

BEFORE THE COMMONWEALTH OF PENNSYLVANIA
ENVIRONMENTAL HEARING BOARD
2nd Floor, Rachel Carson State Office Building
400 Market Street
Post Office Box 8457
Harrisburg, PA 17105-8457

**CITIZENS COAL COUNCIL AND
ENVIRONMENTAL INTEGRITY
PROJECT,**

Appellants,

v.

**COMMONWEALTH OF
PENNSYLVANIA, DEPARTMENT OF
ENVIRONMENTAL PROTECTION,**

Appellee.

EHB Docket No. _____

OBJECTIONS TO ISSUANCE OF PERMIT AMENDMENT PA0002941

1. This appeal concerns a National Pollutant Discharge Elimination System (“NPDES”) permit amendment (Permit PA0002941) that authorizes Allegheny Energy Supply (“AES”) to discharge waste water containing heavy metals such as mercury, selenium, cadmium, and lead into a stretch of the Monongahela River that provides drinking water to over 90,000 people.¹ Appellants Citizens Coal Council and Environmental Integrity Project challenge the failure of the Pennsylvania Department of Environmental Protection (“DEP”) to set protective

¹ Permit PA00002941 and the supporting Fact Sheet/Statement of Basis prepared by DEP are attached as Exhibit 1.

technology-based effluent limits (“TBELs”) as the federal Clean Water Act (33 U.S.C. §§ 1251 *et seq.*) and the Pennsylvania Clean Streams Act (35 P.S. §§ 691.5 *et seq.*) require.

2. After operating the Hatfield’s Ferry plant for 40 years, AES is taking long overdue action to install air pollution controls or “scrubbers.” While these scrubbers will limit the pollution that exits the Hatfield’s Ferry stack, they also will generate a liquid waste stream containing heavy metals and other pollutants that otherwise would be released into the air. Absent effective controls, these pollutants will end up in the Monongahela River.

3. There is technology available to ensure that scrubbers do not clean up the air only to pollute rivers and streams. Many coal-fired power plants around the country are using “zero liquid discharge” systems to eliminate *any* discharge at all from their scrubbers. Under the federal Clean Water Act and the Pennsylvania Clean Streams Act, DEP must set TBELs that reflect the best available technology in use at other similar facilities. Yet DEP declined even to evaluate the use of zero liquid discharge technology at Hatfield’s Ferry and instead set effluent limits for heavy metals that are among the very weakest in the country. These limits are therefore arbitrary, capricious, an abuse of discretion and contrary to the Clean Water Act, the Pennsylvania Clean Streams Act, and its implementing regulations.

PARTIES

4. Appellant Citizens Coal Council is a nonprofit citizens group, based in Washington County, Pennsylvania. The Citizens Coal Council is a national alliance of grassroots groups and individuals working to protect communities affected by the mining, processing, and burning of coal by advocating for enforcement and strengthening of environmental laws. The membership of Citizens Coal Council includes both of individuals and

member groups located throughout the United States. The membership base of the Citizens Coal Council and its member groups numbers approximately 40,000 people.

5. Two member groups of the Citizens Coal Council are based in southwestern Pennsylvania's lower Monongahela Valley: the Center for Coalfield Justice, based in Washington, and the Mountain Watershed Association, based in Melcroft. Members of the Citizens Coal Council and these two groups live throughout the Monongahela Valley.

6. The Monongahela River is the drinking water supply for Citizens Coal Council members living in the towns of Carmichaels, which is located immediately downstream from the Hatfield's Ferry Plant; Masontown, which is located directly across the river from the Hatfield's Ferry plant; and Clarksville, which is located approximately 12 miles downstream from the Hatfield's Ferry plant. Members of Citizens Coal Council also spend time strolling, fishing, boating, and otherwise recreating in and along the Monongahela River.

7. DEP's failure to set protective effluent limits for toxic heavy metals injures the interests of Citizens Coal Council and its members in protecting water quality and the integrity of the Monongahela River.

8. Philip Coleman is a board member of appellant Citizens Coal Council and the board chair of Center for Coalfield Justice. Mr. Coleman has a longstanding interest in protecting and restoring water quality and other natural resources in western Pennsylvania

9. Mr. Coleman has lived in the Borough of West Brownsville, Washington County, for 39 years. West Brownsville is located approximately 25 miles downriver of the Hatfield's Ferry power plant.

