BEFORE THE ARKANSAS POLLUTION CONTROL AND ECOLOGY COMMISSION

IN RE:	**REQUEST BY THE SOUTHWESTERN ELECTRIC POWER COMPANY TO INITIATE RULEMAKING TO AMEND REGULATION NO. 2**	))))	**DOCKET NO. _____**

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

Petitioner, Southwestern Electric Power Company, for its Petition to Initiate Third-Party Rulemaking to Amend Arkansas Pollution Control and Ecology Commission Regulation No. 2 ("Petition") states:

1. This Petition is submitted pursuant to Arkansas Pollution Control and Ecology Commission ("APCEC" or "the Commission") Regulation No. 2, §§ 2.303 and 2.308, APCEC Regulation No. 8, § 8.809, and the Arkansas Department of Environmental Quality's ("ADEQ" or "the Department") Continuing Planning Process. As set forth more fully below in paragraph 17, Southwestern Electric Power Company ("SWEPCO") is requesting the following site-specific water quality standards modifications in Hempstead, Little River, Miller and Lafayette Counties:

a. site-specific modification of the total dissolved solids ("TDS") water quality criterion and removal of the designated, but not existing, drinking water use for a portion of the Red River from the mouth of the Little River to the Arkansas/Louisiana state line; and

b. site-specific modifications of the TDS and temperature water quality criteria for a portion of the Little River from Millwood Lake to the Red River.

2. SWEPCO owns and operates the John W. Turk, Jr. Power Plant ('the facility") which discharges treated wastewater from an outfall to the Little River under the provisions of NPDES Permit No. AR0051136 issued by ADEQ. The Little River flows approximately 2 miles from the facility's discharge to the Red River. The treated wastewater discharged by the facility is from a wastewater pond containing primarily cooling tower blowdown and previously monitored low volume waste. The facility's NPDES permit includes effluent limitations for TDS and daily maximum temperature which are based upon the water quality criteria in the Little River from Millwood Lake to the Red River and in the Red River from the mouth of the Little River to the Arkansas/Louisiana state line.

3. The Little River and the Red River are located within the Gulf Coastal Plain Ecoregion. The current TDS criterion for the Red River from the Arkansas/Oklahoma state line to Arkansas/Louisiana state line depends on whether it is upstream of the mouth of the Little River (850 mg/L) or downstream of the mouth of the Little River (500 mg/l). *See paragraph 5, below.* The current TDS criterion for the Little River from Millwood Lake to its confluence with the Red River is 100 mg/L. The current temperature criterion for the Little River from Millwood Lake to the Red River is 30° C (86° F).

4. The designated uses for the segments of the Little River and the Red River which are the subject of this Petition as set forth in Regulation No. 2 are:

a. Little River from Millwood Lake to the Red River -- fisheries, primary and secondary contact recreation, and domestic, agricultural, and industrial water supplies.

b. Red River from the Arkansas/Oklahoma state line to the mouth of the Little River -- fisheries, primary and secondary contact recreation, and agricultural and industrial water supplies. (*see footnote 2, page 3 and ¶ 15, pages 6-7 below.)*

c. Red River from the mouth of the Little River to the Arkansas/Louisiana state line -- fisheries, primary and secondary contact recreation, and domestic, agricultural, and industrial water supplies.

5. The Red River, which forms a portion of the border between Texas and Oklahoma before flowing into Arkansas and then into Louisiana, is known to contain elevated levels of total dissolved solids caused primarily by input from natural salt springs and seeps in Oklahoma and Texas.[1] The states of Texas, Oklahoma, Arkansas and Louisiana each have established TDS criterion for the river. As it enters Arkansas, the Red River has a Texas TDS criterion of 1,100 mg/L and an Oklahoma TDS criterion of 1,220 mg/L. The TDS criterion for the Red River in Louisiana is 780 mg/L. The TDS criterion for the segment of the Red River in Arkansas from the Arkansas/Oklahoma state line to the mouth of the Little River is 850 mg/L and from the mouth of the Little River to the Arkansas/Louisiana state line is 500 mg/L.[2] Thus, the TDS criterion, even within the state of Arkansas, is spatially inconsistent.

