Sheth, Gary

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Sent: Thursday, April 4, 2019 12:14 PM
To: Sheth, Gary; Minor, Dustin
Cc: Hagler, Tom; KMcGrath@hunton.com
Subject: FCPP NPDES Permit - Add'l ELG Conversion Information
Attachments: New NPDES FCPP ELG Information for EPA RIX (Rev'd 4-4-2019).docx

Hi Gary, Dusty,

As I mentioned earlier today, attached you'll find the updated project summary you requested. Please let me know if you have any questions about this or would like additional information.

Best,
Jeff

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NPDES Effluent Limitation Guideline Compliance Project Summary
APS, Four Corners Power Plant

APS's Four Corners Power Plant ("FCPP"), a steam-electric generating station located on the Navajo Nation, must comply with EPA's 2015 revisions to EPA's effluent limitation guidelines ("ELGs") for this source category. *See* 80 Fed. Reg. 67,837 (Nov. 3, 2015) ("2015 ELG Rule"). Among the revised standards finalized in the 2015 ELG rule, EPA established a new ELG for bottom-ash transport water ("BATW") that would impose a zero-liquid discharge. *See* 40 C.F.R. Sec 423.13(k)(1)(i). Compliance with a zero-liquid discharge standard for BATW at FCPP would require APS to undertake significant, capital intensive upgrades to the FCPP.

The 2015 ELG Rule required facilities to meet this standard "by a date determined by the permitting authority that is as soon as possible beginning November 1, 2018, but no later than December 31, 2023." 80 Fed. Reg. at 67,894; *see, e.g.*, 40 C.F.R. § 423.13(h)(1)(i) (concerning fly-ash transport water discharges). In 2017, however, EPA announced that it will be undertaking a rulemaking to reconsider this limit for BATW as well as the limit for flue gas desulfurization ("FGD") wastewater. *See* Letter from Scott Pruitt, U.S. EPA Administrator, Re: Petitions for Agency Reconsideration and Stay of Effluent Limitations Guidelines and Standards for the Steam Electric Power Generating Point Source Category (Aug. 11, 2017)). Because EPA intends to conduct a rulemaking to potentially revise the limits for FGD wastewater and BATW, on September 18, 2017, EPA issued a final rule postponing the near-term applicability date for FGD wastewater and BATW from November 1, 2018 to November 1, 2020 (the "Postponement Rule"). 82 Fed. Reg. 43,494 (Sept. 18, 2017). The purpose of the Postponement Rule is to authorize permit writers to select applicability dates that will avoid any expenditures to comply with the 2015 ELGs for FGD wastewater and BATW until EPA completes further rulemaking governing those wastestreams. *See* 82 Fed. Reg. at 43,497-98.

The timing for new rule addressing FGD wastewater and BATW is projected by the Agency to be completed by December 2019. *See* U.S. EPA, Fall 2018 Regulatory Agenda, Office of Information and Regulatory Affairs (https://www.reginfo.gov/public/do/eAgendaViewRule?pubId=201810&RIN=2040-AF77) (Last Accessed, Nov. 5, 2018). In addition, the original 2015 ELG revision for BATW discharges is still subject to on-going judicial review in the Fifth Circuit Court of Appeals. *See Southwestern Electric Power Co., et al. v. U.S. EPA*, No. 15-60821 (BATW claim stayed pending completion of new EPA rulemaking). As such, substantial uncertainty remains as to the actual discharge limit that EPA will ultimately impose for BATW.

