

EXHIBIT G

DEPARTMENT OF ENVIRONMENTAL QUALITY, WATER DIVISION

SUBJECT: Amendment to the Water Quality Standards; Third Party Rulemaking by Southwestern Electric Power Company

Southwestern Electric Power Company (“SWEPCO”) owns and operates the John W. Turk, Jr. Power Plant which discharges treated wastewater from a single 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 Red River contains elevated levels of dissolved solids caused by input from natural salt springs and seeps in Oklahoma and Texas. The states of Texas, Oklahoma, Arkansas, and Louisiana each have established total dissolved solids (“TDS”) criterion for the river which are spatially inconsistent. Even within Arkansas the TDS criterion is inconsistent: 850 mg/L upstream of the confluence with the Little River; 500 mg/L downstream of the Little River. The segment of the Red River into which the Little River flows is listed as impaired for TDS in the Arkansas 2008 303(d) list.¹ The consequence of the listing is that the limitations set in the facility’s NPDES permit adversely impact the operations of the facility preventing it from operating as designed despite the fact that the facility’s discharge at full operation will have no effect on the concentration of dissolved minerals in the Red River or on the aquatic life in the river.

SWEPCO evaluated alternatives through a Use Attainability Analysis (UAA) which included field studies, toxicity testing, mass balance modeling, engineering analysis of alternatives for discharge and treatment, and an analysis of designated uses for the Red River and the Little River.

Based on the UAA, public comments, and a public hearing, approval by the Governor, and legislative review and approval, the Arkansas Pollution Control and Ecology Commission (APCEC) adopted SWEPCO’s proposed amendment to amend Regulation No. 2 to modify the water quality criterion for TDS in the Red River from the mouth of the Little River the Arkansas/Louisiana state line from 500 mg/L to 860 mg/L. In July of 2016, EPA disapproved the modification of the TDS water quality criterion because the Agency concluded that the inadequate information was submitted to demonstrate protection of the aquatic life use and the proposed criteria was not protective of the downstream use in Louisiana, which set the TDS criteria in the Red River at the Arkansas/Louisiana state line as 780 mg/L. Following the submission of additional information to EPA, which demonstrated protection of the aquatic life use, SWEPCO agreed to modify its request to amend the TDS criteria in the Red River to match to TDS criteria set by Louisiana. SWEPCO is therefore requesting:

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 860 mg/L to 780 mg/L.

¹ 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.

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SWEPCO's proposed site-specific modification is supported by the following:

- TDS concentrations in the Red River historically exceed the TDS criterion due to elevated levels of dissolved solids from input from natural salt springs and seeps in Oklahoma and Texas.
- UAA and the subsequently submitted data established that the requested changes will have no adverse effect on the aquatic life communities;
- The toxicity threshold based on tests of *Ceriodaphnia 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 and setting the TDS criterion at the site-specific level requested by SWEPCO in this segment of the Red River will not cause acute or chronic toxicity;
- There is no current economically feasible treatment technology for the removal of the minerals. 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 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 would result in substantial and widespread economic and social impact.

PUBLIC COMMENT: A public hearing was held on March 20, 2017 in Hope, Arkansas. The public comment period expired on March 30, 2017. The following public comment summary was provided detailing the public comments received during the public comment period and the responses by both the Department and the third party, Southwestern Electric Power Company ("SWEPCO"):

Two written comments were submitted during the public comment period. No oral comments were received during the public hearing.

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Comment 1

Jerry Landrum stated “Please to not increase pollution limits for Turk Power plant.”

ADEQ Response: SWEPCO’s proposed amendment of APC&EC Regulation 2 does not request revision of criteria to allow for additional pollution. The petitioner’s request was to align criteria to reflect ambient water quality conditions in the Red River. Oklahoma and Texas salt seeps and springs contribute the majority of ions responsible for elevated total dissolved solid (TDS) concentrations in the Red River. The proposed amendment will revise the Red River TDS criteria from the mouth of Little River to the Arkansas-Louisiana state line.

SWEPCO Response: SWEPCO’s request to amend Arkansas Pollution Control and Ecology Commission Regulation No. 2 does not propose to increase any pollution. Rather it seeks to revise the total dissolved solids (TDS) water quality standard for the Red River from the mouth of the Little River to the Arkansas/Louisiana state line. This revision will make the standard correspond more closely to the historic concentrations of TDS that have been measured in the river for decades. These concentrations are due largely to naturally occurring salt springs and seeps upstream in Texas and Oklahoma.

Comment 2

Dr. Luis Contreras made several comments as set forth below:

Comment 2a: “I respectfully oppose increasing wastewater emissions from 500 mg/L to 780 mg/L. This is 56 percent higher than the current emissions of calcium, magnesium, chloride, and silica into the Little Red River.”