6. The temperature water quality criterion on the Little River between Millwood Lake and the Red River is likewise spatially inconsistent with the temperature criterion for Millwood Lake and the Red River. The temperature criterion for Millwood Lake and for the Red River is 32° C (89.6° F) while the Little River between Millwood Lake and the Red River has a lower temperature criterion of 30° C (86° F). There is no scientific or physical justification for the lower temperature criterion for this reach of the Little River.

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[1] Over the last five decades the US Corps of Engineers has done considerable work to limit the amount of dissolved minerals that enter the Red River, but even with that effort, the dissolved minerals concentrations in the Red River as it enters Arkansas remain considerably elevated.

[2] The TDS criterion for the upper segment of the Red River (from the Arkansas/Oklahoma state line to the mouth of the Little River) was established in a prior Third-Party Rulemaking based on a Use Attainability Analysis (AquAe Ter 1994). The Rulemaking also removed the domestic drinking water use designation for this segment of the Red River.

7. The segment of the Red River into which the Little River flows is listed as impaired for TDS and chlorides in the Arkansas 2008 303(d) list.[3] The consequence of the listing is that the limitations set in the facility's NPDES permit adversely impacts the operations of the facility preventing it from operating as designed despite the fact that the facility's discharge at full operation will have virtually no effect on the concentration of dissolved minerals in the Red River or on the aquatic life in the river.

8. The TDS criterion in the Red River is a site-specific value of 500 mg/L. An analysis of the TDS water quality data of the Red River shows that TDS concentrations in the river segment from the mouth of the Little River to the Arkansas/Louisiana state line historically exceeded the Arkansas TDS criterion. The TDS criterion in the Little River between Millwood Lake and the Red River (100 mg/L) is below the Ecoregion Reference Steam Value of 123 mg/L. (*see Regulation No. 2, 2.511(B)*). Data collected during the study supporting this Petition confirm that the current 100 mg/L TDS criterion is exceeded due to naturally occurring conditions.

9. Analysis of the water quality data for the Little River shows that the segment from Millwood Lake to the Red River exceeds its temperature criterion due to natural conditions. The temperature criterion of 30° C (86° F) is based upon Gulf Coastal Plain ecoregion reference stream data, but the Little River below Millwood Lake is dissimilar to the small, shaded reference streams used to establish the ecoregion criterion. The Little River below Millwood Lake is wide, primarily unshaded and exposed to the sun and ambient heating. Additionally, it receives water from Millwood Lake which is a shallow reservoir particularly subject to ambient heating. Historic temperature measurements of the Little River below Millwood Lake show

[3] The 2008 Arkansas 303(d) list is the last such list approved by EPA. The Arkansas draft 2010 and 2012 303(d) lists did not include the chloride impairment and the draft 2014 lists removed the TDS impairment because of the completion of a TMDL in 2013.

exceedances of the 30° C (86° F) criterion frequently enough to allow it to be listed as impaired for temperature unless the criterion is changed.[4]

10. SWEPCO undertook a Use Attainability Analysis ("UAA") and a site-specific temperature study to: (a) determine the existing and attainable uses in the Little River and Red River; (b) determine if the conditions support the existing and attainable uses in those waterbodies; and (c) evaluate the options for permit compliance, including treatment, alternative discharge location, and site specific minerals and temperature criteria.

11. On January 17, 2014, the UAA, entitled *Southwestern Electric Power Company Use Attainability Analysis for Dissolved Minerals in Little and Red Rivers Hempstead & Little River Counties, Arkansas* was submitted to ADEQ. After consultation with ADEQ, a revised UAA was submitted to ADEQ on September 5, 2014. The revised UAA is attached hereto as Exhibit F. On January 17, 2014, the site-specific temperature study, entitled *Southwestern Electric Power Company Technical Justification for a Site-Specific Temperature Criterion in the Little River Hempstead & Little River Counties, Arkansas* was submitted to ADEQ. After consultation with ADEQ, a revised site-specific temperature study was submitted to ADEQ on September 10, 2014. The revised site specific temperature study is attached hereto as Exhibit G.

12. The UAA and the Site-specific Temperature Study included field studies to evaluate the physical, chemical and biological characteristics of the affected stream segments, toxicity testing, an engineering analysis of alternatives for discharge and treatment, and an analysis of designated uses for the Little River and the Red River.