Notwithstanding this uncertainty, our understanding is that EPA would like to take action in the near term to establish a compliance deadline for the FCPP concerning the revised ELG for BATW. Pursuant to the Postponement Rule, EPA shall designate compliance dates for the BATW ELG "as soon as possible beginning November 1, 2020, but no later than December 31, 2023." *See* 40 C.F.R. § 423.13(k)(1)(i); 82 Fed. Reg. 43,494, 43,496 (Sept. 18, 2017). 40 C.F.R. Section 423.11(t) defines how EPA shall determine when specifically after November 1, 2020, but before December 31, 2023, compliance dates need to be established for a given facility, such as the FCPP. Under § 423.11(t), EPA should consider the following factors in setting an "as soon as possible" compliance date for BATW:

1) Time to expeditiously plan (including to raise capital), design, procure, and install equipment to comply;
2) Changes being made or planned at the plant in response to other environmental regulations, including regulations that address the management and disposal of coal combustion residuals ("CCR"), as provided in 40 C.F.R. Part 257, Subpart D; and
3) "Other factors as appropriate"

To that end, the following is intended to provide information to EPA concerning: (1) the time necessary to plan, design, procure, and install equipment required for the FCPP to come into compliance with the BATW ELG; and (2) compliance challenges created by simultaneous efforts for FCPP to comply with EPA's regulations governing the management and disposal of CCR waste; and (3) "other factors" that are relevant, including the substantial uncertainty surrounding the 2015 ELG Rule and the need for integrated planning decisions regarding compliance with the 2015 ELG Rule and other environmental rules identified in § 423.11(t). *See* 82 Fed. Reg. at 43,498; *Coosa River Basin Initiative v. Dunn*, Docket Nos. 1825406 and 1826761, at 13, Ga. Office of State Admin. Hearings (Oct. 4, 2018) ("other factors" include "uncertainty regarding the 2015 ELG Rule").

At this time, APS anticipates implementing three separate, yet interrelated projects at the FCPP to address compliance with both the revised ELGs for BATW and requirements under EPA's CCR regulations. This is because the structure through which the FCPP BATW discharges flow, the so-called "Combined Waste Treatment Pond," is a regulated CCR management unit. A summary of these three projects follows:

Combined Waste Treatment Pond Closure – At this time, the Combined Waste Treatment Pond unit must cease receiving CCR and non-CCR wastestreams by October 31, 2020, and thereafter initiate closure procedures within 30 days, pursuant to 40 C.F.R. Sections 257.60(a) and 257.101(b)(1), as revised pursuant to 83 Fed. Reg. 36,435 (July 30, 2018).[1] Critical project milestones and timing include, without limitation:

- Final design for pond clean-out (i.e., CCR removal), second quarter 2020
- CCR closure by removal, approximately 20 months following BATW holding and treatment tank construction completion (work likely to commence in third quarter of 2020) (*see* below)
- Total all-in project cost $9.4 Million

BATW Holding & Treatment Tank Construction – To address the cessation of using the Combined Waste Treatment Pond by October 31, 2020, a new system of concrete holding and treatment tanks will be needed to manage BATW flows. This system of tanks will be used prior to any compliance date taking effect for the revised ELGs for BATW (i.e., as a holding, treatment, and discharge

[1] On October 22, 2018, certain groups filed a petition in the Court of Appeals for the D.C. Circuit challenging this rule. *Waterkeeper Alliance, Inc. et al. v. EPA*, No. 18-1289 (D.C. Cir.). Should that challenge be successful, this deadline could be adjusted.

mechanism), along with afterwards as part of a closed-loop BATW management system (i.e., as a holding and treatment tank for BATW recycling).

- Complete engineering for tank design, October/November 2018
- Mobilization and decommissioning site preparation, fourth quarter 2018
- Construction, second and third quarter 2019
- Operations and testing for TSS, oil and grease, and pH NPDES permit requirements, first and second quarter 2020
- Shift all BATW flows, tank in service, third quarter 2020
- Design average 4.4 million gallons per day
  - Possible design change with submerged conveyor system, implicates a change for system volume to 1.7 million gallons per day (i.e., instead of 4.4 million gallons per day)
  - Maximum design flow will be reviewed after the conveyor system options are explored, as well as the overall design of system reviews occur, which will take place during 2019
- Total all-in project cost $11.5 Million – Tank system only
  - Optional conveyor system would add an addition $8-$12 Million

BATW Closed-Loop Recycling System for ELG Compliance – To address the 2015 ELG Rule's requirements for zero-liquid discharge of BATW, APS intends to develop a closed-loop recycling system for BATW. Because of the uncertainty surrounding the eventual limitations that will actually comprise the ELGs for BATW—i.e., based upon the pending administrative reconsideration and judicial review of the 2015 standards—APS has yet to develop a firm schedule for implementing this project. Nonetheless, based upon the expected timing for each of the critical-path tasks comprising this project, along with the need to implement this project after initiating closure of the CWTP and commissioning the BATW holding and treatment tank system for operation, and assuming there are no significant, unforeseen delays during project engineering or construction, APS believes this closed-loop recycling system for BATW can be implemented by December 31, 2023 at the soonest.