10. Mr. Coleman's drinking water comes from the Monongahela River. The Pennsylvania American Water Company, his water supplier, draws water from an intake

approximately ten miles downstream of Hatfield's Ferry. Consequently, added water pollution from Hatfield's Ferry increases the risk that Mr. Coleman's drinking water will be contaminated.

11. Mr. Coleman has a vital interest in ensuring that his water is clean and safe to drink. This interest is harmed by DEP's failure to set stringent limits on the discharge of toxic heavy metals and other pollutants as the Clean Water Act and implementing state laws require.

12. Mr. Coleman regularly uses and enjoys the Monongahela River. In the past he has canoed the river, and he currently walks along the banks of the river once a week to enjoy the scenery. Seven or eight times each summer, Mr. Coleman goes to the Highpoint Restaurant to eat dinner overlooking the river. This coming summer, Mr. Coleman will return to the Highpoint Restaurant to enjoy the prospect of the river, fishermen, and pleasure boats.

13. The health of the Monongahela River ecosystem is integral to Mr. Coleman's enjoyment. Pollution that compromises the integrity of the river detracts from the pleasure and inspiration it affords.

14. Mr. Coleman is aware of advisories that caution against eating fish from the Monongahela due to mercury contamination, and he knows that fishermen release any fish they catch because they are afraid to eat them. Mr. Coleman does not fish the Monongahela himself for this reason. Additional pollution from the Hatfield's Ferry plant will exacerbate existing contamination from mercury and other persistent heavy metals such as selenium, compromising any future efforts to restore healthy fisheries. This too harms Mr. Coleman's aesthetic and recreational interests in the Monongahela River.

15. Appellant Environmental Integrity Project is a nonprofit conservation organization, based in Washington D.C. Environmental Integrity Project advocates for effective

enforcement of environmental laws, and its objectives include helping local communities in Pennsylvania to obtain the protection of environmental laws.

16. Environmental Integrity Project has invested substantial time and effort in protecting the environment of Southwestern Pennsylvania and the health and welfare of its residents. Environmental Integrity Project has collected evidence of air and water quality violations that threaten public health and the environment in Pennsylvania, using this information to push for state and national law enforcement. When an embankment of fly ash weighing 12,000 tons collapsed on a neighborhood in Forward Township, Allegheny County, and spilled into a tributary of the Monongahela River, Environmental Integrity Project provided independent environmental testing and advocacy to residents.

17. In 2005, Environmental Integrity Project sued AES over major, persistent violations of its permitted air pollution limits at the Hatfield's Ferry plant. AES settled the suit and agreed to install flue gas desulfurization ("FGD") scrubbers that will dramatically reduce air pollution from Hatfield's Ferry, saving an estimated 200 lives and \$1.2 billion in health costs. Environmental Integrity Project's interest in preserving the environmental gains of this settlement is injured by DEP's issuance of a permit that allows AES to remove pollutants such as mercury from its air emissions only to release them into the Monongahela River. Environmental Integrity Project's broader organizational interests in protecting the health and welfare of Pennsylvania's citizens from pollution, and in ensuring the enforcement of environmental laws, are adversely impacted by DEP's failure to set effluent limits required under the Clean Water Act and implementing state laws.

18. Respondent DEP is the state agency responsible for administering the Clean Water Act NPDES program in the Commonwealth of Pennsylvania. DEP issued the NPDES permit modification at issue in this appeal on December 30, 2008.

STATUTORY BACKGROUND

19. Congress passed the Clean Water Act in 1972 to “restore and maintain the chemical, physical, and biological integrity” of America’s rivers, lakes and streams. Federal Water Pollution Control Act, 33 U.S.C. § 1251(a). The Act protects all waters of the United States, including surface waters that supply drinking water, support fish and wildlife, and provide aesthetic and recreational opportunities for current and future generations of Americans.

