

**BEFORE THE ARKANSAS POLLUTION CONTROL
AND ECOLOGY COMMISSION**

**IN RE: REQUEST BY ALCOA INC. TO)
INITIATE RULEMAKING TO)
AMEND REGULATION NO. 2)**

DOCKET NO. _____

**PETITION TO INITIATE THIRD-PARTY
RULEMAKING TO AMEND REGULATION NO. 2**

Petitioner, Alcoa Inc. (“Alcoa”), for its Petition to Initiate Third-Party Rulemaking to Amend Regulation No. 2 (“Petition”) states:

1. The Petition is submitted pursuant to Arkansas Pollution Control and Ecology Commission (“APCEC” or “the Commission”) Regulation No. 2, § 2.306, APCEC Regulation No. 8, § 8.809, the Continuing Planning Process, and Alcoa’s NPDES Permit No. AR0000582, Section IB. As set forth more fully below in paragraph 20, Alcoa is requesting a temporary modification to the chronic water quality standard for selenium in Holly Creek to reflect current and historic conditions in Holly Creek during the term of an Environmental Improvement Project (“EIP”). The EIP is authorized by the Arkansas Department of Environmental Quality (“ADEQ”) pursuant to Ark. Code Ann. § 8-5-901 *et seq.* and by APCEC Regulation No. 2, § 2.105 and Appendix B and is required by Alcoa’s NPDES Permit.

2. This Petition is submitted in connection with Alcoa’s EIP. The provision for EIPs was first adopted by the Arkansas Legislature as Act 401 of 1997, now codified at Ark. Code Ann. § 8-5-901 *et seq.* The stated purpose of the legislation creating EIPs is to encourage long-term environmental projects which are of such magnitude that more than 3 years will be required to complete the project. Following passage of Act 401 of 1997, APCEC adopted an amendment

to APCEC Regulation No. 2 at § 2.105 and incorporated the terms of the statute into APCEC Regulation No. 2 at Appendix B.

3. The EIP process is a two-step procedure which requires 1) ADEQ approval of a Notice of Intent (“NOI”) and a remediation plan, and 2) a third-party rulemaking process before the Commission to obtain a temporary modification of the water quality standard for the affected stream while the remediation plan is being conducted.

4. Alcoa has received ADEQ approval of the NOI and remediation plan described in paragraph 18, below and is now seeking a temporary modification of the chronic water quality standard for selenium in Holly Creek, all as described more fully below in paragraphs 18 through 20.

5. Alcoa is not seeking a change in what are current and historic water quality conditions in Holly Creek; rather it seeks a temporary modification to the chronic water quality standard for selenium as it carries out the EIP. The selenium concentrations in Holly Creek are believed to represent historical conditions and not a recent change in stream conditions.

6. Alcoa and its wholly-owned subsidiary, Reynolds Metals Company (“Reynolds”) together own approximately 12,000 acres in central Arkansas on which they conducted bauxite mining and refining operations: Alcoa from 1897 to 1990 and Reynolds from 1945 to 1984. Prior to and since acquiring Reynolds in 2000, Alcoa’s primary function since the cessation of their mining and refining activities has been to manage the acreage including the collecting, storing, treating and discharging of stormwater and wastewater from the property under the authority of NPDES Permit No. AR0000582. Alcoa has a long history of compliance with its NPDES permit.

7. Alcoa discharges an average of 2.5 billion gallons of water from the property annually with the actual volume of water discharged ranging from 1.5 billion to 4.5 billion gallons annually. The majority (approximately 75%) of this water is discharged into Holly Creek from Outfall 009.

8. Holly Creek has a watershed of 10.6 square miles and is located in the Gulf Coastal ecoregion of Arkansas. Holly Creek is a small intermittent stream that begins at Outfall 009 and flows for approximately 3.4 miles entirely on Alcoa's property before emptying into the Saline River. The flow in the creek ranges from 0 gallons per minute to in excess of 30,000 gallons per minute depending upon rainfall and/or Alcoa's discharge. As documented by a 1995 Use Attainability Analysis ("UAA") approved by ADEQ and EPA, Holly Creek has an existing fishery which is habitat limited; however, without Alcoa's discharge, the creek would consist only of small pools during the dry portions of the year.

9. Selenium is a naturally occurring element which is found in bauxite ore. The processing of the bauxite ore concentrated the non-alumina constituents (including the selenium), and created an alkaline residue which was historically deposited into bauxite residue disposal areas ("BRDAs"). Selenium is mobilized under the alkaline conditions of the residue.

