow direction at those times and identify seasonal and temporal fluctuations. Further, any facility that determines that the regulatory minimum number of wells is adequate must provide a factual justification for that decision. 40 C.F.R. § 257.91(f). In essence, the regulation establishes a presumption that the minimum of one upgradient and three downgradient wells is not sufficient, and it requires the facility to rebut the presumption in order to install only this minimum.

In addition, the placement of the monitoring wells is critical to proper characterization of the groundwater, but even a sufficient number of properly placed wells will not provide adequate characterization if the sampling and analysis of data are not properly conducted.

The regulations require facilities to submit several groundwater monitoring compliance documents as part of their demonstrations so that EPA can thoroughly evaluate the groundwater monitoring network and the site hydrogeology for every CCR unit at the facility. 40 C.F.R. § 257.103(f)(1)(iv)(B)(2), (3) and (4). EPA evaluated the documentation APCO provided in the Demonstration and reviewed the 2017 through 2019 Annual Groundwater Monitoring and Corrective Action (GWMCA) Reports. The Demonstration provides information for two groundwater monitoring systems: a groundwater monitoring system for the Mountaineer BAP and a groundwater monitoring system for the Mountaineer Landfill. EPA is proposing to determine that both groundwater monitoring systems are inadequate for multiple reasons set forth below, and, therefore, do not adequately demonstrate compliance with the regulations.

First, the Annual GWMCA Reports do not include information required by 40 C.F.R. § 257.90(e). Second, APCO failed to meet requirements in the regulations for sampling and analysis of data. Third, background wells at the Mountaineer Landfill are not located in accordance with 40 C.F.R. §§ 257.91(a)(1) or (b) and may be contaminated by the unit. Fourth, downgradient wells at the Mountaineer Landfill do not meet requirements in 40 C.F.R. §§ 257.91(a)(2) or (b). Fifth, groundwater monitoring data were inappropriately excluded from analysis of the data as outliers. Finally, intrawell data comparisons were used inappropriately.

*(a) Completeness of Annual Reports*

The Demonstration was determined to be complete because it contained all the required documentation. EPA's subsequent review of the Annual GWMCA Reports for both CCR units at the facility revealed that those reports did not include all the monitoring data required to be collected under 40 C.F.R. §§ 257.90 through 257.98, as required by 40 C.F.R. § 257.90(e)(3). Specifically, no laboratory analytical reports were included in these reports. Also, statistical

analyses of the May 2018 and September 2018 monitoring data at the BAP were not provided in an Annual GWMCA Report. As a result, EPA is proposing to find that these reports do not comply with the requirements in 40 C.F.R. § 257.90(e)(3).

The purpose of an Annual GWMCA Report is to provide the most recently obtained groundwater and corrective action information to allow for review of compliance with the requirements. The groundwater monitoring and corrective action provisions in 40 C.F.R. §§ 257.90 through 257.98 include numerous requirements (e.g., standards for lowest achievable quantitation limits, requirement to analyze samples for total recoverable metals, performance standards for various statistical methods). It is the owner or operator's responsibility to demonstrate that it is in compliance with the regulations, and the failure to provide this information in the Annual GWMCA Reports prevents the EPA, states, or other stakeholders from being able to evaluate compliance.

In order to address this noncompliance, EPA is proposing that APCO amend past Annual GWMCA Reports to contain all monitoring data obtained under 40 C.F.R. §§ 257.90 through 257.98, including: groundwater elevation measurements, statistical analyses (i.e., data used in the analyses, normality assessment, results, confidence levels, and any limitations of the analysis), and laboratory analysis reports for all monitoring data.

*(b) Failure to Conduct Statistical Analysis of Groundwater Data*

At both the BAP and the Mountaineer Landfill, APCO failed to conduct statistical analyses on the initial eight baseline samples required by the detection monitoring provisions in 40 C.F.R. § 257.94(b).<sup>8</sup> The purpose of baseline samples is to provide a data set large enough

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<sup>8</sup> The Demonstration improperly characterizes the initial eight baseline samples as background samples, but this is not the case, because baseline samples are required to be obtained from both upgradient (background) and downgradient compliance wells.

(i.e., with enough data points) for the selected statistical method to be valid; many statistical methods require a data set that contains at least eight samples. Statistical analyses of these initial data sets were required to be completed no later than 90 days after sampling and laboratory analysis were completed. See 40 C.F.R. § 257.90(b)(iv). The eight baseline samples at both the BAP and the Mountaineer Landfill were obtained by June 14, 2017. The date the laboratory analysis was completed is not known because the analytical reports were not included in the Annual GWMCA Reports, but sampling and analysis of the initial baseline samples for an existing CCR unit was required no later than October 17, 2017. 40 C.F.R. § 257.94(b). The statistical analysis of the results would have been required no later than 90 days after that, by January 15, 2018. APCO has not demonstrated compliance with the requirement to complete the statistical analysis by including it in an Annual GWMCA Report. For this reason, EPA is proposing that APCO must conduct this statistical analysis to remedy this noncompliance as a condition of this approval and include it in the revised Annual GWMCA Report(s).

*(c) Improper Placement of Background Wells*

EPA is proposing to determine that background wells at the Mountaineer Landfill are not located in accordance with 40 C.F.R. § 257.91(a)(1) and may be contaminated by the unit. EPA is also proposing to determine that two of the four background wells at the BAP are not upgradient of the unit and do not meet the requirements for wells that are not upgradient in 40 C.F.R. § 257.91(a)(1)(i) or (ii).

The two background wells in the monitoring system at the Mountaineer Landfill are MW-1612 and MW-30,<sup>9</sup> and both are labeled as upgradient wells. However, groundwater flow in Figures 6 through 9 in the Demonstration is depicted away from the southwest corner of the

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<sup>9</sup> "Annual Groundwater Monitoring Report," Mountaineer Landfill, January 2020, Figure 1

landfill, toward MW-30, which indicates MW-30 was downgradient of the landfill during these sampling events and, for this reason, it may be impacted by releases from the unit. The baseline sampling data show elevated levels of some Appendix III constituents (chloride, fluoride, sulfate, total dissolved solids), as well as Appendix IV constituents (antimony, arsenic, beryllium, chromium, cobalt, lead, mercury, molybdenum, selenium, thallium) at MW-30, compared to levels in wells identified as downgradient wells. EPA is proposing to determine that MW-30 does not meet the requirements in 40 C.F.R. § 257.91(a)(1) to characterize background groundwater quality in an upgradient well that has not been affected by a CCR unit.

Additionally, a hydrogeologic cross-section provided in the Demonstration<sup>10</sup> indicates that MW-1612 may be installed through landfill contents and screened below the landfill, which means that samples from this well may be contaminated by leaks from the landfill. This is supported by the location of this well depicted in Figures 6 through 9 in the Demonstration, which appears to be within the boundary of the landfill. The baseline sampling data show elevated levels of some Appendix III constituents (chloride, fluoride and total dissolved solids), as well as Appendix IV constituents (antimony, arsenic, beryllium, chromium, and molybdenum) at MW-1612 as compared to downgradient wells. Therefore, EPA is proposing to determine that MW-1612 does not meet the requirements in 40 C.F.R. § 257.91(a)(1) to characterize background groundwater in a well that has not been affected by leakage of a CCR unit.

