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EPN Comments on Supplemental Effluent Limitations Guidelines and Standards for the Steam Electric Power Generating Point Source Category

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Founded in 2017, the Environmental Protection Network (EPN) harnesses the expertise of more than 550 former EPA career staff and confirmation-level appointees from Democratic and Republican administrations to provide the unique perspective of former regulators and scientists with decades of historical knowledge and subject matter expertise.

EPN is fully supportive of EPA's proposed Best Available Treatment Technology (BAT) for flue gas desulfurization (FGD) wastewater and bottom ash (BA) transport water. We recommend more stringent BAT for combustion residue leachate (CRL) and legacy wastewater and also recommend an earlier compliance date for direct dischargers.

Flue Gas Desulfurization Wastewater and Bottom Ash Transport Water

EPN applauds EPA for proposing zero discharge requirements for both FGD wastewater and BA transport water in this steam electric effluent limitation guideline (ELG). EPN agrees with EPA that these limitations are technologically available, economically achievable, and have acceptable non-water quality environmental impacts.

EPA's proposed zero discharge for FGD wastewater is based on chemical precipitation to remove suspended solids and scaling compounds followed by membrane filtration and then recycling of the permeate back to the plant either as FGD makeup water or boiler makeup water. This proposed BAT is a technologically available treatment system already in use by multiple international full-scale plants as well as pilot projects in the U.S. The system is economically achievable and even less costly than the non-membrane treatment systems used by 36 currently-operating coal-fired power plants in the U.S. that are achieving zero discharge of FGD wastewater. Despite arguments to the contrary in the 2020 rule, this treatment system has acceptable non-water quality environmental impacts. The 2020 rule expressed concern that the brine generated by membrane filtration had to be encapsulated using fly ash, preventing that fly ash from being used as an admixture or a replacement for Portland cement in concrete. EPA's new analysis finds that there is enough fly ash to accommodate both FGD brine encapsulation needs and the beneficial use market, leaving millions of tons of fly ash still requiring disposal. EPA also points out that brine can be safely disposed of using deep well injection or crystallization. While these alternative disposal methods are more expensive, EPA's analysis indicates they are still economically achievable.

EPA's proposed zero discharge for BA transport water is based on dry handling or closed loop systems. This proposed BAT is clearly technologically available and economically achievable. More than 75% of coal-fired power plants already use this technology or are planning to switch to it. There is no longer a need for a BA transport water purge allowance in order to encourage non-CCR wastes to be sent to BA handling instead of to unlined impoundments. By the time this proposed ELG is promulgated in 2024, the Coal Combustion Residue (CCR) rule will have required most impoundments to stop receiving CCR wastes.

Combustion Residue Leachate

EPN does not agree with EPA's proposed BAT of chemical precipitation for CRL from landfills and impoundments with limitations for mercury and arsenic. All the data on CRL indicate that this waste stream has similar pollutants as FGD and can be treated with the same technology. Rather than requiring only chemical precipitation, which is effective in removing only mercury and arsenic, EPA should require that facilities treat CRL with chemical precipitation and membrane filtration. This would require no additional effort for facilities that already co-treat CRL and FGD and would result in zero discharge. Facilities that have engineering obstacles to co-treatment based on the proximity of the landfill or other factors would have to install additional treatment, but that separate treatment system would require less operation and maintenance costs because of the lower volume CRL has compared to FGD. Separate treatment systems would not be able to recycle the permeate water back to the plant, so instead should be required to meet the membrane filtration limits (arsenic, mercury, selenium, nitrate/nitrite, bromide, and total dissolved solids) established in the 2020 rule's voluntary incentives option for FGD. EPN further recommends that when these separate systems are used for landfills or impoundments that collect both leachate and stormwater, the CRL limits should apply without exception during storm events.

EPA should explain in the final rule that individual facilities have the ability to request variances from BAT requirements. Under Clean Water Act (CWA) Section 301(c), facilities can apply for a variance from nonconventional pollutant BAT limits due to economic factors if they can show they will use the maximum technology within their economic capability, resulting in further progress toward a no-discharge goal. Under CWA section 301(n), individual facilities can also apply for a Fundamentally Different Factors variance from toxic, conventional, and nonconventional BAT limits if they can demonstrate they are fundamentally different from the factors considered in establishing the BAT limits.

