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*By Email and Certified Mail*

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July 8, 2009

**Re: Public Comment Regarding TVA Kingston Fossil Plant's Draft NPDES Permit No. TN008087 for Flue Gas Desulfurization System Discharges**

Dear Mr. Alexander:

Thank you for the opportunity to comment on the Draft National Pollution Discharge Elimination System (NPDES) permit for the proposed Flue Gas Desulfurization (FGD) System at the Tennessee Valley Authority's (TVA) Kingston Fossil Plant. On behalf of the Environmental Integrity Project and Earthjustice, we are writing to express concern that the draft permit fails to limit pollution from the new FGD scrubbers as the Clean Water Act requires. While we are encouraged that TVA is at last installing air pollution controls, the Tennessee Department of Environment and Conservation (TDEC) must ensure that reduced air pollution does not come at the cost of increased and illegal water pollution—and, most importantly, increased discharges of toxic heavy metals into drinking water supplies that have already been compromised by the December 22, 2008 coal ash spill (2008 spill).

TDEC issued the draft NPDES permit for TVA's Kingston Fossil Plant to allow discharges to the Clinch River from TVA Kingston's FGD wastewater system. Specifically, TDEC proposes to allow TVA to discharge one million gallons per day (mgd) from an FGD detention pond through new Outfall 01A into a discharge channel, where the FGD discharge will

mix with other waste (estimated 1297 mgd flow) and discharge into the Clinch River from existing Outfall 002.<sup>1</sup>

Wet scrubbers reduce air pollution from flue gas stacks at coal fired power plants by transferring the pollutants from the air to coal combustion wastes (CCW or coal ash), including FGD wastes.<sup>2</sup> Consequently, the CCW generated from the use of wet scrubbers, including FGD wastes, contains concentrated levels of heavy metals and other pollutants—“[e]lements such as Arsenic, Chlorine, Copper, Mercury, Selenium, Zinc, and numerous other dangerously toxic contaminants are found in much higher concentrations in the ash compared to the coal.”<sup>3</sup> When released into the environment through direct discharges to surface water or leaching from inadequately lined or monitored CCW disposal units, these and other hazardous CCW constituents may cause or contribute to cancer or severe illnesses in humans, as well as environmental devastation.<sup>4</sup>

Under the Clean Water Act, TDEC must impose effluent limits for *all* pollutants including metals and total dissolved solids (TDS) that will be discharged from TVA’s FGD system.<sup>5</sup> Although the solids and particulate matter from TVA Kingston’s FGD waste will be temporarily held in a “settling pond,” these FGD wastes, potentially laden with high concentrations of heavy metals, are proposed to be otherwise left untreated before being discharged into the Clinch River.<sup>6</sup> The Clinch River, along with the Emory River, bore the brunt of an environmental catastrophe when 5.4 million cubic yards of coal ash spilled across 300 acres after an ash containment pond breached on December 22, 2008.<sup>7</sup> Water quality sampling has indicated levels of arsenic, lead, mercury, cadmium, chromium, selenium, antimony, nickel, thallium, barium, and beryllium that exceed water quality criteria for drinking water, aquatic organisms, and recreational uses in the Clinch River as a result of the 2008 spill.<sup>8</sup> The impacts to the river from these environmental toxics are compounded by the reality that the Clinch River

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<sup>1</sup> Tennessee Dep’t Env’t. and Conservation (TDEC), State of Tennessee Draft NPDES Permit No. TN0080870, to be issued to TVA for the Kingston Fossil Plant, at 1 (hereinafter “TVA Kingston Draft FGD NPDES Permit”).

<sup>2</sup> U.S. Environmental Protection Agency (EPA), *Characterization of Coal Combustion Residues from Electric Utilities Using Wet Scrubbers for Multi-Pollutant Control* xvi (July 2008), available at <http://www.epa.gov/nrmrl/pubs/600r08077/600r08077.pdf> (hereinafter *EPA Characterization from Wet Scrubbers*).

<sup>3</sup> See Martha Keating et al, Earthjustice, *Waste Deep: Filling Mines with Coal Ash is Profit For Industry but Poison for Communities 2*, available at [http://www.earthjustice.org/library/reports/earthjustice\\_waste\\_deep.pdf](http://www.earthjustice.org/library/reports/earthjustice_waste_deep.pdf) (citing Chantal Block and Richard Dams, *Study of Fly Ash Emissions During Combustion of Coal*, 10 *Env’tl. Sci. & Tech.* 1011 (Oct. 1976)). As coal is burned, “its volume is reduced by two-thirds to four-fifths, concentrating metals and other minerals that remain in the ash.” *Id.*

<sup>4</sup> See generally EPA, *Human and Ecological Risk Assessment from Coal Combustion Wastes (Draft)* (2007) (prepared by RTI), available at [http://www.pineswater.org/EPA\\_ccw\\_risk.pdf](http://www.pineswater.org/EPA_ccw_risk.pdf) (hereinafter *EPA Risk Assessment*).

<sup>5</sup> See Federal Water Pollution Control Act (Clean Water Act), 33 U.S.C. § 1311(b)(2) (2006).

<sup>6</sup> TVA Kingston Draft FGD NPDES Permit, *supra* note 1, at R-2.

<sup>7</sup> EPA, Summary of Past and Current EPA Response Activities Regarding the TVA Kingston Coal Ash Spill Updates (Dec. 28, 2008), available at [http://www.epa.gov/region4/kingston/index.html#12\\_28](http://www.epa.gov/region4/kingston/index.html#12_28).

<sup>8</sup> See Letter from Gary A. Davis, Gary A. Davis & Assoc., to Leo Francendese, EPA Region IV, and Paul Sloan, Deputy Commissioner, TDEC, Water Sample Results for Metals Downstream of TVA Kingston Coal Ash Sludge Release, and enclosures (June 30, 2009) (attached as Exhibit 1) (see, specifically, the Public Water Results table).

was classified as “water-quality limited” due to contamination from PCBs, chlordane, and mercury from other sources even before the breach.<sup>9</sup> Nonetheless, the draft permit fails to include effluent limits for any heavy metal, and only imposes a monitoring requirement for mercury – a quarterly monitoring requirement. These omissions are unjustifiable as a matter of both law and policy.

As TDEC acknowledges, “[w]ater quality constituents of concern include metals such as arsenic, mercury, boron, cadmium, and zinc, which are in dissolved form” in the FGD waste water.<sup>10</sup> Limiting any new discharges of these “constituents of concern” must be a priority given the existing impairment designation for mercury in receiving waters (the Clinch River arm of Watts Bar Reservoir) and given ongoing water quality violations caused by the disastrous failure of TVA’s coal ash impoundment in the December 2008 spill.