The BAP has four background wells (MW-1601A, MW-1602, MW-1603, MW-1608).<sup>11</sup> None of them are immediately upgradient of the BAP. MW-1601A and MW-1602 are immediately upgradient of the settling ponds east of the BAP, which are not regulated by the CCR regulations. However, at least one potentiometric map depicts groundwater flow from both

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<sup>10</sup> Demonstration, PDF pp. 483-484

<sup>11</sup> *Potentiometric Surface Map – Uppermost Aquifer June 2019*, PDF pp. 27-30 in the Demonstration

of those wells to the BAP after it passes under the settling ponds, which indicates they are upgradient wells. MW-1603 and MW-1608 are depicted as sidegradient wells; these wells are not downgradient of the BAP, but they are not upgradient either, because groundwater in these wells does not appear to flow to the BAP.

If a well that is not upgradient of a CCR unit is used to characterize background groundwater quality, that well must “provide an indication of background groundwater quality that is as representative or more representative than that provided by the upgradient wells.” 40 C.F.R. § 257.91(a)(1)(ii). APCO has not demonstrated that MW-1603 and MW-1608 meet this requirement. The spatial variability reported among the four wells indicates the sidegradient wells do not meet the requirements to be used as background wells; the spatial variability reported demonstrates that the quality of the groundwater in the sidegradient wells is statistically different than in the upgradient wells. EPA is consequently proposing to determine that inclusion of data from these sidegradient wells is not appropriate to characterize background levels of constituents at the BAP.

In order to address this noncompliance, EPA is proposing that APCO must develop plans for revised groundwater monitoring systems at both the BAP and the Mountaineer Landfill. In the case of the BAP, EPA is not proposing that additional wells would necessarily be needed. However, at the Mountaineer Landfill, one or more new background wells would be necessary. Final decisions regarding placement of monitoring wells must be based on adequate characterization of groundwater flow direction and rate across the unit and in the area immediately surrounding the unit.

The time needed to install new wells and collect eight baseline samples to characterize background levels for statistical comparisons will further delay compliance with the regulations.



To mitigate these delays, the proposed conditions require APCO to immediately begin assessment monitoring at the Mountaineer Landfill, rather than detection monitoring, after the eight baseline samples are collected from new wells.

*(d) Improper placement of downgradient wells*

There are five downgradient wells installed at the Mountaineer Landfill in three locations (MW-26/MW-27, MW-1611, and MW-38/MW-39). Four of these wells (MW-26/27 and MW-38/39) are not located at the waste boundary, as required by 40 C.F.R. § 257.91(a)(2).

Additionally, it appears that significant portions of the downgradient boundary of the landfill are unmonitored. Figures 6 through 9 in the Demonstration show the direction of groundwater flow generally to the east-northeast. No monitoring wells exist along the east-northeastern boundary of the unit to the south of the Stackout Pad depicted in these figures, even though flow arrows indicate this is a downgradient boundary. Approximately 1500 feet of this boundary appear to be unmonitored. Therefore, EPA is proposing to determine that the groundwater monitoring system fails to meet the requirements in 40 C.F.R. § 257.91(a)(2) to accurately represent the groundwater passing the downgradient waste boundary and to monitor all potential contaminant pathways.

In order to address this noncompliance, APCO must develop plans for revised groundwater monitoring systems at all downgradient boundaries of the Mountaineer Landfill, with appropriate spacing so that all potential contaminant pathways are monitored. The number of wells and spacing must be determined based on criteria in 40 C.F.R. § 257.91(b)(1) and (b)(2), which include groundwater flow rate and direction, taking into account seasonal or temporal fluctuations. Final decisions regarding placement of monitoring wells must be based on adequate

characterization of groundwater flow direction and rate across the unit and in the area immediately surrounding the unit.

(e) *APCO Improperly Excluded Data from the Required Statistical Analyses*

APCO inappropriately excluded data points because they were identified as statistical outliers at both the BAP and the Mountaineer Landfill, without identifying any sampling, analytical or data recording errors that would indicate the excluded data did not represent the quality of groundwater sampled, and without providing for replacement of those data points. EPA is proposing to determine this approach fails to meet requirements in 40 C.F.R. §§ 257.93(h), 257.94(c), and 257.95(g).

A common assumption in statistical tests is that the data sets being analyzed have no outliers. An outlier is a value that is inconsistent with the distribution of the other values in a data set. Identification of one or more statistical outliers does not indicate *why* those data points are inconsistent with the distribution of the data set. Changes in groundwater quality monitored at a well (i.e., outliers) can occur for multiple reasons, including sampling or analytical errors; a contaminant release; or true, but extreme, background groundwater quality values.<sup>12</sup> Therefore, rejecting an outlier without identifying a sampling error is not scientifically valid when analyzing data to characterize groundwater quality in a downgradient compliance well. This is especially true under the CCR regulations, where the purpose of detection and assessment monitoring is to determine whether a CCR unit is leaking by identifying statistical outliers in the groundwater data (either a statistically significant increase (SSI) or statistically significant level (SSL)) at a downgradient compliance well. EPA guidance does not recommend that outliers be removed *solely* on a statistical basis. Analysis for outliers can identify data points that should be reviewed

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<sup>12</sup> *Unified Guidance*, p. 6-34

more carefully for quality assurance, but generally a rationale other than mere statistical inconsistency needs to be identified to remove suspected outlier values (usually limited to data collected for the purpose of characterizing background groundwater quality).<sup>13</sup>

This means that if a statistical outlier is identified, review of information about how the sample was obtained and analyzed (e.g., field notes, sampling records, analytical laboratory report and quality control procedures) is needed to see if the data point could reflect an error in sampling, laboratory analysis, or data recording. However, if no errors are identified in those procedures, there is no evidence the higher concentrations measured in the sample are not evidence of a release of contaminants from the unit, and therefore there is no basis to eliminate the outlier data point from statistical analyses that are conducted in order to identify an SSI or SSL.

The CCR regulations contain numerous requirements designed to ensure that groundwater samples obtained and analyzed at CCR units for compliance purposes are representative of groundwater quality, including requirements for well design and construction, monitoring system design, and sampling procedures. 40 C.F.R. §§ 257.91, 257.93. Unless these requirements have not been met, APCO must consider all downgradient groundwater data from the monitoring programs required by 40 C.F.R. §§ 257.90 through 257.95, and a data point cannot be rejected simply on the basis that it is a statistical outlier. Rejection of a downgradient data point needs to be justified based on information that illustrates why the data point is not representative of groundwater quality, rather than simply statistical analysis.

The January 2018 Statistical Analysis Summary Report for the BAP<sup>14</sup> identified 12 sampling results obtained from downgradient compliance wells as potential outliers. APCO

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<sup>13</sup> *Unified Guidance*, p. 12-1

<sup>14</sup> PDF pp. 2-2, 2-3 in the Demonstration

removed nine of those sampling data points from the data set based solely on this statistical evaluation, even though there were no sampling, laboratory analysis, or other errors identified that would indicate the data were not representative of groundwater quality.