By way of explanation for project sequencing, there are several factors associated with this project that will prevent the BATW closed-loop recycling system from being constructed *until after* the BATW holding and treatment tank is constructed and placed into operation. In addition to the fact that the BATW holding and treatment tank is an integral component of the eventual BATW closed-loop recycling system, the following considerations will require project sequencing:

- A portion of the reused return-water flows from the BATW closed-loop recycling system will be put to use as make-up water for the power plant's flue-gas desulfurization ("FGD") system. Achieving the precise chemistry requirements for the FGD system is critical for, both, safe and reliable power plant operations and achieving required sulfur dioxide removal necessary for compliance with the Clean Air Act. As such, reuse make-up water from the BATW closed-loop recycling system will require that water leaving the BATW holding and treatment tank (i.e., for use in the plant's FGD system) be of appropriate

quality. Achieving this outcome will require real-world, operational water-quality testing, which will determine the design and engineering for those portions of the BATW closed-loop recycling system that will direct water flows into the plant's FGD system (e.g., determining whether additional treatment will be required upstream of the FGD system).

- Designing, engineering, constructing, and operating the BATW closed-loop recycling system will require precise data on the total volume of water being managed in this system. At this time, the volume needs for this system are based entirely on water balance *calculations* for the entire power plant. Given the lack of water flow meters throughout the system of water use at the FCPP, among other factors, these water balance calculations are not precise; as such, the BATW holding and treatment tank system is being designed to handle a range of flow volumes. Once the BATW closed-loop recycling system is put into operation, however, there will be very little allowance for variations in flow volumes within this system. Again, real-world, operational data on the water flow volumes being managed in the BATW holding and treatment tank system will be needed to properly design and engineer the pumping and pipe systems for the BATW closed-loop recycling system (e.g., as to capacity sizing). In addition, at this time, the FCPP is starting to implement a number of water conservation strategies and it is not yet clear what impact those strategies will have on the water flow volumes that will be managed in the BATW closed-loop recycling system. Once again, real-world, operational data associated with the BATW holding and treatment tank system will be needed to account for the impacts of the plant's water conservation strategies on the design and engineering of pumps and piping used in the BATW closed-loop recycling system.

- Sequencing of these projects—so that construction of the BATW closed-loop recycling system follows the finalization of the BATW holding and treatment tank system—is necessary because of construction access limitations. These limitations arise from the existence of significant plant infrastructure in this area that allows for only very narrow construction access to build piping, pumps, and other project components. In other words, there is simply no room for both of these projects to be constructed at the same time, and power plant operational requirements (as described above) will require that the BATW holding and treatment tank system be built first.

Once the BATW holding and treatment tank system can be brought on line in October of 2020, and certainty has been established for the eventual discharge limitations that will apply to BATW, APS expects that the following critical-path tasks will be required:

- Additional tank design and engineering, 18 months
- Pumps design and purchase, four to eight months
- Construction of pump pit tank and piping system, 12 months
- Commissioning and pump tie-in, three months
- Total all-in project cost, approximately $12.5-$18 Million

- Cost variation is dependent on the volume of water under circulation, as well as the overall use of water in the project
- Price is subject to change due to options realized on projects that are being reviewed

Based upon these factors, APS believes that the "as soon as possible" compliance date for implementing the 2015 ELG Rule's zero-discharge standard for BATW at FCPP is December 31, 2023. This is the soonest date by which APS can achieve compliance through integrated planning for the facility while at the same time avoiding major expenditures to comply with the final effluent limits for BATW until EPA completes its pending rulemaking.