20. The Clean Water Act’s goal is to eliminate all discharge of pollution into navigable waters. *See* 33 U.S.C. § 1251(a)(1). To this end, the Act established the NPDES permit program, to be administered by the states with the approval of the United States Environmental Protection Agency (“EPA”). *See* 33 U.S.C. § 1342; *see also* 35 P.S. § 691.5 (authorizing DEP to adopt regulations governing NPDES permits); 25 Pa. Code § 92.2 (incorporating by reference federal regulations that implement the Clean Water Act into Pennsylvania regulations). In order to discharge any pollutant from a point source, a NPDES permit is required. *See* 33 U.S.C. §§ 1311(a), 1342(a)(1). A point source is “any discernible, confined and discrete conveyance” and includes effluent pipes. 33 U.S.C. § 1362(14). A discharge is the “addition of any pollutant to navigable waters from any point source.” 33 U.S.C. § 1362(12).

21. Because the Act seeks both to “restore” and “maintain” the waters of the United States, it prohibits any discharge that would further degrade water quality, and further requires installation of state-of-the-art control technologies to ensure that water quality improves.

22. In no event can a discharge “interfere with the attainment or maintenance” of water quality standards. 33 U.S.C. § 1312(a). Thus, NPDES permits must contain water-quality-based effluent limitations (“WQBELs”) whenever a permitting agency determines that a planned discharge of pollution could cause or contribute to a violation of water quality standards in the receiving body of water. *See id.*; *see also* 40 C.F.R. § 122.44(d)(1)(i).

23. Moreover, the NPDES permit must limit pollution to the greatest extent possible. Dischargers are not allowed to pollute up to the water quality standards. Rather, permitting agencies must set TBELs based on the best available pollution control technologies. *See* 33 U.S.C. §§ 1311 (establishing TBELs), 1342(a)(1) (requiring that NPDES permits incorporate TBELs); *see also* 25 Pa. Code §§ 92.2a(a)(2) (requiring that effluent limitations be established in DEP permits based on all applicable requirements of the Clean Water Act), 92.2d (specifically requiring technology-based standards in DEP permits). All sources and all pollutants must be subject to TBELs. *See* 33 U.S.C. § 1311(b)(1)-(3).

24. With the exception of five conventional pollutants parameters (Biological Oxygen Demand, Total Suspended Solids, pH, fecal coliform, and oil and grease), TBELs must be set based on the “best available technology economically achievable” or “BAT.” 33 U.S.C. § 1311(b)(2). BAT-based limits are keyed to the Clean Water Act’s zero discharge goal and thus “*shall require the elimination of discharges of all pollutants* if the Administrator finds, on the basis of information available to him . . . that such elimination is technologically and economically achievable. . . .” 33 U.S.C. § 1311(b)(2)(A) (emphasis added).

25. In setting BAT limits, a state permitting agency first looks to national effluent limitation guidelines established by EPA. These guidelines represent the minimum level of control that must be imposed in a NPDES permit.

26. The guidelines act as a floor, not a ceiling, on a state's duty to set TBELs. States must set TBELs "on a case-by-case basis . . . to the extent that EPA-promulgated effluent limitations are inapplicable." 40 C.F.R. § 125.3(c)(2). The regulations reiterate that "where promulgated effluent limitation guidelines only apply to certain aspects of the discharger's operation, or to certain pollutants, other aspects or activities are subject to regulation on a case-by-case basis in order to carry out the provisions of the Act." 40 C.F.R. § 125.3(c)(3).

27. EPA has established effluent limitation guidelines for a limited number of pollutants emitted from Steam Electric Generating Plants, a category that includes coal-fired power plants. See 40 C.F.R. § 423. However, these effluent limits, which have not been updated in over 25 years, do not address many of the most toxic pollutants that are present in coal combustion wastes. See 40 C.F.R. §§ 423.12 – 423.17. Further, as EPA has informed DEP, the effluent limitation guidelines do not cover FGD scrubber wastewater.

28. In the absence of applicable federal limits, states set case-by-case limits based on the best professional judgment ("BPJ") of the permitting agency. A state agency setting BPJ-based BAT limits must base its decisions on the same statutory considerations that bind EPA. The D.C. Circuit has held that: "When issuing permits according to its BPJ, EPA is *required* to adhere to the technology-based standards set out in § 1311(b). States issuing permits pursuant to § 1342(b) stand in the shoes of the agency, and thus must similarly pay heed to § 1311(b)'s technology-based standards when exercising their BPJ." *Natural Res. Def. Council v. EPA*, 859 F.2d 156, 183 (D.C. Cir. 1988) (emphasis in original).