In addition, to avoid further risk to human health and the environment, TVA must install state-of-the-art controls to eliminate pollution from its new FGD waste water stream. Zero liquid discharge systems are commonly used to control discharges from FGD systems around the country, and there is no reason why TVA should not achieve zero discharge as well.

Due to the high concentration of heavy metals in FGD waste, as well as the significant impairment of the Clinch River as a result of the December 22, 2008 breach, the latter of which the 2006 Environmental Assessment (EA) and Finding of No Significant Impact (FONSI) could not have taken into account, we respectfully submit the following comments regarding TVA’s proposed new discharges into the Clinch River.

**I. TVA Must be Required to Prepare a New Environmental Assessment for the Proposed Discharging of New FGD Wastewaters into the Clinch River to Account for the Significant Environmental Impairment Caused by the December 2008 Breach.**

TVA’s application for a new NPDES permit to discharge FGD wastes into the spill-impacted Clinch River without conducting a new or supplemental Environmental Assessment (EA) violates the requirements of the National Environmental Policy Act (NEPA).<sup>11</sup> NEPA requires all federal agencies to conduct an EA to determine whether a proposed major action may have significant environmental impacts compared to other reasonable action alternatives.<sup>12</sup> Although not a typical federal agency, TVA is a federal agency under NEPA, and, as such, has

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<sup>9</sup> TVA Kingston Draft FGD NPDES Permit, *supra* note 1, at R-3.

<sup>10</sup> TVA Kingston Draft FGD NPDES Permit, *supra* note 1, at R-2.

<sup>11</sup> National Environmental Policy Act of 1969, 42 U.S.C. §§ 4321 et seq. (2006).

<sup>12</sup> *See, e.g., Help Alert W. Ky., Inc. v. Tenn. Valley Auth.*, No. 98-6176, 1999 WL775931, at \*1 (6th Cir. Sept. 24, 1999). The agency may also conduct a more in-depth Environmental Impact Statement to compare the impacts of the proposed action, a no action alternative, and a broader range of reasonable alternatives to determine whether to move forward with the action alternative. *See, e.g., id., and James v. Tenn. Valley Auth.*, 538 F.Supp. 704, 706 (E.D. Tenn. 1982).

consistently been required to meet the requirements of NEPA for any major federal project.<sup>13</sup> TVA completed its EA to determine the impacts of installing an FGD scrubber system and discharging the waste waters from these scrubbers in 2006,<sup>14</sup> deciding to move forward with the project after issuing a Finding of No Significant Impact (FONSI) later in 2006.<sup>15</sup> Given the catastrophic spill at the TVA Kingston Plant on December 22, 2008, TVA must be required to conduct a new or supplemental EA pursuant to NEPA to determine the cumulative impacts of the FGD discharges including the impacts of the 2008 spill. Without a new or supplemental EA, TVA must not be permitted any additional discharges into the heavily impacted Clinch River or the surrounding environment.

Around 1 a.m. on December 22, 2008, a wall of toxic coal ash<sup>16</sup> breached a dike near TVA's Kingston Coal Fired power plant, releasing what TVA estimated to be a more than 1 billion gallon<sup>17</sup> toxic flood that surrounded homes, covered hundreds of acres of property and farmland, and killed incalculable numbers of fish and other wildlife.<sup>18</sup> The toxic coal ash stored in the Kingston Pond contained a broad range of toxic, heavy metals such as arsenic, selenium, cadmium, lead, and mercury.<sup>19</sup> Despite the fact that enough toxic waste to fill 1,660 Olympic-sized swimming pools<sup>20</sup> spilled over into the Clinch River ecosystem, TDEC issued a draft NPDES permit authorizing a new discharge of FGD waste from the TVA Kingston Plant into the Clinch River.

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<sup>13</sup> See, e.g., *Help Alert*, No. 98-6176, 1999 WL775931 at \*1 (providing that “The National Environmental Policy Act requires federal agencies such as TVA to prepare an environmental impact statement for any major federal action they contemplate that may significantly affect the environment. An environmental impact statement entails a hard look at the environmental consequences of the proposed federal action. If an agency is unsure whether its activities will significantly affect the environment, the agency may opt to prepare a less-intensive environmental assessment. If the environmental assessment results in a determination that a federal action will have significant environmental consequences, then a full-blown environmental impact statement must be prepared. If, on the other hand, the agency determines that no significant environmental effects will occur, the agency may issue a finding of no significant impact and proceed without further environmental analysis.”), and *James*, 538 F.Supp. at 706 (providing that NEPA requires all federal agencies to include an EIS for all “major Federal actions significantly affecting the quality of the human environment” (citing 42 U.S.C. § 4332(C)), and holding that TVA is required to comply with NEPA and its major actions require the preparation of an EA).

<sup>14</sup> TVA, *Final Environmental Assessment, No. 2005-81, Installation of Flue Gas Desulfurization System at Kingston Fossil Plant 1* (Apr. 2006), available at <http://www.tva.gov/environment/reports/kingston2/ea.pdf> (hereinafter EA).

<sup>15</sup> TVA, *Finding of No Significant Impact, No. 2005-81, Installation of Flue Gas Desulfurization System at Kingston Fossil Plant 1* (2006), available at <http://www.tva.gov/environment/reports/kingston2/fonsi.pdf>.

<sup>16</sup> Coal Ash, CCWs, and what the EPA refers to as Coal Combustions Residues (CCRs) are being used interchangeably to meaning the toxic by-products that result from the coal combustion process.

<sup>17</sup> Samira J. Simone, *Tennessee Sludge Spill Estimate Grows to 1 Billion Gallons*, CNN (Dec. 28, 2008) available at <http://edition.cnn.com/2008/US/12/26/tennessee.sludge/>.

<sup>18</sup> Stacy Morford, *EPA Releases Secret List of 44 High-Risk Coal Ash Ponds*, Solve Climate (June 29, 2009), available at <http://solveclimate.com/blog/20090629/epa-releases-secret-list-44-high-risk-coal-ash-ponds>.

<sup>19</sup> EPA, Fact Sheet: Coal Combustion Residue (CCR) – Surface Impoundments with High Hazard Potential Ratings (June 2009) available at <http://www.epa.gov/epawaste/nonhaz/industrial/special/fossil/ccrs-fs/index.htm>.

<sup>20</sup> Simone, *supra* note 17.