Sampling Date	Monitoring Well	Constituent Value Removed from Analysis
September 26, 2016	MW-1604S	molybdenum, combined radium
December 21, 2016	MW-1607S	arsenic, barium, mercury, thallium
May 16, 2017	MW-1606S, MW-1607S, MW-1607D,	pH

Detected arsenic, barium, mercury, and thallium concentrations for the December 21, 2016, sample at compliance well MW-1607S were removed from the data set as outliers, because “[t]he identification of multiple outliers for one sampling *[sic]* indicates possible sampling error...”<sup>15</sup> Given the quality control procedures in place and the fact that a review of the sampling report didn’t identify any potential sampling, laboratory or data recording errors, a more likely explanation for elevated levels of multiple Appendix IV constituents at a downgradient well is that a release from the unit has occurred.

Additionally, all outliers removed from analysis were identified in downgradient compliance wells rather than upgradient background wells. Removal of elevated data (i.e., high detections) that are outliers in upgradient wells may be more protective (because it ultimately decreases background levels, against which downgradient well data will be compared to determine whether there has been a statistically significant increase or level of a constituent.)

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<sup>15</sup> January 15, 2018 Statistical Analysis Summary Report for the BAP, p. 2-3.

However, removal of elevated data points from downgradient compliance wells may mask releases. APCO’s removal of these values from the data set means the data were never analyzed statistically to evaluate the possibility of releases, as required. 40 C.F.R. §§ 257.95(g), 257.93(h).

At the Mountaineer Landfill, APCO identified the following data points as statistical outliers and removed them from the statistical analysis:<sup>16</sup>

Sampling Date	Monitoring Well	Constituent Value Removed from Analysis
September 27, 2016	MW-27	arsenic, barium, cadmium, calcium, selenium
March 28, 2017	MW-26	Antimony
September 26, 2016	MW-39	Arsenic
May 2017	MW-26, MW-27, MW-1611	pH

EPA is proposing to determine that APCO inappropriately eliminated these monitoring data from statistical analysis based solely on its designation of the data as statistical outliers in the Statistical Analysis Summary Report. Section 2.3 of the January 15, 2018, Statistical Analysis Summary Report for the BAP states, “The laboratory and field data were reviewed prior to statistical analysis, with no QA/QC issues identified that impacted data usability. A review of outliers identified fifteen potential outliers, with ten values removed from the dataset without replacement.”

APCO justified removal of five of the data points from MW-27 in September 2016 based on high turbidity in the sample and the fact that multiple constituents in one sample had elevated concentrations. High turbidity can sometimes cause quality issues in laboratory analysis of groundwater samples; this would typically be discussed in an analytical laboratory report. However, these reports were not provided in the Annual GWMCA Reports and EPA cannot review them. Nor did APCO provide any explanation of why turbidity would specifically affect

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<sup>16</sup> Table 2 in Appendix 2 of the Annual GWMCA Report for the Mountaineer Landfill, January 2019.

those constituents and no others. Additionally, the fact that elevated concentrations of multiple constituents were detected in a sample is not a basis to suspect the results in the absence of identified sampling or analytical errors, as discussed above for the BAP. Given the quality control procedures in place and the fact that APCO didn't identify any potential sampling, laboratory or data recording errors, a more likely explanation for elevated levels of multiple constituents in the same sample from a downgradient well is that a release from the unit has occurred.

Of the other five sampling data points removed from the data set, APCO provided no basis for removing two of them (antimony in MW-26 and arsenic in MW-39) other than the statistical outlier test. The remaining three sampling data points removed were all pH values; pH is generally measured with an instrument in the field rather than in a laboratory. APCO justified their removal based on the fact that they were all sampled sequentially with the same instrument, which would indicate an instrument error. However, the pH sample from MW-1611 was taken on May 16, 2017, and the pH samples from MW-26 and MW-27 were taken on May 17, 2017. APCO provides no explanation why an instrumentation issue would not invalidate the other pH sample taken on May 17, 2017, from MW-30. APCO provides no information about the frequency of calibration required for a pH meter or what the fields notes from the sampling event indicate about whether those procedures were followed.

In sum, APCO fails to provide an adequate justification for removal of the data identified as statistical outliers at the BAP or the Mountaineer Landfill. EPA is proposing that all groundwater sampling data that are obtained in accordance with the regulations and appropriate sampling and analysis procedures must be included in the statistical analyses, in the absence of identified sampling, analytical or transcription errors.

In order to address this noncompliance, EPA is proposing that APCO amend past statistical analyses to include outliers that were removed. These revised analyses must be included in the respective, revised Annual GWMCA Reports which contained the original statistical analyses.

*(f) Intrawell Data Comparisons were Inappropriate*

The use of intrawell data comparisons at both the BAP and the Mountaineer Landfill does not meet the requirement to establish background groundwater quality in an upgradient well unless the criteria in 40 C.F.R. § 257.91(a)(1)(i) or (ii) are met. APCO does not meet this requirement for two reasons. First, the premise of the intrawell approach is that interwell comparisons are not reliable; yet APCO relies on interwell comparisons to demonstrate that baseline detection monitoring data obtained from downgradient wells in 2016-2017 were not impacted by the units, and therefore may be used to establish the intrawell background levels. Second, the interwell comparison approach used does not demonstrate the 2016-2017 downgradient data were not impacted by the units.

Intrawell comparisons are not simply a statistical method; in the CCR regulations, they are an approach to background characterization. Intrawell data comparisons use samples taken at different times from the same well to characterize both background groundwater quality and downgradient compliance groundwater quality. This means downgradient compliance wells also serve as background wells. Alternatively, interwell data comparisons use samples taken from different wells—upgradient or sidegradient wells characterize background groundwater quality and downgradient wells characterize downgradient groundwater quality.

The CCR regulations do not mention interwell or intrawell comparisons specifically; instead, they establish requirements for characterizing background. Background groundwater

quality is to be established in an upgradient well, unless a groundwater flow gradient does not exist, or it can be shown that groundwater samples from a well that is not upgradient of the CCR unit would characterize background groundwater quality as accurately or more accurately than samples from an upgradient well. 40 C.F.R. § 257.91(a). This indicates a strong preference for interwell comparison, which would necessarily be used when background is established in any well other than a downgradient compliance well (i.e., an upgradient or side gradient well).

However, the CCR regulations allow background to be established in a well that is not upgradient of the unit (e.g., in a downgradient compliance well) if the criteria in 40 C.F.R. § 257.91(a)(1)(i) and (ii) are met. It must be demonstrated that the data from the non-upgradient well can characterize background groundwater quality as accurately or more accurately than data from an upgradient well. It also must be demonstrated that the data were gathered when the well was known to be uncontaminated by the CCR unit.<sup>17</sup> This generally means that background data used in intrawell comparisons must be obtained prior to placement of CCR in the unit.

For both units, APCO explains interwell comparisons would not be appropriate due to spatial variability in some Appendix III constituent concentrations in upgradient wells. However, the reports do not contain any discussion of the spatial variability or other options to address it.<sup>18</sup> As discussed above, inclusion of sidegradient wells as background wells at the BAP and impacts to background wells at the Mountaineer Landfill could have contributed to the observed spatial variability in background data. Potential causes of spatial variability at both units would be resolved in the revised plans and monitoring required by the conditions in this proposal.

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<sup>17</sup> See 40 C.F.R. § 257.91(a)(1) and “March 2009 Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities - Unified Guidance” (“Unified Guidance”). p. 17-22.