29. The technology-based standards of § 1311(b) require DEP to consider a number of factors: the production process in use and the possibility of changing processes; the non-water-quality impacts of controlling pollution; the age of equipment; the costs of pollution control; and importantly, “the engineering aspects of various control techniques.” 33 U.S.C. § 1314(b)(2)(B); *see also* 40 C.F.R. § 125.3(d)(3) (codifying statutory factors); 25 Pa. Code § 92.1.

30. Section 1311(b)’s standards require DEP to consider state-of-the-art practice in the industry as a whole. “Congress intended these [BAT] limitations to be based on the performance of the single best-performing plant in an industrial field.” *Chem. Mfrs. Ass’n v. EPA*, 870 F.2d 177, 226 (5th Cir. 1989). Thus, based on an analysis of controls in use at the cleanest plants, the agency must set effluent limits that eliminate pollution to the greatest extent possible using technology that is “available” and “economically achievable.”

31. A technology is “available” where an agency has evidence that its use is practicable within the relevant industry. There is no requirement that it be in current use in the relevant industry. “That no plant in a given industry has adopted a pollution control device which could be installed does not mean that the device is not ‘available.’” *Hooker Chems. & Plastics Corp. v. Train*, 537 F.2d 620, 636 (2d Cir. 1976). A point source may be required to use superior treatment technologies that have been demonstrated in another context if the Administrator determines that technology transfer is practicable. *See, e.g., Tanner’s Council of Am. v. Train*, 540 F.2d 1188, 1192 (4th Cir. 1976) (transfer permissible if the technology can be practicably applied); *see also Reynolds Metals Co. v. EPA*, 760 F.2d 549, 562 (4th Cir. 1985) (treatment technology from aluminum forming industry transferable to can-making industry).

32. A BAT decision should be based on the achievements of the best performing plants, even if those plants are not located in the United States. *See Am. Frozen Food Inst. v.*

Train, 539 F.2d 107, 132 (D.C. Cir. 1976) (federal guidelines should be based on exemplary Canadian plant because “we do not think the statutory terms ‘best practicable technology’ or ‘best available technology’ can appropriately be interpreted to exclude consideration of technology available in plants in the same industry across a national boundary”).

33. The use of technology is “economically achievable” if it is affordable for the best-run plants in the industry. “BAT should represent ‘a commitment of the maximum resources economically possible to the ultimate goal of eliminating all polluting discharges.’” *Natural Res. Def. Council v. EPA*, 863 F.2d 1420, 1426 (9th Cir. 1988) (citing *EPA v. Nat’l Crushed Stone Ass’n*, 449 U.S. 64, 74 (1980)). As the Supreme Court has explained, “[n]o one who can afford the best available technology can secure a variance” from stringent BAT limits. *EPA v. Nat’l Crushed Stone Ass’n*, 449 U.S. at 75.

34. In summary, when DEP stands in the shoes of EPA it must set BAT limits for all relevant pollutants based on a consideration of industry-wide best practice, technical feasibility, and affordability. If DEP’s evaluation of the statutory factors, based on all available information, leads it to find that elimination of discharge is technologically and economically achievable within an industry, then the Clean Water Act demands that DEP “*shall* require the elimination of discharges of all pollutants.” 33 U.S.C. § 1311(b)(2)(A) (emphasis added).

FACTUAL BACKGROUND

A. Water Quality and the Monongahela River

35. The Monongahela is a historically significant river that served as an early American gateway to the west. As a working river, the Monongahela has been central to the industries of Pennsylvania for centuries. Today the Monongahela is also a heavily used

recreational water body that attracts boaters, fishermen, and water-skiers. On average, over 49,000 boats were registered in each year between 1997 and 2007 in the five counties bordering the Monongahela, and over 100,000 fishing licenses were sold in those counties in 2007 alone.