NEPA has two goals, the first of which “places upon [an] agency the obligation to consider every significant aspect of the environmental impact of a proposed action.”<sup>21</sup> Second, “it ensures that the agency will inform the public that it has indeed considered environmental concerns in its decision-making process.”<sup>22</sup> The NEPA process begins by an agency conducting an EA<sup>23</sup> to determine whether the proposed action is likely to “significantly affect [ ] the quality of the human environment.”<sup>24</sup> The EA must consider the environmental impacts of the proposed action and alternatives.<sup>25</sup> The courts are clear that the “range of alternatives that an agency must consider decreases as the environmental impact of the proposed action becomes less and less substantial.”<sup>26</sup> Therefore, if an action has substantial negative environmental impacts, then more alternatives need to be included in the assessment.

When considering alternatives to a proposed action in an EA, the courts have emphasized the importance of discussing the underlying cumulative impacts.<sup>27</sup> Courts have held that an EA may be deficient if it fails to include a “cumulative impact analysis or to tier to an [environmental impact statement] that has conducted such an analysis.”<sup>28</sup> The Third Circuit Court of Appeals went even further and held that “if the cumulative impact of a given project and other planned projects is significant, an applicant can not simply prepare an EA for its project, issue a FONSI, and ignore the overall impact of the project.”<sup>29</sup>

Cumulative impacts are defined as “the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions.”<sup>30</sup> The December 2008 spill—the breach of an unlined surface impoundment at the Kingston plant that spilled over 5.4 million cubic yards of hazardous coal ash into the environment—is exactly the type of action that a cumulative impact analysis must acknowledge to ensure that the overall purpose of NEPA is upheld.<sup>31</sup> The toxic sludge will affect many of the area resource considerations in the 2006 final EA such as groundwater quality, surface water, wetlands, aquatic ecology, terrestrial ecology, environmental justice, and prime farmland.<sup>32</sup>

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<sup>21</sup> *Baltimore Gas & Elec. Co. v. Natural Res. Def. Council, Inc.*, 462 U.S. 87, 97 (1983).

<sup>22</sup> *Id.*

<sup>23</sup> 40 C.F.R. § 1501.4 (2009).

<sup>24</sup> *New Mexico ex rel. Richardson v. Bureau of Land Management*, 565 F.3d 683, 703 (10th Cir. 2009); 42 U.S.C. § 4332(2)(C); 40 C.F.R. § 1508.9.

<sup>25</sup> 40 C.F.R. § 1508.9(b).

<sup>26</sup> *Sierra Club v. Espy*, 38 F.3d 792, 803 (5th Cir. 1994) (upholding *Olmsted Citizens for a Better Community v. U.S.*, 793 F.2d 201, 208 (8th Cir. 1986)). See also *Highway J Citizens Group v. Mineta*, 349 F.3d 938, 960 (7th Cir. 2003).

<sup>27</sup> *Kern v. United States BLM*, 284 F.3d 1062 (9th Cir. 2002).

<sup>28</sup> *Native Ecosystems Council v. Dombeck*, 304 F.3d 886, 895 (9th Cir. 2002). See also *Hall v. Norton*, 266 F.3d 969, 978 (9th Cir. 2001); *Blue Mountains Biodiversity Project v. Blackwood*, 161 F.3d 1208, 1214 (9th Cir. 1998); *Idaho Sporting Cong. v. Thomas*, 137 F.3d 1146, 1152 (9th Cir. 1998).

<sup>29</sup> *Soc’y Hill Towers Owners Ass’n v. Rendell*, 210 F.3d 168, 180 (3rd Cir. 2000).

<sup>30</sup> 40 C.F.R. § 1508.7.

<sup>31</sup> Congress passed NEPA in 1969 because it recognized the “critical importance of restoring and maintaining environmental quality to overall welfare and development of man.” 42 U.S.C § 4331(a).

<sup>32</sup> EA, *supra* note 14, at 16-18.

Therefore, TVA cannot rely on the 2006 final EA to avoid the required cumulative impacts analysis for the proposed discharging of new FGD wastewaters into the area affected by the coal ash pond disaster. TVA must perform a new EA and include an analysis of the significant cumulative impacts that the slurry pond failure will undoubtedly have on the surrounding area for decades to come before it can obtain a new NPDES permit that would authorize additional discharges of FGD wastewater and its highly concentrated heavy metal constituents.

## **II. TDEC Must Set Technology-Based Effluent Limitations Taking into Account the Availability of Affordable Zero-Liquid Discharge Technologies.**

TVA must install state-of-the-art controls to eliminate pollution from its new FGD waste water stream to the greatest extent possible. Zero liquid discharge systems are in common use to control discharges from FGD systems around the country, and TVA should achieve zero discharge at its Kingston Fossil plant as well.

The Clean Water Act “require[s] the elimination of discharges of all pollutants if . . . such elimination is technologically and economically achievable.”<sup>33</sup> To this end, TDEC must set technology-based effluent limits (TBELs) based on the best available technology that is economically achievable (BAT).<sup>34</sup> If these TBELs are not sufficient to ensure compliance with water quality standards, then TDEC must set more stringent water quality based effluent limitations (WQBELs).<sup>35</sup>

TDEC has so far neglected to impose any TBELs for the majority of pollutants to be discharged from the FGD scrubber system. Apparently, TDEC is assuming that outdated effluent limitation guidelines (ELGs) for low volume waste sources are applicable to FGD system waste waters, and that there is no obligation to set TBELs for pollutants aside from those covered by these ELGS—that is, total suspended solids (TSS), Oil & Grease, and pH.<sup>36</sup> This assumption is wrong.

First, the low volume waste source ELGs for power plants do not apply to FGD waste waters. When EPA published these ELGs, it made clear that it was “reserving effluent limitations for four types of wastewater for future rulemaking,” and it expressly singled out FGD waste water as the subject of this future rulemaking.<sup>37</sup>

Second, the low volume waste source ELGs do not purport to address metals and other pollutants that are undisputedly present in discharges from FGD scrubber systems. The limited

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<sup>33</sup> 33 U.S.C. § 1311(b)(2)(A).

<sup>34</sup> *See id.*; *see also id.* § 1311(b)(2)(E) (requiring “application of the best conventional pollutant control technology” (BCT) for conventional pollutants).

<sup>35</sup> *See id.* § 1312(a).

<sup>36</sup> *See* TVA Kingston Draft FGD NPDES Permit, *supra* note 1, at R-4.