<sup>18</sup> “*Statistical Analysis Summary, Bottom Ash Pond*,” Geosyntec Consultants, January 15, 2018, p. 2-3 and *Statistical Analysis Summary, Bottom Ash Pond*,” Geosyntec Consultants, January 15, 2018, p. 2-3.



The Demonstration states that groundwater data were evaluated using intrawell comparisons at the BAP for pH data, and at the Mountaineer Landfill for boron, chloride, sulfate and total dissolved solids. Intrawell background levels were established using the initial eight baseline samples obtained during 2016-2017 from downgradient compliance wells.<sup>19</sup> The BAP was constructed between 1978 and 1980<sup>20</sup> and the Mountaineer Landfill began operation in 1978,<sup>21</sup> therefore, both units were operating for decades prior to collection of those samples. Samples from downgradient wells in 2016-2017 are not known to be uncontaminated by the CCR units.

APCO attempted to justify reliance on intrawell comparisons by demonstrating, through the use of an interwell comparison, that the downgradient wells have not been impacted by the BAP. APCO compared the concentrations detected in both downgradient and upgradient wells in the 2016-2017 baseline data, and contended that, if the downgradient wells did not have higher concentrations of Appendix III constituents than the upgradient wells, the 2016-2017 downgradient well data could be used as background data in intrawell comparisons. However, this is inconsistent with their claim that interwell comparisons are invalid due to spatial variability among upgradient wells. There is no explanation why spatial variability in background data would not equally invalidate both the interwell comparisons to support an intrawell monitoring approach, and the interwell comparisons to determine SSIs or SSLs.

Second, the statistical approach used to determine whether downgradient wells were impacted by the units failed to meet requirements in 40 C.F.R. § 257.93. Using the 2016-2017

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<sup>19</sup> "Statistical Analysis Summary, Bottom Ash Pond," Geosyntec Consultants, January 8, 2019, PDF p. 991, "Memorandum: Evaluation of Detection Monitoring Data at Mountaineer Plant's Landfill." Geosyntec Consultants, February 27, 2019, Table 1, PDF p.1333.

<sup>20</sup> "History of Construction, BAP" American Electric Power Service Corporation, October 2016, PDF p. 28

<sup>21</sup> "Little Broad Run Landfill-CCR Location Restriction Evaluation," October 18, 2016, section 2.2.1

baseline data for each Appendix III constituent, an upper tolerance limit (UTL) was calculated using data from upgradient wells, and lower confidence levels (LCLs) were calculated for each constituent in each downgradient well. These LCLs were compared to the UTL for each Appendix III constituent “to determine whether the estimated averages in downgradient wells are higher than observed levels upgradient of the facility.”<sup>22</sup> This is not a valid statistical approach in the CCR regulations.

40 C.F.R. § 257.93(f) allows a choice of one statistical method to evaluate groundwater data for each constituent in each well; combining methods is not permitted. First, a tolerance interval method involves comparison of *individual* compliance data points to a calculated UTL. “Once the limit is constructed on background, each compliance point observation (perhaps from several different wells) is compared to the upper tolerance limit....”<sup>23</sup> Second, a confidence level approach involves comparison of the LCL to a fixed numerical value, such as a regulatory limit.<sup>24</sup> Each of these methods is different than comparison of a calculated LCL to a UTL, which is less likely to detect elevated constituent levels in downgradient wells.

EPA is proposing to determine that APCO has not demonstrated that comparing a calculated LCL to a calculated background UTL meets the requirement in 40 C.F.R. § 257.93(f) to select a statistical method for each constituent at each well, or that it meets the performance standards for statistical methods in 40 C.F.R. § 257.93(g).

Additionally, APCO’s own analysis shows SSIs in compliance wells in the first intrawell comparisons conducted at the BAP in January 2018. This is additional evidence that the

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<sup>22</sup> “Statistical Analysis Summary, Bottom Ash Pond,” Geosyntec Consultants, January 15, 2018, p.7

<sup>23</sup> *Unified Guidance* p. 17-15

<sup>24</sup> *Unified Guidance*, p. 21-1.

approach of LCL comparison to the calculated background UTL was flawed and that downgradient wells are impacted by the unit.

EPA is proposing to determine that APCO has failed to demonstrate that the downgradient compliance well data obtained in 2016-2017 baseline sampling more accurately characterize background groundwater quality than upgradient data, as required by 40 C.F.R. § 257.91(a)(1)(ii). Therefore, intrawell comparisons are inappropriate for the BAP and the Mountaineer Landfill.

In order to address this noncompliance, EPA is proposing that APCO amend past statistical analyses to include outliers that were removed. These revised analyses should also be amended to utilize interwell comparisons; any spatial variability in the background data should be resolved through other means, such as reviewing the placement of the upgradient background wells to identify sources of the spatial variability and verifying that all background data used in the analysis accurately characterize groundwater quality upgradient of the units. These revised analyses should be included in the revisions to the Annual GWMCA Reports required by the conditions.

## 2. *Corrective Action Compliance*

When groundwater assessment monitoring shows SSLs of any constituent and an alternative source is not identified within 90 days, a facility must undertake several corrective action steps, including conducting an Assessment of Corrective Measures (ACM), holding a public meeting, and selecting a remedy to address the release. 40 CFR §§ 257.96 through 98. Lithium was detected at an SSL in September 2018 at the BAP at monitoring wells MW-1605S, MW-1605D, MW1606S, MW-1606D, MW1607S and MW-1607D. APCO is therefore subject to corrective action requirements at the BAP. EPA has reviewed the December 22, 2021 Remedy

Selection Report, as well as the ACM included as Appendix F to the Demonstration, which is a revised ACM dated November 30, 2020.

EPA is proposing to determine that APCO has failed to comply with several corrective action requirements. First, APCO failed to estimate the mass of the release and to collect site-specific data needed to characterize site conditions as required by 40 C.F.R. § 257.95(g)(1)(ii). Second, APCO failed to provide sufficient site characterization to support statements made in the ACM and Remedy Selection Report about the potential impacts of historic ash disposal from the Sporn Plant or future construction of the East Settling Pond on the selected remedy. Third, APCO did not include in the Remedy Selection Report a schedule for completing remedial activities as required under 40 C.F.R. § 257.97(d). For these reasons, EPA is proposing to conclude that APCO is not in compliance with Corrective Action requirements in 40 C.F.R. §§ 257.96 through 98.

*(a) Failure to Estimate Mass and Concentrations of Release*

40 C.F.R. § 257.95(g)(1)(ii) requires that the investigation of a release include estimation of the mass of the release and collection of specific information about the levels at which Appendix IV constituents are present. Despite this requirement, APCO did not provide an estimate of the quantity of lithium (an Appendix IV constituent) released from the unit in the ACM. In order to address this noncompliance, EPA is proposing that APCO amend the Remedy Selection Report to provide this information and address any potential impacts on performance of the selected remedy in the design of the remedy, including estimation of the mass of lithium released as well as information about the levels at which it is present in the release.