10. There are two (2) BRDAs on the property which are not contiguously located but which together cover approximately 1,000 total surface acres. Under agreements with ADEQ, the BRDAs were closed in the late 1980's (Reynolds) and late 1990's (Alcoa). Although the BRDAs are closed, a portion of the rain that falls on them percolates through the soil covers, contacts the alkaline residue, and produces an alkaline leachate which is collected through a leachate collection system, treated in earthen basins by neutralization/participation, and then discharged under the terms of the NPDES permit.

11. In 1998, APCEC adopted selenium standards of 20 µg/l (acute) and 5 µg/l (chronic). During the 2000 NPDES permit renewal process Alcoa discovered selenium in its discharge above the chronic standard allowed by the APCEC Regulation No. 2. Prior to this time there was no selenium standard in Arkansas and analytical technology was not available to accurately measure the concentration of selenium found in Alcoa's discharge.

12. Upon discovery of the selenium Alcoa contacted ADEQ and EPA and conducted a site-wide investigation which concluded that the BRDAs were the primary source of the selenium. Selenium in the Outfall 009 discharge to Holly Creek is typically less than the acute water quality criterion (20 µg/l) but exceeds the chronic water quality criterion (5 µg/l) with values that range from less than 5 µg/l to 23 µg/l.

13. Since discovery that the selenium concentration was above the chronic water quality standard, Alcoa has continuously sought ways to reduce the source of the selenium and to modify the treatment system to reduce the concentration to levels at or below the chronic water quality standard. Because of the large volume of water to be treated, the relatively low levels of selenium in the discharge, and the form of selenium in the discharge, there are currently no known technically and economically feasible biological or chemical treatments capable of reducing the selenium concentration to levels that meet the chronic water quality standard.

14. The existing selenium standards are currently under review by EPA and it is likely that they will change during the course of the EIP.

15. On September 30, 2008, ADEQ renewed Alcoa's NPDES permit. The permit set a selenium limit of 17 µg/l for Outfall 009 and required Alcoa to submit an EIP and, following approval of the EIP by ADEQ, file the instant Petition for Third Party Rulemaking to modify the selenium standard for Holly Creek.

16. Selenium concentrations in fish taken from Holly Creek are often above that which the literature suggests should cause reproductive effects. However, Holly Creek does support a fishery which includes spotted bass, bluegill sunfish, longear sunfish, and mosquito fish. Further, observations support that a reproducing bluegill fishery exists in Alcoa's No. 3 treatment pond and in Holly Creek's headwaters below Outfall 009.

17. Holly Creek discharges into the Saline River. Monitoring in the Saline River both upstream and downstream of its confluence with Holly Creek conducted since Alcoa's discovery of the selenium issue demonstrates that the Saline River's existing and designated uses are being met and that the selenium concentrations in the water column and fish tissue are at near background levels. Further, a mussel survey in the Saline River below its confluence with Holly Creek revealed a healthy mussel population.

18. The remediation plan which will occur over the life of the EIP is to take appropriate actions to develop and implement an economically and technically feasible water treatment technology or technologies and/or source reduction strategy or strategies to reduce the selenium concentration in Alcoa's discharge so that the applicable chronic water quality standard for selenium in Holly Creek can be met. This will be accomplished by continuing to evaluate through research, bench-scale studies, and pilot studies those options that show promise in terms of viable selenium reduction. Options for source reduction, treatment of selenium at its source, treatment after mixing the leachate with the acid mine drainage, and treatment at the discharge are being considered.

19. At the end of the EIP, Alcoa's discharge will meet the applicable chronic water quality standard for selenium. The overarching goals of the EIP are to 1) protect water quality in the streams receiving Alcoa's discharge; and 2) ensure that Alcoa's discharge is in compliance

with local, state and federal statutes and regulations. Under the schedule approved by ADEQ, Alcoa will submit annual reports to the Commission reporting on the status of treatability efforts, the status of selenium source mitigation efforts and the progress toward ultimate permit compliance with the chronic selenium standard. *See*, Overall Schedule, Exhibit F, pp 9-1 through 9-6.

20. Through this Petition Alcoa is requesting that the Commission amend APCEC Regulation No. 2 to establish a chronic selenium standard of 17 µg/l for Holly Creek for the life of the EIP or until such time as a technically and economically feasible treatment or source reduction technology can be developed. A redline version of APCEC Regulation No. 2 showing the proposed change is attached hereto as Exhibit A and incorporated herein by reference.