<sup>37</sup> EPA, *Steam Electric Power Generating Point Source Category; Effluent Limitations Guidelines, Pretreatment Standards and New Source Performance Standards, Final Rule*, 47 Fed Reg. 52,290, 52291 (Nov. 19, 1982).

scope of the ELGs does not license TDEC to ignore toxic metals that concededly are “water quality constituents of concern.”<sup>38</sup> The Clean Water Act requires compliance with BAT-based limits effluent limitations for *all* non-conventional pollutants by 1989, regardless whether applicable ELGs exist.<sup>39</sup>

Where, as here, EPA has not yet established ELGs for either FGD waste waters or the many heavy metals discharged from power plants, TDEC must set BAT-based effluent limits based on “best professional judgment” (BPJ).<sup>40</sup> In setting these case-by-case BPJ limits, TDEC must consider the same factors related to availability and economic achievability that bind EPA. As explained by the D.C. Circuit:

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.<sup>41</sup>

Thus, standing in EPA’s shoes, TDEC must consider all “available” technologies that could eliminate discharges from TVA’s new FGD system. A technology is “available” so long as there is evidence that its use would be practicable within 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.’”<sup>42</sup> A point source may be required to use superior treatment technologies that have been demonstrated in another context if technology transfer is feasible.<sup>43</sup> Moreover, technologies that have been demonstrated outside the United States are “available.”<sup>44</sup>

The use of technology is “economically achievable” if the best-performing plants in the industry can afford it.<sup>45</sup> Fundamentally, “BAT should represent ‘a commitment of the maximum resources economically possible to the ultimate goal of eliminating all polluting discharges.’”<sup>46</sup>

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<sup>38</sup> TVA Kingston Draft FGD NPDES Permit, *supra* note 1, at R-2.

<sup>39</sup> See 33 U.S.C. § 1311(2); see also EPA, NPDES Permit Writers’ Manual, 68 (Dec. 1996), available at <http://www.epa.gov/npdes/pubs/npdes-cover.pdf> (last visited Jul. 7, 2009) (explaining that “BPJ limits are established in cases where ELGs are not available for, or do not regulate, a particular pollutant of concern” (emphasis added)).

<sup>40</sup> See 33 U.S.C. § 1342(a)(1); 40 C.F.R. § 125.3 (setting forth the factors for consideration in a case-by-case BPJ analysis pursuant to authority provided in Clean Water Act § 402).

<sup>41</sup> *Natural Res. Def. Council v. EPA*, 859 F.2d 156, 183 (D.C. Cir. 1988) (emphasis in original).

<sup>42</sup> *Hooker Chems. & Plastics Corp. v. Train*, 537 F.2d 620, 636 (2d Cir. 1976).

<sup>43</sup> 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).

<sup>44</sup> See *Am. Frozen Food Inst. v. Train*, 539 F.2d 107, 132 (D.C. Cir. 1976) (“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”).

<sup>45</sup> See *Chem. Mfrs. Ass’n v. EPA*, 870 F.2d 177, 226 (5th Cir. 1989) (requiring that BAT be based on “the performance of the single best-performing plant in an industrial field”).

<sup>46</sup> *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)).

Thus, “[n]o one who can afford the best available technology can secure a variance” from stringent BAT limits.<sup>47</sup>

For FGD scrubbers, there is no question that zero liquid discharge technologies are both available and economically achievable. According to a detailed study recently completed by EPA, nearly 40% of 82 surveyed power plants with an operational wet FGD scrubber achieve zero liquid discharge.<sup>48</sup>

These plants have adopted a mix of technologies to eliminate all discharges. The simplest methods include the precipitation of high levels of chlorides as solid FGD waste to enable wastewater recycling.<sup>49</sup> Other more advanced methods include evaporation and distillation of effluent, which has been demonstrated abroad and is available for use in the United States.<sup>50</sup> Additional advanced technologies under consideration include the use of reverse osmosis and advanced biological treatment to remove metals.<sup>51</sup>

Most of the zero discharge facilities that EPA studied completely recycle their scrubber blowdown. 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.

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.<sup>52</sup> 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.”<sup>53</sup> In its study, EPA suggests two different process modifications that make the proven technology directly applicable to FGD scrubbers.

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<sup>47</sup> *EPA v. Nat'l Crushed Stone Ass'n*, 449 U.S. at 75.

<sup>48</sup> See EPA, *Steam Electric Power Generating Point Source Category: 2007/2008 Detailed Study Report 3-30* (Aug. 2008) (hereinafter EPA Study), available at <http://www.epa.gov/guide/304m/2008/steam-detailed-200809.pdf>.

<sup>49</sup> See *id.* at 3-4.

<sup>50</sup> See *id.* at 3-31, 3-32, 3-44.

<sup>51</sup> See *id.* at 3-41.

<sup>52</sup> *Id.* at 3-41.

<sup>53</sup> *Id.*

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.

In addition to these zero discharge systems, EPA also studied settling ponds, the treatment option that TVA is proposing to use at the Kingston Fossil plant. As EPA made clear, “settling ponds are not designed to reduce the amount of dissolved metals” and “these dissolved metals are likely discharged if FGD wastewater is treated in settling ponds.”<sup>54</sup>

EPA further expressed concern that “[s]olids that have settled at the bottom of the pond could potentially become resuspended due to the mixing” that occurs with seasonal turnover, “leading to increased concentrations of pollutants being discharged during the turnover period.”<sup>55</sup> In addition, “anaerobic conditions at the bottom of the pond may promote the formation of methylmercury, which could then be present in the discharge.”<sup>56</sup>

TDEC cannot authorize discharges of metals that could be eliminated by zero liquid discharge technologies that should be considered BAT. Given that zero discharge from scrubber systems is technologically and economically achievable, there is no practical or legal justification for TVA’s election to use settling ponds to treat its FGD waste water.

### **III. TDEC Should Set Effluent Limitations for All Heavy Metals and Other Pollutants Typically Associated with FGD Waste.**

TDEC’s draft NPDES permit authorizes discharges of scrubber sludge at 1 million gallons per day<sup>57</sup> while failing to set effluent limitations for 40 of the 41 pollutants typically associated with FGD wastes. EPA has identified 41 heavy metals and other inorganic constituents of FGD and other coal combustion wastes (CCW) that are “potential constituents of concern in CCW.”<sup>58</sup> These constituents are: Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Selenium, Silver, Strontium, Thallium, Vanadium, Zinc, Chloride, Cyanide, Fluoride, Total Nitrate Nitrogen, Phosphate, Silicon, Sulfate, Sulfide, Ammonia, Calcium, pH, Potassium, Sodium, Inorganic Carbon, Total Elemental Sulfur, Total Dissolved Solids, Total Organic Carbon, and Dissolved Organic Carbon.<sup>59</sup> See Table 1. However, of these CCW constituents, TDEC’s draft permit only proposes one effluent limitation from Outfall

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<sup>54</sup> *Id.* at 3-34.