ADEQ Response 2a: Please refer to ADEQ Response to Comment 1. In addition, an important point of clarification is that the proposed revision is for the Red River (Miller County), not the Little Red River (Cleburne and White Counties).

SWEPCO Response 2a: This requested modification of the TDS water quality standard has nothing to do with the Little Red River. The modification involves the Red River. The modification does not propose an increase in “wastewater emissions.” Instead, the modification will set the water quality standard for TDS to match the instream concentrations actually measured in the river for decades. There is no 56% increase in effluent requested by this Rulemaking. SWEPCO’s permitted discharge contains TDS less than 0.16% of the average load in the Red River. SWEPCO adds minimal TDS to the River. The water is simply withdrawn from the River and used for evaporative non-contact cooling purposes. The amount of minerals that are taken in from the river go back out when the cooling water is discharged.

SWEPCO’s request is to set the instream TDS water quality standard at 780 mg/L in a portion of the Red River from the mouth of the Little River to the Arkansas/Louisiana state line. Although the Arkansas TDS water quality standard had been set at 500 mg/l, the TDS in the river has, for decades, exceeded 500 mg/L because it contains elevated levels of TDS caused primarily by input from natural salt springs and seeps in Oklahoma

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and Texas.² On October 23, 2015, the Commission approved an increase in the TDS standard from 500 mg/L to 860 mg/L. After discussions with ADEQ and SWEPCO's consultants, and submission of supplemental aquatic life supporting data, EPA agreed that an increase in the TDS standard was supported by the record, but EPA asked that the increase be reduced from 860 mg/L to 780 mg/L to match the 780 mg/L TDS standard that had been in place for many years in Louisiana.

Comment 2b: "This is a major increase of toxic pollution. SWEPCO is requesting an additional 656 kilograms per day of calcium, magnesium, chloride, and silica, into the Little Red River." According to the Direct Testimony of James A. Kobyra P.E., APSC DOCKET NO. 06-154-U_19_1, the cooling tower wastewater emissions into the Little Red River are 430 gallons/minute, 1,628 liters per minute.

ADEQ Response 2b: Please refer to ADEQ Response to Comment 1.

SWEPCO Response 2b: TDS is not considered by EPA, or the relevant state agencies, to be a toxic pollutant or hazardous substance. Although toxicologists consider every chemical to have toxicity at some level, TDS has been demonstrated to be not toxic at the ambient concentrations involved in this proceeding. The Use Attainability Analysis Study (UAA) supporting the water quality standard request for the Red River (again, not the Little Red River) verified that there are no negative effects on aquatic life due to the TDS concentrations requested by SWEPCO. The commenter's assertion that the modification of the water quality standard would increase TDS in the river by an additional 656 kilograms per day is based on an invalid calculation, i.e. multiplying an effluent flow rate (1,628 liters/minute) times the 280 mg/L change in the water quality standard that SWEPCO has requested. The calculation is invalid because a flow rate for SWEPCO's effluent is being multiplied by a concentration that applies to the river, not the effluent. SWEPCO adds minimal TDS to the River (see below, Response 2c). The water is simply withdrawn from the River and used for evaporative non-contact cooling purposes. The amount of minerals that are taken in from the river go back out when the cooling water is discharged.

Comment 2c: "Why now? SWEPCO says the increase is to meet design specifications for the Turk plant. The Turk plant has been running with 500 mg/L for several years. If the design specifications called for additional waste water emissions, why was this not requested when the plant was proposed?"

ADEQ Response 2c: SWEPCO was originally permitted at 500 mg/L TDS because the Red River was listed as impaired for TDS, which resulted in the initial TDS permit limit being derived as an "end of pipe" limit to meet water quality criteria. The TDS impairment stemmed from the Red River TDS concentrations being routinely above the criterion of 500 mg/L because of natural causes described in ADEQ Response to Comment 1. Lower Red River TDS criteria are relatively low in comparison to other sections. Texas and Oklahoma, for example, have TDS criteria of 1,100 and 1,200 mg/L, respectively. Upon entering Arkansas, Red River TDS criteria is 850 mg/L before dropping significantly to 500 mg/L after the Little River confluence. At the Louisiana state line, the TDS criterion rises to 780 mg/L. The revision of the Red River TDS

² 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.

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criterion from the mouth of the Little River to the Arkansas-Louisiana state line will reflect ambient conditions without an inappropriate and unnatural decrease in water quality criteria.