*(b) Insufficient Characterization of Site Conditions including Past Ash Disposal and Future Construction*

The ACM states that the ability of control measures to accomplish remedial objectives may be limited, due to “...other potential sources near the Mountaineer BAP complex (e.g., the Sporn Plant former ash ponds).”<sup>25</sup> The Sporn Plant former ash ponds are depicted as being located to the northeast of the Mountaineer BAP. Due to the influence of production wells, groundwater flow seems to be at least partially from the Sporn Plant former ash ponds toward the production wells. However, no wells have been installed downgradient of the Sporn Plant former ash ponds and no groundwater elevation or quality data have been collected near the Sporn Plant former ash ponds to allow characterization of groundwater flow direction in that area or to estimate any potential contributions to downgradient lithium levels. The CCR regulations require characterization of site conditions that may affect the remedy ultimately selected. 40 C.F.R. § 257.95(g)(1). If there are releases from the Sporn Plant former ash ponds that would limit the effectiveness of the corrective measures, they have not been characterized in the Demonstration or the ACM. Without this information, the site characterization is incomplete.

Additionally, the Demonstration states that APCO plans to build a new East Settling Pond in the area where the BAP is currently located, after CCR and water are removed from the BAP. Because the BAP is subject to corrective action requirements, remedial activities may be required in this location until groundwater protection standards are achieved at all points beyond the unit boundary and corrective action is complete. There is no discussion in the ACM or the Remedy Selection Report of how construction or operation of the East Settling Pond could impact the effectiveness of the selected alternative; this important aspect of site characterization is missing.

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<sup>25</sup> BAP Revised Assessment of Corrective Measures November 2020, or Appendix F of the Demonstration, p. 20 of the ACM (pdf page 1421 of the Demonstration)

In order to address this noncompliance, EPA is proposing that APCO amend the Remedy Selection Report to include discussion of how any potential impacts of construction of the new East Settling Pond or contamination from the Sporn Plant former ash ponds will be addressed in the design of the selected remedy. The design of the remedy must consider all available data about these ponds and planned construction activities and provide analysis to show how the remedy will meet all of the requirements in 40 C.F.R. § 257.97(b).

*(c) No Schedule for Remedy Implementation*

The Remedy Selection Report must specify, as part of the selected remedy, a schedule for implementing and completing remedial activities. 40 C.F.R. § 257.97(d). The schedule must describe the activities that will be conducted in order to complete corrective action in accordance with requirements of 40 C.F.R. § 257.98(c) and when they will be implemented and completed.

The section of the Remedy Selection Report that discusses the schedule of remedial activities is two paragraphs long.<sup>26</sup> Three activities are discussed, all related to closure of the BAP (i.e., receipt of bid documents, contractor selection and commencement of closure). Time frames for these three activities are described in terms of seasons and years and they do not include both start and completion dates for each of the activities. The discussion of closure activities is incomplete; it does not include any specific activities (e.g., date of last receipt of waste, commencement of dewatering, completion of dewatering, commencement of removal of CCR, any staging activities that may occur) or the time frames in which they will commence or be completed. There is no discussion of remedial activities to implement the groundwater containment and treatment portion of the remedy, except to say that operation of the containment system will begin immediately. This statement is inadequate for multiple reasons.

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<sup>26</sup> "Remedy Selection Report AEP Mountaineer Plant, Bottom Ash Ponds," Section 5, PDF p. 20

Design of the hydraulic containment system has not yet been completed. Although the production wells have been operating for many years at varied pumping rates, the use of these wells (and additional wells, if needed to maintain adequate capture of the release) requires engineering design. The Remedy Selection Report says that the hydraulic control system will use the five existing production wells, “and will be designed to maintain hydraulic capture of contaminated groundwater at the Site.”<sup>27</sup> Modeling was conducted to estimate plume movement under different scenarios, in order to support remedy selection. However, there is no analysis in the Remedy Selection Report to support a determination of whether the five existing wells are sufficient to maintain hydraulic control of the lithium plume, and what operational requirements (e.g., minimum pumping rates at each well) would be sufficient to maintain such hydraulic control under various operating scenarios (e.g., during pond closure, low river stage or rain events.)

In order to address this noncompliance, EPA is proposing that APCO amend the Remedy Selection Report to include a schedule of all remedial activities necessary to meet the requirements of 40 C.F.R. §§ 257.97 and 98. This schedule must: 1) identify all remedial activities to implement the groundwater containment and treatment portion of the remedy as well as source control; 2) include dates planned to begin and complete each remedial activity needed to complete the selected remedy. Dates in this schedule must be specified in terms of specific months and years.

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<sup>27</sup> “Remedy Selection Report AEP Mountaineer Plant, Bottom Ash Ponds,” Executive Summary, PDF p. 4

#### **IV. EPA's Proposed Action**

##### *A. Proposed Conditional Approval*

On January 11, 2022, EPA proposed to conditionally approve the request submitted for Spurlock Power Station to extend the cease receipt of waste date for an unlined CCR surface impoundment. See “Conditional Approval of an Alternative Closure Deadline for H.L. Spurlock Power Station, Maysville, Kentucky” (Spurlock proposal) (Docket ID No. EPA-OLEM-HQ-2021-0595). EPA explained in that proposed action that the Agency was clarifying and revising its original interpretation of the regulations at 40 C.F.R. § 257.103(f)(3) to allow the Agency to issue conditional approvals in certain limited circumstances. EPA proposed to limit conditional approvals to situations where the actions necessary to address the noncompliance are straightforward and the facility will be able to take the necessary actions well before the extended deadline that it requested. EPA further described the situations where a conditional approval might be appropriate as those that involve relatively straightforward technical issues where the remedies for the noncompliance are easily identified and quickly implemented. In such cases, EPA noted that conditions can be readily developed to bring the facilities into compliance and allow EPA to evaluate whether the conditions are met based on appropriate documentation.

EPA then identified specific examples of situations in which the Agency anticipated that the characteristics necessary to support a conditional approval might (and might not) be present. Spurlock proposal pgs. 9-13. Specifically, EPA stated in the Spurlock proposal that the Agency did not anticipate issuing conditional approvals in cases where “the noncompliance involves more complicated technical issues where the specific actions necessary to come into compliance cannot be easily identified and/or cannot be remedied quickly.” Spurlock Proposal at pg. 13. EPA further stated that the necessary conditions to bring a facility into compliance are likely to



be more complicated and time-consuming where a facility is not in compliance with corrective action requirements or where a facility is out of compliance with several regulatory requirements. *Id.* EPA concluded by stating that “[i]n situations in which there is affirmative evidence of harm at the site, such as where a facility has delayed corrective action, EPA cannot grant additional time for the impoundment to operate without some evidence that these risks are mitigated,” and that the Agency would evaluate each demonstration on a case-by-case basis to determine whether a conditional approval is warranted based on the facts surrounding each facility. *Id.* EPA is incorporating the justification for granting conditional approvals set forth in the proposed Spurlock decision. Based on a case-specific review, EPA is proposing to find that Mountaineer meets the criteria discussed in Spurlock for a conditional approval even though its situation has some characteristics that EPA warned in Spurlock might make it difficult to meet the criteria for a conditional approval (e.g. corrective action issues).

For Mountaineer, EPA conducted a thorough review of its Demonstration and additional information from APCO. Based on that review, we developed conditions that are straightforward, and we believe that compliance with the proposed conditions can be evaluated based on the documentation we propose to require. In addition, the conditions we developed will require compliance in a short enough time period after the final decision that the conditional approval would not authorize a sustained period of continued operation of a deficient CCR surface impoundment without evidence that the risks are being adequately mitigated. Finally, EPA recognizes that there appears to have been a delay in implementing required corrective actions at Mountaineer and the Agency stated in Spurlock that it could not grant additional time for an impoundment to operate without some evidence that risks associated with such noncompliance are mitigated. We believe that Mountaineer’s compliance with the conditions set

forth below will mitigate the harm caused by the delay in corrective action by significantly speeding up the implementation of adequate corrective action measures. EPA also believes that the contamination is unlikely to worsen during the period of extension by the continued use of the BAP surface impoundment through January 2023.