13. SWEPCO prepared a technical and economic evaluation of possible alternatives to amendment of the TDS water quality criteria. The alternatives for management of effluent to reduce TDS are limited and include distillation treatment, pumping the wastewater to a larger

[4] This segment is classified by ADEQ in the 2008 303(d) List as "unassessed" due to lack of data for water quality.

stream with the potential for dilution of the minerals, treatment via a constructed wetland, and reverse osmosis (RO). Distillation treatment was excluded because RO is generally preferable to distillation treatment where the feedwater has an initial TDS concentration of 30,000 mg/L or less and because there are no economic benefits to distillation treatment compared to RO. Use of a constructed wetland was excluded because it would reduce only the sulfate component of the TDS and would result in no net reduction of TDS. Building a pipeline and pumping the facility's discharge to a larger stream was excluded because the "larger stream" is the Red River with its TDS criterion of 500 mg/L which would still require the completion of a UAA or the installation of partial RO treatment. Use of RO was therefore fully evaluated. Aside from the fact that the technology generates a concentrated brine that is environmentally difficult and costly to dispose of, RO is economically infeasible. Three different RO scenarios were evaluated. The evaluation demonstrated that the initial capital costs of RO ranged from $5.1 million to $6.9 million, and the annual operating and disposal costs of RO ranged from $2.66 million to $3.92 million.

14. SWEPCO also prepared a technical evaluation of possible alternatives to amendment of the temperature criterion for the Little River to reflect ambient conditions. The only alternative identified was to petition the US Corps of Engineers to release more water from the bottom of Millwood Lake using the two sluice gates which would release from the bottom of the lake. Millwood Lake however is shallow with an average depth of 5 feet and has a short residence time—as short as approximately 15 days. Because of these factors, the temperature difference between the surface of Millwood Lake and the lake bottom is as small as 2.3° C (4.1° F) during the warmer summer months. Further, because of the shallowness of the lake, the slightly cooler water near the bottom of the lake would be quickly depleted if the sluice gates remained open for extended periods. Release of water from the bottom of Millwood Lake would

have no extended benefit. Thus there is no alternative to a site-specific temperature criterion modification.

15. The domestic water supply use for the upper portion of the Red River in Arkansas (between the Arkansas/Oklahoma state line and the mouth of the Little River) was removed based on a prior UAA which established the designated use to be neither existing nor attainable because of the naturally occurring elevated dissolved minerals concentrations. Similarly, the UAA attached as Exhibit F establishes that the Red River segment from the mouth of the Little River to the Arkansas/Louisiana state line historically and frequently exceeds the secondary drinking water standard of 500 mg/L because of the naturally occurring elevated dissolved minerals. The Arkansas Department of Health and the Arkansas Natural Resource Commission confirm that the stream is not used as an existing domestic water supply, nor are there any plans for its future use as a domestic water supply. *See appendix M of Exhibit F.*

16. Following submission of the UAA and the Site-Specific Temperature Study to ADEQ, SWEPCO received communication from ADEQ dated September 5 and 10, 2014, authorizing it to move forward with the third-party rulemaking.

17. Through this Petition, and based upon the UAA and the Site-Specific Temperature Study, SWEPCO is requesting the following amendments to APCEC Regulation No. 2:

- modification of the TDS and temperature water quality criteria for the Little River from Millwood Lake to the mouth of the Little River as follows:
    - TDS from 100 mg/L to 138 mg/L[5]
    - Temperature from 30° C (86° F) to 32° C (89.6° F);

[5] Per Regulation No. 2, 2.511(B), a TDS value of 138 mg/L is not considered to be "a significant modification of the maximum naturally occurring values."

- modification of the TDS water quality criterion for the Red River from the mouth of the Little River to the Arkansas/Louisiana state line from 500 mg/L to 860 mg/L; and

- Removal of the designated, but not existing, domestic drinking water use from the Red River from the mouth of the Little River to the Arkansas/Louisiana state line.

A redline version of APCEC Regulation No. 2 showing the proposed change is attached hereto as Exhibit A and incorporated herein by reference.[6]

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

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

20. On June 30, 2014, a copy of 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.

21. 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.