21. A copy of the Legislative Questionnaire is attached hereto as Exhibit B and incorporated herein by reference.

22. A copy of the Financial Impact Statement is attached hereto as Exhibit C and incorporated herein by reference.

23. On July 12, 2010, a copy of the redlined version of APCEC Regulation No. 2 showing the proposed change and the Economic Impact Statement of Proposed Rules or Regulations/EO 05-04: Regulatory Flexibility form setting forth the absence of any effect or impact on any small business was submitted to the Arkansas Economic Development Commission (AEDC) in compliance with Act 143 of 2007. A copy of the submission to AEDC is attached hereto as Exhibit D. More than ten (10) days have elapsed since submission of the information to AEDC. The letter of review regarding the applicability of Act 143 of 2007 from AEDC will be submitted when and if it is received.

24. A copy of the Economic Impact/Environmental Benefit Analysis required by APCEC Regulation No. 8, § 8.812 is attached hereto as Exhibit E and incorporated herein by reference.

25. A copy of Alcoa's Environmental Improvement Project Notice of Intent is attached hereto as Exhibit F and incorporated herein by reference.

26. A copy of the proposed Minute Order to initiate rulemaking is attached as Exhibit G and incorporated herein by reference.

27. In compliance with the EIP statute and Regulation No. 2, the Environmental Improvement Project Notice of Intent was published for public comment in February, 2010. The US Fish and Wildlife Service ("USFWS") submitted a comment and in a meeting between Alcoa and USFWS following the public comment period, USFWS requested that Alcoa prepare and submit a plan for monitoring selenium exposure in birds and mussels in the Saline River as a part of the EIP. Thereafter, Alcoa submitted a Saline River Biomonitoring Survey Plan for Selenium Exposure in Birds and Mussels to USFWS which approved the submitted plan with the request that it be provided with a technical memorandum with summary tables and appended lab reports following the survey. On August 6, 2010 the Saline River Biomonitoring Survey Plan for Selenium Exposure in Birds and Mussels, revised per the USFWS request, was submitted to USFWS and ADEQ. A copy of the Saline River Biomonitoring Survey Plan for Selenium Exposure in Birds and Mussels is attached as Appendix E to the Alcoa Environmental Improvement Project Notice of Intent (Exhibit F) and incorporated herein by reference.

28. This Petition is supported by the following:

- There is not a currently known economically and technically feasible water treatment technology or source reduction strategy to reduce the selenium in

Alcoa's discharge enough to meet the chronic water quality standard for selenium.

- Performing the necessary research, development and implementation of economically and technically feasible water treatment technologies and/or source reduction strategies is the logical approach to reducing selenium in the discharge while maintaining the existing fishery in Holly Creek.
- The regulatory basis for the EIP-based temporary modification of the chronic selenium water quality standard is provided in 40 CFR 131.10(g), three factors of which are applicable to the Alcoa site:
 - 40 CFR 131.10(g)(3) Human caused conditions or sources of pollution prevent the attainment of the use and cannot be remedied or would cause more environmental damage to correct than to leave in place;
 - 40 CFR 131.10(g)(5) Physical conditions related to the natural features of the water body, such as the lack of proper substrate, cover, flow, depth, pools, riffles and the like, unrelated to water quality, preclude attainment of aquatic life protection uses;
 - 40 CFR 131.10(g)(6) Controls more stringent than those required by section 301(b) and 306 of the Act would result in substantial and widespread economic and social impact.
- 40 CFR 131.11(b)(1)(ii) provides states with the opportunity to adopt water quality criteria that are "modified to reflect site-specific conditions."

WHEREFORE, Alcoa requests that the Commission initiate a rulemaking to amend APCEC Regulation No. 2, and amend Regulation No. 2 in the manner requested in paragraph 20, above.

Respectfully submitted,

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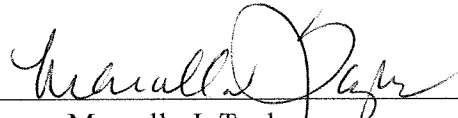
Marcella J. Taylor, AR Bar No. 82156

Counsel for Alcoa Inc.

CERTIFICATE OF SERVICE

I hereby certify that on this 3rd day of September, 2010, I served a copy of the foregoing Petition to Initiate Third-Party Rulemaking to Amend Regulation No. 2 on the following by United States Postal Service, postage prepaid:

Dawn Guthrie, Esq.
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Marcella J. Taylor