For all these reasons, EPA is proposing to conditionally approve an extension of the cease receipt of waste date for Mountaineer to use the BAP until January 9, 2023, provided that the following conditions are met:

1. Within 30 days of the date of EPA's final decision, Mountaineer shall post on its public CCR website a statement committing to meet all of the conditions to qualify for the conditional approval.
2. No later than 30 days after the date of EPA's final decision, APCO shall amend all Annual GWMCA Reports to include all the data obtained under 40 C.F.R. §§ 257.90 through 257.98. This includes, but is not limited to:
  - a. groundwater quality data, including laboratory analysis reports and statistical analyses;
  - b. groundwater elevation measurements and calculations of groundwater flow rate and direction; and
  - c. any other environmental data obtained under 40 C.F.R. §§ 257.90 through 257.98, such as environmental samples to characterize site conditions to assess corrective measures, including sampling records and laboratory analytical reports.
3. No later than 60 days after the date of EPA's final decision, APCO shall submit to EPA revised plans for the groundwater monitoring systems for the BAP and the Mountaineer Landfill that meet the performance standard required by 40 C.F.R. § 257.91. This

condition will not be met until EPA approves the revised plans. The plans must ensure the systems address the following items:

- a. Characterization of groundwater flow direction around the CCR units, taking into account seasonal or temporal fluctuations and any effects of extraction wells, supported by a sufficient number of groundwater elevation measurements, appropriately located and spaced, to support a determination that the proposed groundwater monitoring systems meet the criteria in 40 C.F.R. § 257.91(a) and (b);
- b. Identification of wells that characterize background groundwater quality and their locations; if these are not upgradient wells, APCO shall provide information about samples used to characterize background levels to demonstrate that they meet the performance standard in 40 C.F.R. § 257.91(a)(1)(ii), including when the samples were obtained, operational status of the CCR unit at that time and the sampling and analytical results and procedures used;
- c. Identification of wells at the downgradient waste boundary of the CCR units, with rationale explaining why these wells are sufficient in number and spacing to monitor all potential contaminant pathways, consistent with the performance standard in 40 C.F.R. § 257.91(a)(2) and based on criteria in 40 C.F.R. § 257.91(b); and
- d. P.E. certifications that include all information the P.E. relied upon in making the certification, and which clearly document how the P.E. determined the revised groundwater monitoring systems meet the performance standards in 40 C.F.R. § 257.91.

4. No later than 60 days after the date of EPA's approval of the revised plan for a groundwater monitoring system at a CCR unit, APCO shall complete installation of any new wells at that unit.
5. No later than 60 days after the date of EPA's final decision, APCO shall submit revised sampling and analysis plans for the BAP and the Mountaineer Landfill that meet the standards in 40 C.F.R. § 257.93. The sampling and analysis plan for each CCR unit must describe sampling and analytical procedures, including field sampling and calibration procedures and statistical approaches, to be used to collect and analyze groundwater samples. This condition will not be met until EPA approves the revised plans. The plans must address the following items:
  - a. All information required by 40 C.F.R. § 257.93(a);
  - b. Specific procedures to be followed to comply with requirements in 40 C.F.R. § 257.93(b) through (e), (g) and (h);
  - c. Information about specific statistical procedures to be used (e.g., statistical method selected(s), performance criteria applied) that documents how these procedures comply with 40 C.F.R. §§ 257.93(f) and (g);
  - d. A schedule to conduct groundwater sampling, which specifies the month that annual assessment monitoring required by 40 C.F.R. § 257.95(b) and semi-annual assessment monitoring required by 40 C.F.R. § 257.95(b) will occur.
    - i. For the Mountaineer Landfill, the schedule shall include an accelerated sampling schedule to obtain a minimum of eight independent baseline groundwater samples as soon as feasible from each new well, in accordance with 40 C.F.R. § 257.94(b), and to conduct the first annual

assessment monitoring event as soon after that as independent samples can be obtained.

- e. A P.E. certification that the statistical method(s) selected are appropriate for evaluating groundwater monitoring data at the BAP and Mountaineer Landfill, in accordance with 40 C.F.R. § 257.93(f)(6) and includes a narrative description of how the statistical method(s) selected meet those requirements.
  - f. Annual assessment groundwater monitoring shall occur during the month of April each year.
6. No later than 60 days after the date of EPA's approval of the sampling and analysis plan for a CCR unit, or no later than 30 days after installation of any new wells at that unit, whichever is later, APCO must begin groundwater sampling described in the approved plan.
7. No later than 60 days after EPA's approval of the sampling and analysis plan for a CCR unit, APCO must conduct statistical analyses that meet the performance standards in 40 C.F.R. § 257.93(g) on all monitoring data obtained prior to the approval, including the baseline detection monitoring data obtained from September 2016 through June 2017.
- a. Using interwell comparisons, these data must be evaluated for SSIs above background of constituents in Appendix III to 40 C.F.R. 257 Subpart D;
  - b. Groundwater Protection Standards must be established for constituents in Appendix IV to 40 C.F.R. 257 Subpart D;
  - c. Using interwell comparisons, these data must be evaluated for SSLs above the groundwater standard for each constituent in Appendix IV to 40 C.F.R. 257 Subpart D;

- d. All properly obtained data must be included in the statistical analysis unless there is evidence that a sampling, analytical or data recording or transcription error has occurred, or it is an elevated statistical outlier detected in an upgradient background well; and
  - e. No later than 30 days after statistical analyses are completed, they must be included in an amended Annual GWMCA Report for the year in which the analyses were originally required.
8. No later than 90 days after the date of EPA's final decision, APCO shall revise the Remedy Selection Report for the BAP.
- a. The revised Remedy Selection Report shall provide the following site characterization information and explain how the design of the selected remedy will address this information to ensure the selected remedy will meet the requirements of 40 C.F.R. § 257.97(b).
    - i. Characterization of the release of each Appendix IV constituent with an SSL, including a plume map depicting the extent of the release of each constituent and the calculated mass of the release.
    - ii. Identification and analysis of all site conditions that could impact the effectiveness of the alternatives, such as migration of contaminants from the Sporn Plant former ash ponds and any potential impact from construction and operation of the new East and West Settling Ponds.
  - b. The revised Remedy Selection Report shall contain a schedule of remedial activities that identifies all tasks needed to implement the selected remedy. For each task, the dates of anticipated commencement and completion shall be

provided. The schedule shall require completion of all remedial activities within a reasonable time, considering the factors in 40 C.F.R. § 257.97(d).

9. If groundwater monitoring or statistical analyses conducted after EPA's final decision identify SSLs of additional Appendix IV constituents at the BAP, APCO must, within 90 days of completing an analysis that identifies an SSL, either complete an Alternate Source Demonstration providing substantive evidence that the SSL came from a source other than the BAP or initiate a revised ACM to assess alternatives to clean up all constituents with a detected SSL.

Proposed Procedures.