SWEPCO Response 2c: When the original discharge permit was issued, the Arkansas Department of Environmental Quality (ADEQ) could not allow the permit limit for TDS to exceed 500 mg/L because the water quality standard for the Red River immediately downstream of the Little River is 500 mg/L and that reach of the Red River was considered to be impaired on the 2008 303(d) list. To address this situation, SWEPCO initiated the process of revising the water quality standard. Limiting SWEPCO's discharge to 500 mg/L for TDS has resulted in increased use of water for cooling purposes and has caused the facility to operate at less than maximum efficiency ever since it began operating. The facility was designed to achieve its optimum efficiency by recycling the cooling water in the cooling tower multiple times. Each time (cycle) that water is recycled in the cooling tower it results in a net decrease of the volume of water discharged as blowdown and an increase in the TDS concentration in the blowdown discharge. Increased cycling in the cooling tower also results in more efficient use of chemical additives (some may be decreased in concentration and/or feed rate), such that the net discharge loading for TDS (net TDS released in lbs/day) may actually decrease as the cycling of the cooling water in the cooling tower is increased.

Comment 2d: "Increasing to 'match' is a flawed argument. Would SWEPCO agree to lower emissions, say 350 mg/L, if Louisiana's standard were 350 mg/L? Louisiana has a higher standard because it is downstream from the Turk plant."

ADEQ Response 2d: Pursuant to sections 303 and 101(a), the federal regulation 40 CFR 131.10(b) requires that, "*In designating uses of a water body and the appropriate criteria for those uses, the State shall take into consideration the water quality standards of downstream waters and shall ensure that its water quality standards provide for the attainment and maintenance of the water quality standards of downstream waters.*"

SWEPCO's proposed revision for Red River TDS criterion from 860 mg/L to 780 mg/L will effectively align with the current TDS water quality criterion established by the Louisiana Department of Environmental Quality and will be compliant with all federal regulations.

SWEPCO Response 2d: SWEPCO's reason for proposing to modify the TDS water quality standard for TDS in the Red River is not to match Louisiana's standard, but to set the standard to a more appropriate value that includes the effects of naturally occurring loads coming into Arkansas from Oklahoma and Texas. SWEPCO's request is not "increasing to match"; it is actually seeking a decrease in the Commission approved TDS standard of 860 mg/L to 780 mg/L which is the same as the Louisiana TDS standard. Additionally, Louisiana's standard is not higher because of the Turk plant; Louisiana's standard for TDS in the Red River has been 780 mg/L since at least 1999, long before the Turk plant was built.

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Comment 2e: “Louisiana waterways have the worst pollution. SWEPCO is asking for an additional 656 kilograms per day of calcium, magnesium, chloride, and silica, into the Little Red River.”

ADEQ Response 2e: Please refer to ADEQ Response to Comment 2c. Louisiana Department of Environmental Quality and EPA have agreed that the existing criteria of 780 mg/L TDS for the Red River (Louisiana) is protective of all beneficial uses.

SWEPCO Response 2e: As noted in Response 2b above, the value of 656 kg/day is the result of an invalid calculation. This Rulemaking concerns TDS water quality standard in the Red River (again, not the Little Red River) in Arkansas. Toxic chemicals in Louisiana waterways are outside the scope of this Rulemaking, and the June 2014 report referenced in the comment cites figures for EPA’s Toxic Release Inventory, which does not include TDS because it is not considered by EPA (or state regulatory agencies) to be a toxic chemical. The UAA Study supporting the water quality standard request for the Red River verified that there are no negative effects on aquatic life due to the TDS water quality standard requested by SWEPCO.

The proposed effective date is pending legislative review and approval.

FINANCIAL IMPACT: There is no financial impact.

LEGAL AUTHORIZATION: This amendment to Regulation No. 2, Water Quality Standards, stems from a third party rulemaking request made to the Arkansas Pollution Control and Ecology Commission (“Commission”) by Southwestern Electric Power Company. Arkansas Code Annotated § 8-4-202(c)(1) bestows upon any person the right to petition the Commission for the issuance, amendment, or repeal of any rule or regulation. *See also* Ark. Code Ann. § 8-4-102(5) (defining “person” as “any state agency, municipality, governmental subdivision of the state or the United States, public or private corporation, individual, partnership, association, or other entity”). Pursuant to Ark. Code Ann. § 8-4-202(a), the Commission is given and charged with the power and duty to adopt, modify, or repeal, after notice and public hearings, rules and regulations implementing or effectuating the powers and duties of the Commission and the Arkansas Department of Environmental Quality. It is further given and charged with the power and duty to promulgate rules and regulations including water quality standards. *See* Ark. Code Ann. § 8-4-201(b)(1)(A). *See also* Ark. Code Ann. § 8-4-202(b)(3).