36. Most importantly, the Monongahela is the primary source of drinking water for thousands of people in Fayette, Greene, Westmoreland, Washington, and Allegheny Counties. Several drinking water intake structures are located near the Hatfield's Ferry plant. Carmichaels Municipal Water Authority supplies water to approximately 4,700 customers from an intake three miles downstream from Hatfield's Ferry. Seven miles downstream from Hatfield's Ferry is the intake for the Southwestern Pennsylvania Water Authority ("SWPA"), which supplies drinking water to approximately 40,000 people. Further downstream, the Borough of Charleroi, Tri City Joint Municipal Authority, Belle Vernon Borough Municipal Authority, Pennsylvania American Water, and other suppliers provide drinking water from the Monongahela to over 50,000 people.

37. Greene county, where Hatfield's Ferry is located, has a history of water quality problems. On two occasions in 1996, samples of Greene County drinking water revealed levels of arsenic higher than current federal limits, and a Source Water Assessment completed for Carmichaels in 2002 identified heavy metal discharges from Hatfield's Ferry as a concern. Nonetheless, Carmichaels and SWPA do not perform any regular testing to detect the presence of toxic metals in the water they provide. Since January 1, 2001, Carmichaels has tested for metals on only four days. SWPA has tested solely for arsenic on three days in the past five years, and has not tested for any other metal since at least 2003. Thus, people who receive their water from Carmichaels and SWPA have reason to be concerned that contamination of their drinking water may go undetected.

38. Many stretches of the Monongahela downstream from Hatfield's Ferry, particularly the stretch south of Pittsburgh, are subject to highly restrictive fish consumption warnings because the river and the fish living in it are heavily contaminated by mercury and other pollutants. Citizens in parts of Fayette, Washington, and Allegheny counties are advised never to eat carp or catfish.

39. Water quality in the Monongahela River is also failing to meet water quality standards for sulfates and total dissolved solids ("TDS"). Recent monitoring data collected by DEP show that the water quality criteria for sulfates and TDS were violated continually from October through December 2008, and DEP anticipates further violations.

40. Added pollution in the Monongahela River near Hatfield's Ferry could preclude attainment of water quality standards for sulfates and TDS and exacerbate the environmental threats facing local communities. Already, Greene County is a predominantly low-income community that ranks in the bottom ten percent of counties nationwide for environmental quality. The residents of Greene County are subject to pollution-related cancer risks that are estimated to be 100 times above risk levels that the federal government considers acceptable.

B. The Hatfield's Ferry Power Plant

41. Hatfield's Ferry, which was constructed in 1969, is a very large coal-fired power plant with a capacity of 1,710 megawatts. In 2006, the plant generated over 500,000 pounds of solid waste and was the fifth largest source of air pollution in Pennsylvania, emitting over 4,700,000 pounds of toxic air pollutants including mercury, arsenic, barium, lead, zinc, and other metals. Hatfield's Ferry is also a significant water polluter, emitting large volumes of effluent containing over 1,100 pounds of toxic pollutants annually.

42. Operation of Hatfield's Ferry is not only pollution-intensive, it is also very profitable. The Hatfield's Ferry plant is a "baseload" power plant, a low-cost, high-output power producer that generates electricity for sale 24 hours a day. Although AES' parent company, Allegheny Energy, Inc. ("Allegheny") actually decreased the amount of power it generated in the past four years, operating profits from generation (income before dividends and taxes) have more than doubled in that period. In its latest financial filings with the Securities Exchange Commission, Allegheny posted \$653.4 million in annual operating profits from generation alone. Allegheny's operating income from all operations in 2008 totaled in excess of \$800 million. Hatfield's Ferry generates over 20 percent of all the power that Allegheny produces and a significant percentage of Allegheny's operating profit.

43. AES is installing an FGD scrubber system at Hatfield's Ferry in a long overdue effort to reduce air emissions of sulfur dioxide, as well as emissions of mercury and other toxic air pollutants. This upgrade will allow Hatfield's Ferry to continue operating in compliance with new federal and state air pollution standards, including the Clean Air Interstate Rule ("CAIR") and Pennsylvania's Mercury Rule. However, this upgrade also will generate a new waste stream that threatens water quality.

C. Pollution from FGD Scrubbers

44. Scrubbers remove air pollution from flue gases in a process that creates a stream of wastewater called "blowdown" and a solid byproduct called FGD sludge. AES seeks to discharge 475,000 gallons per day of blowdown into the Monongahela River.