<sup>55</sup> *Id.*

<sup>56</sup> *Id.*

<sup>57</sup> TVA Kingston Draft FGD NPDES Permit, *supra* note 1, at 1.

<sup>58</sup> EPA, *Constituent Screening for Coal Combustion Wastes*, at 2-2 to 2-3 (Oct. 2002) (prepared by RTI), available at [www.regulations.gov](http://www.regulations.gov), with Docket No. EP-HQ-RCRA-2006-0796-0470.

<sup>59</sup> *Id.*

01A—a pH range of 6.0 to 9.0, which is a required effluent limit for every facility in the steam electric power generating point source category.<sup>60</sup>

**Table 1. EPA’s Potential Constituents of Concern in CCW.**

<i>Metals</i>	<i>Metals (cont’d)</i>	<i>Inorganic Anions</i>	<i>Inorganic Cations</i>	<i>Nonmetallic Elements</i>	<i>Measurements</i>
Aluminum	Magnesium	Chloride	Ammonia	Inorganic Carbon	Total Dissolved Solids
Antimony	Manganese	Cyanide	Calcium	Total Elemental Sulfur	Total Organic Carbon
Arsenic	Mercury	Fluoride	pH		Dissolved Organic Carbon
Barium	Molybdenum	Phosphate	Potassium		
Beryllium	Nickel	Silicon	Sodium		
Boron	Selenium	Sulfate			
Cadmium	Silver	Sulfide			
Chromium	Strontium	Total Nitrate Nitrogen			
Cobalt	Thallium				
Copper	Vanadium				
Iron	Zinc				
Lead					

Source (adapted from): EPA, *Constituent Screening for Coal Combustion Wastes*, at 2-2–2-3, tbl. 2-1 (Oct. 2002) (prepared by RTI); EPA, *Human and Ecological Risk Assessment of Coal Combustion Wastes (Draft)*, at 2-4, tbl. 2-4 (2007).

As potential constituents of concern, most of the pollutants listed in Table 1 have known adverse impacts on human health and the environment if they come into contact with human or ecological receptors. Vertebrates exposed to the trace metals in CCW have suffered respiratory, metabolic, hormonal, physiological, and other impairments, including death, and these toxic metals bioaccumulate in animal tissues up the food chain, creating impacts observable for decades.<sup>61</sup> In addition, some of the human health effects from the CCW constituents listed above include:

- Arsenic is a known carcinogen, known to cause cancer of the skin, bladder, and lungs;
- Boron exposure can cause stomach, intestinal, kidneys, liver, and brain damage, negative effects on male reproduction, or even death;
- Cadmium exposure can result in diarrhea, stomach pains, severe vomiting, bone fracture, reproductive effects, nerve damage, immune system damage, or psychological disorders;
- Cobalt has been linked to vomiting, nausea, vision problems, heart problems, and thyroid damage;

<sup>60</sup> See TVA Kingston Draft FGD NPDES Permit, *supra* note 1, at R-15.

<sup>61</sup> See *Hearing on Coal Combustion Waste Storage and Water Quality*, before the U.S. H.R. Comm. on Transportation and Infrastructure, Subcomm. on Water Resources and Environment, 111th Cong. (Apr. 30, 2009) (testimony of Barry Breen, Acting Assistant Administrator Office of Solid Waste and Emergency Response U.S. EPA, and testimony of Dr. Conrad Volz, Assistant Professor of Environmental and Occupational Health, University of Pittsburgh), available at <http://transportation.house.gov/hearings/Testimony.aspx?TID=10034&NewsID=884>.

- Lead exposure causes learning disabilities, kidney, blood, and nerve damage (children are especially vulnerable to Lead exposure); and
- Thallium can cause stomach pains, nerve damage, joint pains, and vision damage.<sup>62</sup>

In fact, of the 41 CCW constituents listed in Table 1, 31 constituents—including 22 of the 23 metals listed—were present in at least one case of proven or potential damage from CCW as identified by EPA in its report entitled *Coal Combustion Waste Damage Case Assessments*.<sup>63</sup> The only metal that was not mentioned in the CCW damage case report was Cobalt, which has known adverse human health effects (see list *supra*), and was one of thirteen in a subset of CCW constituents of potential concern specifically selected and studied by EPA due to their potential for adverse health or environmental effects from leaching ash disposal sites.<sup>64</sup> This same list of thirteen was then again utilized when EPA analyzed characteristics of CCW from electric utilities using wet scrubbers.<sup>65</sup> The other twelve constituents specifically targeted in these studies (in addition to Cobalt) are Mercury, Aluminum, Antimony, Arsenic, Barium, Boron, Cadmium, Chromium, Lead, Molybdenum, Selenium, and Thallium.

Despite the ubiquitous prevalence of at least 13 and up to 41 toxic contaminants in FGD and other coal combustion wastes, TDEC only analyzed 9 pollutants to determine whether water quality based effluent limitations (WQBELs) should be applied to the FGD discharges.<sup>66</sup> Then, TDEC flatly rejected setting WQBELs for *any* of these pollutants.<sup>67</sup> In Appendix 3, TDEC did provide calculations of effluent concentrations for Cadmium, Copper, Lead, Nickel, Silver, Zinc, Chromium III, Chromium VI, and Cyanide, after which it failed to provide effluent limitations for any of these typical CCW constituents.<sup>68</sup>

This is particularly troubling because the parameters analyzed for WQBELs in Appendix 3 were described in the draft permit as “the parameters of concern in the effluent,” yet many of the parameters elsewhere described as “parameters of concern” were *absent* from this analysis. For example, TVA’s permit application discloses that “water quality constituents of concern include metals such as arsenic, mercury, selenium, boron, cadmium, and zinc, which are in the dissolved form. In addition to metals, the obvious concern involving the limestone slurry is the discharge of inert solids containing iron and aluminum. Chlorides can also be a concern.”<sup>69</sup>

<sup>62</sup> See U.S. Dep’t of Health & Human Services, Agency for Toxic Substances & Disease Registry, *Frequently Asked Questions About Contaminants Found at Hazardous Waste Sites*, available at <http://www.atsdr.cdc.gov/toxfaq.html>.

<sup>63</sup> See EPA, *Coal Combustion Waste Damage Case Assessments* (July 9, 2007), available at [http://graphics8.nytimes.com/packages/pdf/national/07sludge\\_EPA.pdf](http://graphics8.nytimes.com/packages/pdf/national/07sludge_EPA.pdf).