[6] The redline version attached as Exhibit A is a redline of the version of APCEC Regulation No. 2 adopted by the Commission February 28, 2014, but which, as of the date of this filing has not been formally approved by EPA. Should action taken by EPA affect any of the redline pages attached hereto as Exhibit A, a substituted Exhibit A will be filed with the Commission.

22. A copy of UAA supporting the requested TDS criterion modifications is attached hereto as Exhibit F and incorporated herein by reference.

23. A copy of Site-Specific Temperature Study supporting the requested temperature modification is attached hereto as Exhibit G and incorporated herein by reference.

24. A copy of the September 5 and 10, 2014 correspondence from ADEQ is attached hereto as Exhibit H.

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

26. This Petition is supported by the following:

- SWEPCO seeks site-specific TDS and temperature criteria which reflect current conditions, bring consistency to the criteria on the Red and Little Rivers, and allow the Turk facility to operate as designed while protecting the attainment of the aquatic life, primary and secondary contact recreation, and industrial and agriculture water designated uses for Little River and Red River;

- TDS concentrations in the Little River upstream of the facility exceed the current site-specific criterion of 100 mg/L which is below the Ecoregion Reference Stream Value;

- Temperature in the Little River upstream of the facility exceeds the current site-specific standard of 30° C (86° F);

- Temperature criterion for Millwood Lake, immediately upstream of the affected segment of the Little River, and for the Red River into which the Little River flows are both set at 32° C (89.6° F).

- Adjusting the temperature criterion for the Little River downstream of Millwood Lake to reflect current ambient conditions will prevent the Little River from being inappropriately listed as impaired.

- TDS concentrations in the Red River historically exceed the current TDS criterion of 500 mg/L due to elevated levels of dissolved solids caused primarily by input from natural salt springs and seeps in Oklahoma and Texas.

- TDS criterion in the Red River downstream of the mouth of the Little River is spatially inconsistent with the TDS criterion in the river upstream of the mouth of the Little River.

- UAA data established that the requested changes should have no adverse effect on the aquatic life communities;

- The toxicity threshold based on tests of *Ceridaphnia dubia* using the facility's effluent indicates that toxicity due to minerals is well above the anticipated mineral concentration in the effluent at the critical dilution;

- Setting the TDS and temperature criteria at the site-specific levels requested in paragraph 17, above in these segments of the Little River and the Red River should not cause acute or chronic toxicity;

- There is no current economically feasible treatment technology for the removal of the minerals to meet the current criteria. Reverse osmosis treatment technology does exist; however, this technology is not cost effective and generates a concentrated brine which is environmentally difficult to dispose of. The technology is not required to meet the designated uses and would produce no significant additional environmental protection.

- 40 CFR 131.11(b)(1)(ii) provides states with the opportunity to adopt water quality standards that are "modified to reflect site-specific conditions."

- The basis for site-specific standards is set forth in 40 CFR 131.10(g)(6) which provides that the state may establish less stringent criteria if naturally occurring pollutant concentrations, dams or other types of hydrologic modifications limit the use or if controls more stringent than those required by section 301(b) and 306 of the Clean Water Act if would result in substantial and widespread economic and social impact.

WHEREFORE, Southwestern Electric Power Company requests that the Commission initiate a rulemaking to amend APCEC Regulation No. 2 in the manner requested in paragraph 17, above.

Respectfully submitted,

MITCHELL, WILLIAMS, SELIG,
GATES & WOODYARD, PLLC
425 W. Capitol Avenue, Suite 1800
Little Rock, Arkansas 72201-3525
(501) 688-8800
mtaylor@mwlaw.com
agates@mwlaw.com

By: _____
Marcella J. Taylor, AR Bar No. 82156
Allan Gates, AR Bar No. 72040

Counsel for Southwestern Electric Power Company

CERTIFICATE OF SERVICE

I hereby certify that on this 11th day of September, 2014, I served a copy of the foregoing Petition to Initiate Third-Party Rulemaking to Amend Regulation No. 2 on the following by Hand Delivery:

Tammy Harrelson, Esq.
Managing Attorney
Arkansas Department of Environmental Quality
5301 Northshore Drive
North Little Rock, AR 72118
harrelson@adeq.state.ar.us

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Marcella J. Taylor