45. Scrubber blowdown at coal-fired power plants contains high concentrations of sulfates, dissolved solids, and heavy metals including aluminum, antimony, arsenic, barium, beryllium, boron, cadmium, chromium, copper, lead, mercury, molybdenum, nickel, selenium,

silver, thallium, vanadium, and zinc. With the possible exceptions of antimony and molybdenum, the blowdown at Hatfield's Ferry plant is expected to discharge all of these pollutants in scrubber blowdown.

46. Lead and mercury are well-known toxins. Mercury causes brain and kidney damage, and exposure in pregnant women can cause serious permanent damage to the developing fetus. High exposures to lead cause serious organ damage and death, while lower long-term exposure impairs the central nervous system. Lead is particularly toxic to small children and can cause brain damage.

47. Other metals present in blowdown also pose significant human health risks. Cadmium and selenium are known carcinogens, and EPA cautions that levels of selenium above 50 parts per billion ("ppb") endanger human health. Cadmium, copper, lead, mercury, and thallium damage a number of vital organs, including the nervous system, heart, liver, lungs, and kidneys. These metals also have toxic effects on animals including impaired growth, reproductive problems, and death.

48. Toxic effects result from chronic exposure to these metals even in vanishingly low concentrations. Beryllium kills aquatic organisms at levels above 130 ppb, and chronic exposure to concentrations as low as only 5.3 ppb can result in lowered fertility and other reproductive problems, and shortened life span. Silver is acutely toxic to aquatic life at doses from 1 to 13 ppb, depending on the hardness of the water, and chronic exposure can cause harm at levels around 0.12 ppb, or 120 parts per *trillion*. One part per billion of cadmium is enough to kill sensitive species such as rainbow trout, and chronic exposure to levels as low as 0.15 ppb, or 150 parts per trillion, is toxic to other aquatic fauna. Mercury is exceedingly toxic even by these standards, with toxic impacts occurring at levels lower than 70 parts per trillion.

49. Mercury, cadmium, copper, selenium, and lead are bioaccumulative, meaning that they tend to accumulate in animal tissues. Rather than gradually becoming dispersed and diluted, bioaccumulative pollutants persist in the environment in concentrated pockets, building up to higher concentrations in larger animals, ultimately posing significant health risks to the species at the top of a food chain, including people.

50. “Dissolved solids” is a catch-all category of pollution that includes common chemical salts such as sulfates and chlorides and also the toxic metals discussed above. Dissolved pollutants are considerably harder to treat and are often beyond the capability of drinking water treatment systems to remove because they are dissolved in water and not merely suspended in it. Dissolved solids at concentrations above water quality standards make water taste and smell bad, and also increase corrosion in pipes, industrial machinery, and household appliances. As a result of recent water quality violations for TDS in the Monongahela River, industry and utility companies reported significantly higher water treatment costs.

D. Elimination of Pollution from FGD Scrubbers: Zero Discharge

51. Pollution from toxic FGD scrubber wastewater is a growing national concern. One in six coal units in the United States uses a wet FGD scrubber to reduce emissions of sulfur dioxide, and many more plants are scheduled to install scrubbers to comply with CAIR and other state and federal requirements for emissions control. EPA projects that in the next few years, 50 percent of coal-fired units will be using scrubbers, and that 70 percent will be using scrubbers by 2025.

52. In 2005, increased scrubber use prompted EPA to initiate a review of the federal effluent limitation guidelines applicable to coal-fired power plants. Based on this review, EPA intends to set national effluent limits for FGD scrubbers. However, until EPA concludes this

rulemaking process, states are responsible for using BPJ to set TBELs applicable to discharges of FGD scrubber waste water on a case-by-case basis. In setting TBELs at the state level, EPA's research to date is directly relevant.

53. EPA's investigation is centered on the precise issue at the heart of this permit appeal: what is the best available technology to treat FGD scrubber blowdown. EPA has gathered data provided by numerous coal-fired power plants, as well as research institutes, manufacturers of pollution control technology, and universities. In August 2008, four months before DEP issued this amended permit, EPA published the results of its research to date.