EPN agrees with EPA's proposal that any discharge of CRL through groundwater that is a functional equivalent of a direct discharge under the *Maui vs. Hawaii Wildlife Fund* decision[1] should be subject to the same BAT limits in National Pollutant Discharge Elimination System permits as discharges directly into surface water. In response to EPA's question about whether different BAT limits should be applied to CRL from pre- and post-closure landfills or surface impoundments, EPN recommends that the same limits apply. We understand that CRL volumes will decrease significantly post-closure, but treatment should continue to reduce toxic pollutant discharges.

Legacy Wastewater

EPN agrees with EPA's proposal to separately evaluate the treatment of: 1) surface impoundment decant wastewater (water above the CCR which when drained will not resuspend CCR) and 2) surface impoundment dewatering wastewater (water below the decant water in contact with stationary or resuspended CCR). EPN disagrees with EPA's proposal to require best professional judgment (BPJ) for both of these wastewaters. We recognize that under the CCR rule, impoundments must be closed by 2026 so decant and dewatering wastewaters will already have been discharged under state BPJ limits before this ELG is effective. However, EPA has identified 22 surface impoundments that do not have to close where facilities

[1] https://www.supremecourt.gov/opinions/19pdf/18-260_jifl.pdf

would not likely begin closure and dewatering until after the effective date of this ELG. EPA should establish BAT limits for these 22 impoundments. EPN further believes that these BAT limits are needed to serve as a model for state BPJ limits for those impoundments closing before the ELG is effective. EPN recommends that BAT be set as zero discharge for the decant wastewater, requiring that this water be transmitted to the FGD treatment system for chemical precipitation and membrane filtration. We recommend that BAT be set with mercury and arsenic limits for the dewatering wastewater, requiring treatment with modular, leased chemical precipitation systems.

EPN further recommends that EPA establish a separate BAT category for legacy surface impoundments at inactive/retired power plants. This is a significant category because there are an estimated 170 surface impoundments at 72 retired plants. Because EPA has not yet finalized a CCR rule for these impoundments, it is likely they will not close until after this ELG is effective. EPN recommends that EPA set BAT for this category with mercury and arsenic limits for both decant and dewatering wastewaters, requiring treatment with modular, leased chemical precipitation systems.

Exemptions from BAT

EPN agrees with EPA's proposal to retain the 2015 rule's exemption from BAT for oil-fired units and units of 50 MW or less.

EPN agrees with EPA's proposal to retain the 2020 rule's exemption from BAT for plants retiring in 2028. Many plants made the decision to close at the time of the 2020 rule, and several are years into the process. Furthermore, since this ELG is not expected to be finalized until 2024, new permits could not be in place in time to accelerate retirements. In addition, EPN supports EPA's proposal that permits for retiring facilities require the automatic application of zero discharge limits for FGD wastewater and BA transport water if a plant fails to cease combustion of coal by 2028.

EPN agrees with EPA's proposal to eliminate the 2020 rule's less stringent BAT for high-flow facilities and low utilization electric generating units. EPA presented convincing information in the preamble of this ELG that these exemptions from BAT were unjustified.

EPN supports EPA's proposal to allow less stringent BAT for "early adopter" plants that have achieved compliance with the 2015 or 2020 rule requirements and elect to retire no later than December 31, 2032. EPN only supports this early adopter exemption from BAT for plants that are in compliance with both FGD wastewater and BA transport water limits in the earlier rules, not for plants that are in compliance with the limits for only one of these waste streams. EPN also supports EPA's proposal that permits for these facilities require the automatic application of zero discharge limits for FGD wastewater and BA transport waters if a plant fails to cease combustion of coal by December 31, 2032.

Compliance date

EPN supports EPA's analysis that all indirect dischargers can meet the BAT limits for FGD, BA, and CRL within three years. If EPA agrees with EPN's recommendation to change BAT for CRL to include membrane filtration after chemical precipitation, we still believe that indirect dischargers will be able to

comply within three years. There are an adequate number of membrane vendors to supply both direct and indirect dischargers with the needed equipment and three years is sufficient time to install this equipment.

Since indirect dischargers can come into compliance within three years, EPN believes that direct dischargers can come into compliance within four years. EPN recommends that EPA change the direct dischargers compliance date of no later than December 31, 2029, to December 31, 2028. Direct dischargers have known since 2015 that chemical precipitation followed by additional treatment would be needed for FGD wastewater and that dry handling or closed loop systems would be required for BA transport water. Most facilities already comply with the BA transport water requirement, and membrane filtration is readily available and less expensive than biological or thermal treatment for treatment of FGD and CRL. It is unreasonable to give these dischargers 14 years after the 2015 rule to come into compliance with this new rule.