EPA does not intend that the addition of these conditions establish independently enforceable requirements. Rather, existing statutory and regulatory requirements remain enforceable in accordance with their terms. These added conditions must be met in order for APCO to obtain, and maintain, approval for an alternative deadline pursuant to 40 C.F.R. § 257.103(f)(1). This means that failure to meet the conditions would result in revocation of the conditional approval, but that failure would not itself be grounds for enforcement action. Instead, APCO may be subject to enforcement of the underlying noncompliance upon which the conditions were premised and APCO would be subject to enforcement for noncompliance if it continued to use the surface impoundment past the new deadline to cease receipt of waste, as well as for any other noncompliance either identified in the final decision or detected apart from this process.

EPA is further proposing that, if APCO fails to meet any of the conditions in the final decision, the conditional authorization will be automatically revoked and will convert to a denial. In such an event, EPA is proposing that APCO's deadline would revert to 135 days from the date

of EPA's final decision, which is the deadline that would have been established had EPA originally denied the extension request. See Section IV.B.2 of this document for further discussion of the basis for that deadline. In addition, if EPA notifies APCO that EPA has determined that a submission required under any of the conditions listed above does not meet the relevant performance standards, EPA is proposing that the conditional approval would automatically convert to a denial as of the date of the notification to APCO. In such case, the new deadline to cease receipt of waste would be 135 days from the date of the notification.

EPA is proposing that APCO post a notice on its public CCR website within 5 days of meeting each condition. EPA is not proposing to provide an opportunity for notice and comment or to otherwise establish any process to further adjudicate issues relating to APCO's compliance with the conditions. EPA may approve a submitted plan with or without comments or may deny the plan outright. In either case EPA does not intend to provide any opportunity for further consultation. EPA will notify APCO if the Agency determines that a condition has not been met, even if the Agency has not yet determined the form or timing of the notification. One option that EPA is considering would be to send a letter to APCO and post a notice on the Agency's website. EPA requests comment on whether these procedures would be appropriate, and on whether there are alternative mechanisms that would be more appropriate.

Although EPA is proposing a conditional approval, EPA is also taking comment on whether it should deny the extension request on the grounds that it fails to meet the requirements of 40 C.F.R. § 257.103(f)(1)(iv) based on the proposed findings of noncompliance identified in Section III above. EPA is doing so in case EPA determines that the regulations should not be interpreted to allow conditional approvals or EPA determines that circumstances make a conditional approval inappropriate in this case. Such circumstances might include: substantial



disagreement about the conditions that would be necessary to come into compliance, APCO's indication that it is not interested in a conditional approval, or the actions necessary to come into compliance would take longer than the amount of time that would be granted to continue operation of the unit. If EPA determines that a conditional approval is not appropriate under the circumstances, EPA will issue a denial as its final decision.

*B. Deadline to Cease Receipt of Waste.*

*1. Conditional Approval.*

EPA is proposing that APCO's deadline to cease receipt of waste will be January 9, 2023, for the BAP, provided that APCO meets all of the conditions described below. If APCO fails to meet all of the specified conditions, or ceases to comply with any of the conditions, then its conditional approval would convert to a denial. EPA is proposing that in such an event APCO's deadline to cease receipt of waste would be determined as set forth below for a denial.

*2. Denial.*

This section proposes the new deadline to cease receipt of waste in the event that EPA's final decision denies APCO's request for an extension or that EPA issues a conditional approval that converts to a denial.

EPA is proposing that APCO must cease receipt of waste within 135 days of the date of the Agency's final decision (i.e., the date on which the decision is signed). EPA is further proposing that, under certain circumstances described below, EPA could authorize additional time for APCO to continue to use the impoundments to the extent necessary to address demonstrated grid reliability issues, if any, provided that APCO submits a planned outage request to PJM Interconnection LLC (PJM) within 15 days of the date of EPA's final decision

and APCO provides the PJM determination disapproving the planned outage and the formal reliability assessment upon which it is based to EPA within 10 days of receiving them.<sup>28</sup>

The regulations state that, when EPA denies an application for an extension, the final decision will include the facility's deadline to cease receipt of waste, but the regulations do not provide direction on what the new deadline should be. 40 C.F.R. § 257.103(f)(3). EPA is proposing to set a new deadline for APCO to cease receipt of waste that would be 135 days from the date of the final decision on APCO's Demonstration. This would provide APCO with the same amount of time that would have been available to the facility had EPA issued a denial immediately upon receipt of the Demonstration (i.e., from November 30, 2020, when EPA received the submission, to April 11, 2021, the regulatory deadline to cease receipt of waste). This amount of time thus puts the facility in the same place it would have been had EPA immediately acted on the Demonstration and therefore adequately accounts for any equitable reliance interest APCO may have had after submitting its Demonstration. Moreover, as discussed further below, this date should provide APCO with adequate time to coordinate with and obtain any necessary approvals from PJM for any outage of the coal-fired boiler that may be necessary. This proposed deadline for APCO to cease receipt of waste is the same as the proposed effective date of EPA's final decision (*see* Unit VI below).

Given that this proposed deadline (135 days from the date of EPA's final decision) is sooner than the deadline requested by APCO, EPA understands that it is likely that the coal-fired boilers associated with the CCR units will temporarily need to stop producing waste (and

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<sup>28</sup> We are proposing the same process for evaluating electric reliability impacts as set forth in the proposed Part A decisions issued on January 11, 2022. We received comments on the process for determining electric reliability impacts. We continue to evaluate those comments and will respond to them when we issue a final decision on one or more of the January 11, 2022, proposed determinations. This proposed action is not a response to those comments and no final decision has been made to date.

therefore power) until either construction of the alternative disposal capacities is completed and commercially operational or some other arrangements are made to manage its CCR and/or non-CCR wastestreams. *See* discussion of adverse effects above in Unit III.B. In APCO’s Demonstration it noted that if the requested deadline were not granted, it “might” affect the reliability of the electricity grid. APCO provided no information or evidence to support the statement.

This facility operates as part of the PJM system, which is the largest competitive market for electric power in the United States. PJM is an RTO that is part of the Eastern Interconnection grid. Comments submitted by PJM on the first batch of Part A decisions proposed on January 25, 2022, indicate that whether a particular outage will actually have an adverse, localized impact on electric reliability or otherwise adversely affect the reliability of the grid must be determined based on the fact-specific circumstances associated with each proposed outage.

EPA does not currently have an evaluation from Mountaineer’s transmission authority (i.e. PJM) supporting APCO’ assertions that the temporary outage of the coal-fired boiler at Mountaineer would trigger local reliability violations or would otherwise adversely affect resource adequacy requirements.<sup>29</sup> In addition, especially with the advance notice, there are a wide array of tools available to utilities, system operators, and State and Federal regulators to address situations where the outage of a generating unit might otherwise affect local electric reliability conditions. For example, PJM noted that the impact of any specific Planned Outage could potentially be managed by strategically scheduling, staggering, or structuring the outage (full outage versus partial, for example) to avoid any reliability concerns. They further noted that such determinations will need to be based on the fact-specific circumstances of the outage in

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<sup>29</sup> A local reliability violation might occur, for example, if transmission line constraints limit the amount of power that can get to an area from plants outside that area.

question, other Planned Outages anticipated on the system, and the existing Generator Outage Reserve.