54. In a detailed 90-page report, EPA released statistics based on a sampling of 82 coal plants that collectively operate 75 percent of all the wet scrubbers in use at coal plants today. See EPA, *Steam Electric Power Generating Point Source Category: 2007/2008 Detailed Study Report* (2008) ("EPA Study") (attached as Exhibit 2). EPA's study reveals that over one third of the facilities surveyed, representing over 25 percent of all coal plants using scrubbers nationwide, discharge no scrubber blowdown at all.

55. There are several technologies that plants are using to achieve zero discharge of pollutants. Most of the zero discharge facilities that EPA studied completely recycle their scrubber blowdown and therefore have "zero liquid discharge." Three of the other power plants studied achieve zero liquid discharge by evaporating their waste in ponds. Four additional plants have used advanced biological treatment systems to greatly reduce the level of toxic metals in their effluent and achieve zero or near-zero liquid discharge. Beyond the techniques currently in use, EPA and industry associations are actively exploring a variety of advanced techniques, including some that have been successfully used in other industries, that can either completely eliminate the discharge of metals in wastewater or reach a level very close to zero.

56. Yet another option for achieving zero liquid discharge is “mechanical evaporation,” which EPA refers to as “evaporation with distillate recovery” because the blowdown is evaporated in an industrial distillation process, creating a flow of reusable steam and an increasingly concentrated brine that is eventually reduced to a solid waste product. *Id.* at 3-41. The technology is in use at many coal plants to treat waste streams other than scrubber blowdown. According to EPA, “coal-fired power plants have recently begun to consider, install, and operate evaporator systems for the treatment of FGD wastewater as well.” *Id.* In its study, EPA suggests two different process modifications that make the proven technology directly applicable to FGD scrubbers.

57. Use of evaporation and distillation is practical and affordable. EPA cites the example of two coal-fired power plants in Italy that are already operating such a system, and several more plants that are currently installing the technology, including one plant in the United States. The “evaporation with distillate recovery” system is also used to treat waste waters at other industrial plants including in the chemicals and oil refining sectors. Consultants hired by AES have concluded that it would be feasible to install such a system at Hatfield’s Ferry. *See Black & Veatch, Allegheny Energy, Inc. Hatfield's Ferry Power Station; Conceptual Wastewater Treatment Engineering Study and Cost Estimate ES-5* (2008) (attached as Exhibit 3).

58. In addition to these zero discharge systems, EPA also studied chemical precipitation, the treatment option that AES is proposing to use at Hatfield’s Ferry. The agency was not impressed with the pollution control results from chemical precipitation systems and concluded that “FGD wastewater from these systems contains significant concentrations of chlorides, TDS, and some metals, including selenium (a bioaccumulative pollutant).” *Id.* at 3-30.

In short, EPA concluded that chemical precipitation systems release significant levels of pollution, including metals that dissolve and travel many miles downstream in river water.

E. The TBELs Established by DEP

59. In setting effluent limits for the FGD waste water to be discharged from Hatfield's Ferry, DEP acknowledged that it was required to set TBELs on case-by-case basis using BPJ. However, DEP did not consider the best technologies available to achieve zero or even close to zero discharge. Instead, DEP set TBELs based on the level of control to be achieved by the chemical precipitation system proposed by AES.

60. Hatfield's Ferry's TBEL limits do not cover the majority of toxic metals that will be present in the scrubber waste water, nor do they set limits for sulfates and TDS. For lead, mercury, beryllium, copper, selenium, and silver, the applicable TBELs are extremely lax compared with limits that other power plants around the country are meeting.

61. The challenged limit for selenium is higher than any discharge reported by the power plants recently surveyed by EPA. *See* EPA, *UWAG Form 2C Effluent Guidelines Database* (2008) (Exhibit 4, attached in CD-ROM format) (Database compiled by EPA in collaboration with Utility Water Act Group ("UWAG") containing information regarding effluent discharges of FGD scrubber blowdown and ash handling waters from 86 power plants). Indeed, the very worst performer among the plants providing data from an outfall that solely discharges FGD scrubber blowdown, and indeed the worst performer in general of all 86 surveyed plants, is the Big Bend Power Station in Florida. Big Bend discharges 2.04 milligrams per liter ("mg/L") of selenium daily. The TBEL that DEP established for selenium at Hatfield's Ferry is 4 mg/L — nearly double the reported discharges at Big Bend.