<sup>64</sup> *EPA Risk Assessment*, *supra* note 4, at 2-6, tbl. 2-3.

<sup>65</sup> *EPA Characterization from Wet Scrubbers*, *supra* note 2, at xvi.

<sup>66</sup> See TVA Kingston Draft FGD NPDES Permit, *supra* note 1, at R-16, R-6.

<sup>67</sup> See generally *id.*

<sup>68</sup> See TVA Kingston Draft FGD NPDES Permit, *supra* note 1, at R-16.

<sup>69</sup> TVA Kingston Draft FGD NPDES Permit, *supra* note 1, at R-2.

Despite all of these “parameter of concern” designations, however, WQBELs were not established for any of these metals, and only three (cadmium, chromium, and zinc) were even evaluated for WQBELs.

Even more troubling is the fact that the draft permit provides another list of “parameters of concern” that includes Arsenic, Cadmium, Chromium, Mercury, Selenium, and Ammonia.<sup>70</sup> These parameters are so listed because they were *actually measured at high concentrations, several in numbers exceeding water quality criteria*, in the TVA Cumberland FGD discharges, which TVA used to analogize to expected Kingston FGD discharges.<sup>71</sup> Using TVA Cumberland discharge data as a proxy for expected Kingston discharges risks creating highly underprotective permit conditions in the TVA Kingston permit, first because the receiving waters at the Cumberland plant have not been impacted by the disaster that was the 2008 spill, and second because, even despite the differences in the receiving environment, Cumberland’s FGD discharges carry an egregious record of exceedances of Tennessee water quality criteria for several heavy metals.

The Clinch River arm of the Watts Bar Reservoir has several applicable designated uses according to TDEC: Fish and Aquatic Life, Domestic Water Supply, Industrial Water Supply, Livestock Watering and Wildlife, and Recreation (the latter of which it is unable to meet for PCBs, chlordane, and mercury).<sup>72</sup> When a waterbody is classified for more than one designated use, “the most stringent criteria will be applicable.”<sup>73</sup> TDEC acknowledged that TVA Cumberland’s FGD waste discharges exceeded Tennessee’s water quality criteria or required detection levels for several parameters of concern, yet TDEC failed to set effluent limitations for any of these parameters for the new Kingston FGD discharges. See Table 2 below.

**Table 2. Exceedances of Water Quality Criteria from TVA Cumberland FGD Discharges in TVA Kingston Permit Application for TN0080870**

<i>Parameter of Concern from Draft Permit, Page. R-3</i>	<i>Most Stringent Tennessee Water Quality Criterion</i>	<i>TVA Cumberland FGD Waste Discharge</i>
Arsenic	10 ug/L; 1 ug/L Required Detection Level (RDL)	3 ug/L
Cadmium	0.25 ug/L (hardness-dependent)	4.6 ug/L
Chromium	11 ug/L for Chromium VI; 1 ug/L RDL	7 ug/L
Mercury	0.05 ug/L	<0.05 ug/L
Selenium	5 ug/L; 2 ug/L RDL	86 ug/L

These data are compounded by the fact that Discharge Monitoring Reports (DMRs) and the most recent NPDES permit application submitted by the TVA Cumberland facility reveal significant additional water quality exceedances from Outfall 001, the Outfall discharging FGD

<sup>70</sup> TVA Kingston Draft FGD NPDES Permit, *supra* note 1, at R-3.

<sup>71</sup> See TVA Kingston Draft FGD NPDES Permit, *supra* note 1, at R-3.

<sup>72</sup> Saya Ann Qualls, Chief Engineer, TDEC, *Public Hearing Powerpoint Presentation: Draft NPDES Permit TVA Kingston Fossil Plant Flue Gas Desulfurization*, Roane County Courthouse, June 8, 2009, at Slide 8 of 15.

<sup>73</sup> Tenn. Comp. R. & Regs. § 1200-4-3-.02(5) (2009).

wastes, including exceedances of Tennessee’s water quality criteria for recreational uses for mercury and selenium *every quarter* in 2008. See Table 3.

**Table 3. Select Exceedances of Water Quality Criteria from TVA Cumberland Outfall 001 (FGD Discharges) from TVA Cumberland DMRs in 2008<sup>74</sup>**

<i>Parameter of Concern from Draft Permit, Page. R-3</i>	<i>Most Stringent Tennessee Water Quality Criterion</i>	<i>National Recommended Water Quality Criteria (Freshwater Chronic)</i>	<i>Date of DMR Reading</i>	<i>TVA Cumberland FGD Waste Discharge</i>
Mercury	0.05 ug/L	0.77 ug/L	12/31/2008	1.2 ug/L
Selenium	5 ug/L	5 ug/L	12/31/2008	98 ug/L
Mercury	0.05 ug/L	0.77 ug/L	9/30/2008	0.3 ug/L
Selenium	5 ug/L	5 ug/L	9/30/2008	54 ug/L
Mercury	0.05 ug/L	0.77 ug/L	6/30/2008	0.2 ug/L
Selenium	5 ug/L	5 ug/L	6/30/2008	25 ug/L
Mercury	0.05 ug/L	0.77 ug/L	3/31/2008	0.8 ug/L
Selenium	5 ug/L	5 ug/L	3/31/2008	76 ug/L

In addition, the most recent permit application for the TVA Cumberland plant revealed selenium discharges from Outfall 001 (FGD discharges) at a maximum daily value of 130 ug/L, and a long term average value (using six analyses) of 44 ug/L, despite the applicable Tennessee water quality criterion of 5 ug/L.<sup>75</sup> Although these water quality criteria are not enforceable at the end of pipe unless they are incorporated into the permit, the discharge of these heavy metals in levels this high warrant placing limitations on these metals. Despite the degree or sheer number of these exceedances from the TVA Cumberland FGD discharges, especially for selenium, the draft permit fails to explain how TDEC justifies not setting effluent limits, *or even monitoring requirements* (see Section VI), for any of these metals (except for mercury monitoring), or the other CCW constituents that it failed to even include on Appendix 3.

Under the Clean Water Act, TDEC must impose effluent limits for *all* pollutants including metals and total dissolved solids (TDS) that will be discharged from TVA’s FGD system.<sup>76</sup> TDEC must reevaluate all 41 CCW constituents to determine whether WQBELs should be imposed in light of the additional heavy metals and other contaminants currently in the river from the 2008 spill, and considering the typically high concentrations of these metals in FGD wastes. TDEC must then set effluent limitations accordingly, or at least provide full justifications for why no effluent limitations were required for these metals.