EPA is sensitive to the importance of maintaining enough electricity generating capacity to meet the region's energy needs, including meeting specific, localized issues. EPA understands that in some instances temporarily taking generating units (including coal-fired units) offline could have an adverse, localized impact on electric reliability (e.g., voltage support, local resource adequacy). If a generating asset were needed for local reliability requirements, the grid operator (e.g., PJM) might not approve a request for a planned outage. In such instances, the owners/operators of the generating unit could find themselves in the position of either operating in noncompliance with RCRA or halting operations and thereby potentially causing adverse reliability conditions.

EPA is obligated to ensure compliance with RCRA to protect human health and the environment. Where there is a conflict between timely compliance and electric reliability, EPA intends to carefully exercise its authorities to ensure compliance with RCRA while taking into account any genuine, demonstrated risks to grid reliability identified through the process established by PJM that governs owner/operator requests for planned outages and/or deactivation.<sup>30</sup>

Accordingly, EPA is proposing to rely on established processes and authorities used by PJM to determine whether a planned outage necessary to meet the new deadline would cause a demonstrated grid reliability issue. PJM is responsible for coordinating and approving requests for planned outages of generation and transmission facilities, as necessary, for the reliable

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<sup>30</sup> See, e.g., PJM Manual 10: Pre-Scheduling Operations, Revision: 39, Effective Date: November 19, 2020 (Section II), available at <https://www.pjm.com/~media/documents/manuals/m10.ashx>

operation of the PJM RTO.<sup>31</sup> In PJM, power plants are to submit a request at least 30 days in advance of a planned outage to allow PJM to evaluate whether the resource is needed to maintain grid reliability. PJM will grant the request unless it determines that the planned outage would adversely affect reliability.

If PJM approves a planned outage request, the outage may proceed and there would be no reason to expect that the outage would affect reliability. However, if PJM disapproves a planned outage, the procedure is for the PJM member to submit a new planned outage request for PJM to evaluate (with potential proposals to mitigate previously indicated reliability violations with the prior request). This process is repeated until the generating facility submits an acceptable request. The PJM member may also request PJM's assistance in scheduling a planned outage. PJM may rely on different bases in determining whether to deny a request for a planned outage. For example, a denial may be issued because of timing considerations taking into account previously approved planned outage requests, in which case the EPA would expect the plant owner to work with PJM to plan an outage schedule that can be approved by PJM and also satisfies the plant owner's RCRA obligations, without regard to any cost implications (e.g., in meeting any contractual obligations with third parties) that may result for the plant owner under a revised proposed outage schedule.

Alternatively, however, in some cases, PJM might deny a request should it determine that the planned outage could not occur without triggering operational reliability violations. In such cases, the system operator might determine that the generating unit would need to remain in operation until remedies are implemented. As set forth above, APCO has presented no evidence that such is the case with this facility.

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<sup>31</sup> See, PJM Manual 10: Pre-Scheduling Operations, Revision: 39, Effective Date: November 19, 2020 (Section II), available at <https://www.pjm.com/~media/documents/manuals/m10.ashx>.

For Mountaineer, EPA is proposing to rely on PJM's procedures for reviewing planned maintenance outage and similar requests. Accordingly, EPA is proposing that, if PJM approves APCO's planned outage request, EPA will not grant any further extension of the deadline to cease receipt of waste (i.e., the deadline would be 135 days from the date of EPA's final decision). If, however, PJM disapproves APCO's planned outage request based on a technical demonstration of operational reliability issues, EPA is proposing that, based on its review of that disapproval and its bases, EPA could grant a further extension (i.e., beyond 135 days from the date of EPA's final decision). EPA is further proposing that such a request could only be granted if it were supported by the results of the formal reliability assessment(s) conducted by PJM that established that the temporary outage of the boiler during the period needed to complete construction of alternative disposal capacity would have an adverse impact on reliability. In such a case EPA is proposing that, without additional notice and comment, it could authorize continued use of the impoundments for either the amount of time provided in an alternative schedule proposed by PJM, or the amount of time EPA determines is needed to complete construction of alternative disposal capacity based on its review of the Demonstration, whichever is shorter. EPA is further proposing that a disapproval from PJM without a finding of technical infeasibility for demonstrated reliability concerns would not support EPA's approval of an extension of the date to cease receipt of waste because any concern about outage schedules and their implications for plant economics could be resolved without an extension of RCRA compliance deadlines (e.g., through provision of replacement power and/or capacity; rearranging plant maintenance schedules; reconfiguration of equipment).

To obtain an extension, EPA is proposing that APCO must submit a request for an outage to PJM within 15 days of the date of EPA's final decision. To avoid the need for serial requests

and submissions to PJM, EPA is proposing to require APCO to contact PJM and request assistance in scheduling the planned outage so that APCO and PJM can determine the shortest period of time during an overall planned outage period in which the generating unit must be online to avoid a reliability violation. EPA expects that APCO and PJM will plan the outage(s) and return-to-service periods – and any other needed accommodations – in ways that minimize the period of actual plant operations.

Finally, to obtain an extension from EPA, APCO must submit a copy of the request to PJM and the PJM determination (including the formal reliability assessment) to EPA within 10 days of receiving the response from PJM. EPA would review the request and, without further notice and comment, issue a decision.

One hundred and thirty-five days should normally provide adequate time to obtain a decision from PJM. According to the PJM Manual 10 (at page 17), the normal process for obtaining approval for a planned outage is 30 days. 135 days should also provide sufficient time to accommodate multiple requests, if necessary, to obtain approval. However, EPA solicits comment on whether 135 days from the date of the final decision provides sufficient time to accommodate the normal process of obtaining approval for a planned outage.

## **V. Conclusion**

EPA is proposing to conditionally approve the extension request in the Demonstration submitted by AEP as agent for its affiliate, APCO, the owner and operator of the Mountaineer Plant. If EPA's final action is a denial, APCO must cease receiving waste within 135 days of EPA's final decision. If EPA determines that circumstances warrant a conditional approval, as described above, and APCO provides appropriate commitments in response to this proposal that it is interested in accepting a conditional approval, EPA is proposing to condition this approval

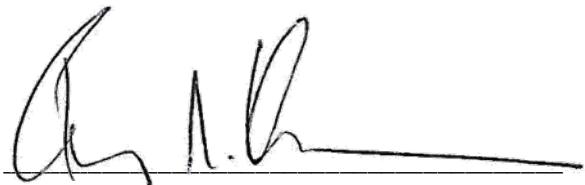
on APCO timely taking those actions specified in Section IV.A of this proposed decision. If finalized, a conditional approval would allow APCO to continue placing non-CCR wastestreams into the BAP until January 9, 2023. If at any time APCO fails to comply (or ceases compliance with) any of the conditions, the proposed conditional approval would terminate and revert to a denial. In such a case the deadline to receipt of waste would be as discussed in Section IV.B.2 above.

**VI. Effective Date for Denial**

EPA is proposing to establish an effective date for the final decision on APCO’s Demonstration of 135 days after the date of the final decision (i.e., the date that the final decision is signed). EPA is proposing to align the effective date with the new deadline that EPA is proposing to establish for APCO to cease receipt of waste. EPA is doing so for all of the reasons discussed as the basis for proposing to establish the new cease receipt of waste discussed in Section IV of this document.

07/12/2022

Date



Barry N. Breen  
Acting Assistant Administrator