62. Similarly, the TBELs DEP set for silver and copper at Hatfield's Ferry are at least double the discharge levels reported at every other outfall discharging only FGD scrubber blowdown, and the daily limit of 10 micrograms per liter ("ug/L") for mercury is higher than the discharge achieved at these outfalls, save for at the Big Bend plant. Likewise, the TBELs for lead and beryllium are higher than at all but one of these outfalls.

63. DEP has never offered any explanation why Hatfield's Ferry cannot comply with technology-based limits that are at least as stringent as the limits other plants around the country are currently meeting, much less why Hatfield's Ferry cannot achieve zero discharge.

F. The Instant Appeal

64. DEP finalized the Hatfield's Ferry permit amendment on December 30, 2008. Notice of the issuance of this amendment was filed in the Pennsylvania Bulletin on February 14, 2009. Pursuant to 25 Pa. Code § 1021.52(a)(2) "any other person aggrieved by an action of the Department" who is not the person to whom DEP's action is directed, "shall file its appeal with the Board within . . . 30 days after notice of the action has been published in the Pennsylvania Bulletin." This appeal is therefore timely.

OBJECTIONS TO NPDES PERMIT AMENDMENT PA0002941

65. For all of the reasons set forth above, Appellants challenge DEP's issuance of a NPDES Permit Amendment to Hatfield's Ferry on grounds that it fails to impose sufficiently protective TBELs for beryllium, copper, lead, mercury, selenium, and silver as the Clean Water Act and the Pennsylvania Clean Streams Act require. Further, Appellants challenge the failure to set any TBELs at all for aluminum, arsenic, barium, boron, cadmium, chlorides, chromium,

manganese, nickel, sulfates, thallium, total dissolved solids, vanadium and zinc, all of which are expected to be present in the Hatfield's Ferry scrubber waste water.

66. In conducting its BPJ-based BAT analysis in order to set TBELs, DEP failed to give meaningful consideration to all of the various technologies that are currently available to reach zero or near-zero discharge of pollutants from the Hatfield's Ferry plant. Given available EPA data, DEP could not reasonably determine that the chemical precipitation system proposed by AES represents the best available technology.

67. DEP neglected to analyze all of the required factors set forth under the Clean Water Act and implementing federal and state regulations. *See* 33 U.S.C. § 1314(b)(2)(B); 40 C.F.R. § 125.3(d)(3); 25 Pa. Code § 92.1. Importantly, DEP failed to analyze AES' ability to undertake process changes at Hatfield's Ferry's that would facilitate use of zero and near-discharge technologies.

68. Further, DEP failed to consider what level of pollution control is consistent with the achievements of the best performing plants in the industry.

69. For all of these reasons, the TBELs imposed at Outfall 306 fail to reflect a principled assessment of BAT in violation of 25 Pa. Code §§ 92.2a, 92.2d and 40 C.F.R. §§ 125.3(c)(2),(3).

70. Moreover, the challenged TBELs fail to "require the elimination of discharges of all pollutants" based on available information demonstrating that "such elimination is technologically and economically achievable." 33 U.S.C. § 1311(b)(2)(A).

REQUEST FOR RELIEF

Appellants therefore request that this Board:

1. Declare that DEP violated the Clean Water Act and the Pennsylvania Clean Streams Act by failing to undertake a valid case-by-case analysis to set technology-based effluent limits based on the best available technology that is economically achievable;
2. Declare that DEP erred in determining that AES' preferred chemical precipitation treatment system represents best available technology notwithstanding the fact that zero liquid discharge systems are currently in use at coal-fired power plants around the country; and
3. Remand the challenged limits to DEP for revision in keeping with the requirements of the Clean Water Act and corresponding provisions of the Pennsylvania Clean Streams Act and implementing state regulations.
4. Appellants reserve the right to amend this Notice of Appeal or to introduce additional objections in this proceeding based upon the subsequent discovery of any information that would tend to provide additional bases for challenging DEP's actions with regard to issuance of the Permit Amendment or the effective application of law or regulation, or for any other reason permissible under law, including those set forth at 25 Pa. Code § 1021.53.

Respectfully submitted on this 16th day of March,

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