<sup>74</sup> TVA, Discharge Monitoring Reports from the TVA Cumberland Power Plant (2008) (attached as Exhibit 2).

<sup>75</sup> TVA, Form 2C Application for Permit to Discharge Wastewater from the Cumberland Power Plant, NPDES Permit No. TN005789, at V-3 (May 23, 2005) (attached as Exhibit 3).

<sup>76</sup> See 33 U.S.C. § 1311(b)(2).

#### **IV. The “Water Quality Limited” Clinch River is Ineligible for Additional Discharges of Mercury Under the Tennessee Rules, So the Permit Must Require An Effluent Limit for Mercury of Zero.**

The Clinch River is listed as impaired on TDEC’s 2008 Draft Section 303(d) List due to pervasive contamination from mercury, chlordane, and PCBs, and is therefore ineligible for *any* new discharges for any of these parameters. We are particularly concerned that TDEC’s draft permit does not propose any effluent limitations on mercury, as mercury is frequently listed among contaminants that are heavily concentrated in FGD waste.<sup>77</sup>

Under the Tennessee Rules, whenever a waterbody meets the definition of “unavailable waters,” “new or increased discharges of a substance that would cause or contribute to a condition of impairment will not be allowed.”<sup>78</sup> The Clinch River meets the definition of “unavailable conditions,” which exist “where water quality is at, or fails to meet, the criterion for one or more parameters.”<sup>79</sup> The Clinch River has been placed on Tennessee’s 303(d) list because it exceeds applicable water quality criteria necessary to support at least one designated use of the River (in this case, Recreation uses for fishing are not being achieved), for mercury, chlordane, and PCBs.<sup>80</sup> Waters will be placed on an authorized state’s Clean Water Act Section 303(d) list when “the effluent limitations required by [section 1311(b)(1)(A) and section 1311(b)(1)(B) of the Clean Water Act] are not stringent enough to implement any water quality standard applicable to such waters,” so placement on the 303(d) means the Clinch River arm of the Watts Bar Reservoir is exceeding the water quality criteria established to comply with water quality standards.<sup>81</sup> Therefore, the Clinch River contains “unavailable conditions” for additional discharges of parameters in exceedance, and an effluent limit of zero must be imposed for mercury.<sup>82</sup>

#### **V. TDEC Should Require Weekly or Monthly Monitoring for Mercury, As Well As Monthly Monitoring for All Additional FGD Contaminants of Concern, at Outfalls 01A & 002.**

TDEC’s draft permit for the TVA Kingston plant’s FGD wastes must require monthly monitoring of Mercury, as well all the typical CCW constituents of concern, from the plant’s FGD wastes. In the draft permit, TDEC proposes to require monitoring only for Flow, Oil and

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<sup>77</sup> See *supra* Part III.

<sup>78</sup> Tenn. Comp. R. & Regs. § 1200-4-3-.06(2) (2009).

<sup>79</sup> *Id.*

<sup>80</sup> TVA Kingston Draft FGD NPDES Permit, *supra* note 1, at R-3.

<sup>81</sup> See 33 U.S.C. § 1313(d) and implementing regulations.

<sup>82</sup> Although Tennessee rules 1200-4-3-.04(4) provide for a *de minimis* exception for discharges that are “temporary or for a short duration,” the Permit application for discharge into the Clinch River indicates that the discharge is neither temporary nor for a short duration as defined by the rule. Therefore, this waterway is not qualified to accept any additional mercury, chlordane, or PCBs. If TDEC determines that the input would be *de minimis* it should provide justification for that determination in the draft permit.

Grease, Total Suspended Solids (TSS), pH, and Mercury, and Mercury is required only to be monitored on a quarterly basis for one year. TDEC is proposing authorization of discharges of over 1 million gallons per day of FGD waste, into a River impacted by the spill of over 5.4 million cubic yards of fly ash less than seven months ago, without even requiring monitoring of any of the constituents likely contained in the additional CCW discharges. Such an authorization flies in the face of environmental protection and potentially leaves an already devastated community in danger of even more significant environmental harm. TVA Kingston's Draft FGD NPDES permit, if authorized, must at the very least require monthly monitoring of the typical and most potentially dangerous FGD contaminants—Aluminum, Antimony, Arsenic, Barium, Boron, Cadmium, Chromium, Cobalt, Lead, Mercury, Molybdenum, Selenium, and Thallium.<sup>83</sup>

TVA submitted data from its Cumberland facility to TDEC to support the draft Kingston NPDES permit.<sup>84</sup> Cumberland began using FGD in 2005.<sup>85</sup> However, both the effluent data submitted to TVA for the Kingston permit application and Discharge Monitoring Reports (DMRs) from the TVA Cumberland plant show that Cumberland routinely discharges elevated amounts of Selenium, a dangerous FGD contaminant.<sup>86</sup> In addition, as recently as December 31, 2008, Cumberland reported high discharges of Mercury.<sup>87</sup> *See supra* Section III, Tables 2 and 3. Also, water monitoring data from TVA shows additional evidence that Cumberland has discharged FGD contaminants at levels above Federal Recommended Water Quality Criteria and Tennessee's Water Quality Criteria. For example, a review of Cumberland NPDES submittals and monitoring data reveal that Cumberland exceeded both state and federal Water Quality Criteria for Aluminum, Arsenic, Manganese, and Selenium.<sup>88</sup> Specifically, Cumberland's Arsenic discharge was over *21 times greater* than Federal Recommended Water Quality Criteria for Human Health Consumption from Fish. Similarly, Cumberland's Selenium discharge was *26 times greater* than Federal Recommended and State Water Quality Criteria for Fish and Aquatic Life (freshwater chronic).<sup>89</sup>

The prevalence of exceedances of Tennessee water quality criteria from TVA Cumberland's FGD wastewaters supports imposing monitoring requirements for all parameters of concern; TDEC's decision to monitor only one metal, mercury, on merely a quarterly basis, is not supported by the facts. If Cumberland is an indicator of likely FGD discharges from

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<sup>83</sup> *See EPA Risk Assessment, supra* note 4; *EPA Characterization from Wet Scrubbers, supra* note 2.

<sup>84</sup> *See* TVA Kingston Draft FGD NPDES Permit, *supra* note 1, at R-3.

<sup>85</sup> *See* TVA, Cumberland Sulfur Emissions, available at <http://www.tva.gov/environment/air/ontheair/cumberland.htm>.

<sup>86</sup> *See* TVA, Discharge Monitoring Data for the Cumberland Power Plant, Selenium Discharges (Monitoring dates: 3/31/2005; 6/30/2005; 9/30/2005; 12/31/2005; 3/31/2008; 6/30/2008; 9/30/2008; 12/31/2008) (attached as Exhibit 2).

<sup>87</sup> *See* TVA, Discharge Monitoring Data for the Cumberland Power Plant, Mercury Discharges (Monitoring date 12/31/08) (attached as Exhibit 2).

<sup>88</sup> *See* Environmental Integrity Project, *Water Quality Exceedances at TVA Facilities* (Mar. 31, 2009), available at <http://www.environmentalintegrity.org/generatePub.cfm?pubID=614>.

<sup>89</sup> *Id.*

Kingston, as TDEC and TVA have suggested, TDEC must require monitoring and effluent limitations at Kingston for FGD pollutants that Cumberland discharges in excess of water quality criteria.

#### **VI. TDEC Must Not Suspend Mercury Water Monitoring at Kingston After One Year.**

TDEC proposes to allow TVA to monitor for Mercury on a quarterly basis for one year. Four samples from Outfall 01A do not provide enough data on which to suspend or continue Mercury monitoring, and do not provide any data about the quantity of Mercury discharging into the Clinch River from Outfall 002. Furthermore, Mercury is a “pollutant of concern” because the Clinch River arm of the Watts Bar Reservoir has been listed as an “impaired” water under Section 303(d) of the Clean Water Act because it is unable to meet its water quality standards due to mercury contamination.<sup>90</sup> As Mercury is a metal of concern, TDEC should require weekly or at least monthly monitoring for Mercury at both Outfall 01A and Outfall 002. Weekly or monthly monitoring will give TDEC data sufficient to manage and enforce Mercury levels from the Kingston facility. Weekly or monthly monitoring will also provide a comprehensive picture of Mercury discharges from Kingston during different operating conditions and timeframes, and help prevent further impairment of the Clinch River.

Furthermore, at the close of the one-year quarterly monitoring period, TDEC proposes to give itself discretion to decide whether or not Mercury monitoring should be continued. Specifically, TDEC states that “the need for continued monitoring will be evaluated by the Division.”<sup>91</sup> This ambiguous monitoring term does not meet Tennessee’s mandate to protect the waters of the state and sharply reduce the discharge of pollutants. The Tennessee Water Quality Control Act clearly states its purpose “to abate existing pollution of the waters of Tennessee, to reclaim polluted waters, to prevent the future pollution of the waters, and to plan for the future use of the waters so that the water resources of Tennessee might be used and enjoyed to the fullest extent consistent with the maintenance of unpolluted waters.”<sup>92</sup>

Yet TDEC’s proposal to give itself discretion to decide whether Mercury monitoring should continue after only four quarterly monitoring reports leaves open the possibility that TDEC could decline further Mercury monitoring at Kingston even if the Mercury levels at Outfall 01A are over current effluent limitations. TDEC’s decision to give itself discretion to decide whether Mercury monitoring should continue also leaves open the possibility that TDEC may delay this decision, leaving Mercury unmonitored in the interim as there is no requirement that TVA continue monitoring for Mercury after one year. TDEC’s failure to define the bounds of its discretion to suspend Mercury monitoring also leaves open the possibility that TDEC will decide on the basis of non-public information, without public review or opportunity for appeal.

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<sup>90</sup> TVA Kingston Draft FGD NPDES Permit, *supra* note 1, at R-3.

<sup>91</sup> TVA Kingston Draft FGD NPDES Permit, *supra* note 1, at 1.

<sup>92</sup> Tennessee Water Quality Control Act of 1977, Tenn. Comp. R. & Regs. § 69-3-102(b) (2009).

In the wake of the devastating December 2008 spill, TDEC must clearly define its authority if it is going to exempt Kingston from important Mercury monitoring requirements, by providing a transparent decision making process and timeline that allows for community input and accountability. The impairment of the Clinch River due to mercury contamination, the further devastation of the River from the December 2008 spill, and the fact that discharges of mercury evidenced in the TVA Cumberland FGD waste discharges called for TDEC to characterize mercury as a “parameter of concern” in Kingston’s draft FGD permit all warrant monthly or weekly monitoring of mercury discharges from Outfalls 01A and 002 for the life of the FGD permit.

## **VII. Outfall 002 Needs the Same Effluent Limitations as Outfall 01A.**

Outfall 002 is the actual discharge point into the Clinch River. Outfall 01A is a preliminary outfall, and was previously characterized by TVA as an internal monitoring point in its NPDES renewal application.<sup>93</sup> To actually measure the amounts and concentrations of heavy metals entering the Clinch River, TDEC must require monitoring at Outfall 002. The existing limits for Outfall 002 are grossly insufficient for an outfall discharging FGD waste directly into a waterway. For example, the only monitoring requirements for Outfall 002 are flow, pH, temperature, and chlorine (for total residual oxidant).<sup>94</sup> No metals are tested at Outfall 002.

Although TDEC states that the permit “has considered the relationship between this discharge, the larger release of fossil plant cooling water, and a proposed release of dredging effluent from an ash processing area being developed in response to the December 2008 spill,” it is not revisiting the effluent limits of Outfall 002 in Kingston’s current NPDES permit.<sup>95</sup> The additional discharges contemplated in draft FGD NPDES permit TN0080870 warrant making modifications to existing NPDES Permit No. TN0005452 for the TVA Kingston plant. TDEC *must* revise revisit the effluent limitations and monitoring requirements from existing Outfall 002 by reevaluating and modifying the requirements for Outfall 002 contained in NPDES Permit No. TN0005452 in order to accurately monitor the impacts on water quality caused by the FGD discharges.

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<sup>93</sup> TVA, Form 1 Application for Permit to Discharge Flue Gas Desulfurization Wastewater from the Kingsotn Fossil Plant, Cover Letter to Ms. Saya Qualls, Pe., at 1 (Feb. 13, 2009).

<sup>94</sup> TDEC, Authorization to Discharge Under the National Pollutant Discharge Elimination System (NPDES), Issued to TVA for the TVA-Kingston Fossil Plant, NPDES Permit No. TN0005452 at 2 of 22 (issued Aug. 1, 2003) (this permit expired on Aug. 31, 2008).

<sup>95</sup> See TVA Kingston Draft FGD NPDES Permit, *supra* note 1, at R-3.

## VIII. Conclusion

For the foregoing reasons, we respectfully request that TVA undertake a new Environmental Assessment pursuant to NEPA prior to obtaining authorization for additional discharges of FGD wastes, and that TDEC undertake all additional analysis necessary to set stringent effluent limits to prevent further degradation of water quality from the TVA Kingston plant.

Sincerely,



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