Permit Number: AR0001147
AFIN: 30-00011

AUTHORIZATION TO DISCHARGE WASTEWATER UNDER THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM AND THE ARKANSAS WATER AND AIR POLLUTION CONTROL ACT

In accordance with the provisions of the Arkansas Water and Air Pollution Control Act (Ark. Code Ann. 8-4-101 et seq.), and the Clean Water Act (33 U.S.C. § 1251 et seq.),

Entergy Arkansas, LLC
Lake Catherine Plant

is authorized to discharge once through cooling water, low volume wastewater (consisting of floor drains, building sumps, equipment drains, and boiler blowdown), and chemical metal cleaning wastewater from a facility located as follows: 141 West County Line Road, Malvern, AR 72104, on a peninsula on the east shore of Lake Catherine approximately 0.75 miles upstream of Remmel Dam in Hot Spring County, Arkansas. The applicant's mailing address is: P.O. Box 551, Little Rock, AR 72203-0551.

Latitude: 34° 26' 9.10" N; Longitude: 92° 54' 5.31" W

to receiving waters named:

Lake Catherine, thence to the Ouachita River in Segment 2F of the Ouachita River Basin.

The outfall is located at the following coordinates:

Outfall 001: Latitude: 34° 26' 0.38" N; Longitude: 92° 54' 13.7" W
Outfall 002: Latitude: 34° 25' 59.7" N; Longitude: 92° 54' 14.5" W
Outfall 003: Latitude: 34° 26' 0.22" N; Longitude: 92° 54' 11.9" W
Outfall 004: Latitude: 34° 26' 7.44" N; Longitude: 92° 54' 20.7" W
Outfall 005: Latitude: 34° 26' 0.72" N; Longitude: 92° 54' 13.5" W

Discharge shall be in accordance with effluent limitations, monitoring requirements, and other conditions set forth in this permit. Per Part III.D.10, the permittee must re-apply 180 days prior to the expiration date below for permit coverage to continue beyond the expiration date.

Effective Date: October 1, 2019
Expiration Date: September 30, 2024

Robert E. Blanz, Ph.D., P.E.
Associate Director, Office of Water Quality
Arkansas Department of Environmental Quality

8/26/2019
Issue Date

PART I
PERMIT REQUIREMENTS

SECTION A1. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS: OUTFALL 001 - once through cooling water from Unit 4.

During the period beginning on the effective date and lasting until the date of expiration, the permittee is authorized to discharge from Outfall 001. Such discharges shall be limited and monitored by the permittee as specified below as well as Parts II and III. See Part IV for all definitions and calculations.

Effluent Characteristics	Discharge Limitations				Monitoring Requirements	
	Mass (lbs/day, unless otherwise specified)		Concentration (mg/l, unless otherwise specified)		Frequency	Sample Type
	Monthly Avg.	Daily Max	Monthly Avg.	Daily Max		
Flow	N/A	N/A	425 MGD	476 MGD	continuous	calculated[4]
Free Available Chlorine (FAC)	59.1	165.4	0.2	0.5	once/week	grab
Total Residual Chlorine (TRC)	N/A	66.2	N/A	0.2[1]	once/week	grab
Temperature	N/A	N/A	95°F (Inst. Max.)		continuous	record
pH	N/A	N/A	Minimum 6.0 s.u.	Maximum 9.0 s.u.	once/week	grab
Chronic WET Testing[2]						
Pimephales promelas (Chronic)[2]						
Pass/Fail Lethality (7-day NOEC) TLP6C			Report (Pass=0/Fail=1)		once/quarter	composite
Pass/Fail Growth (7-day NOEC)TGP6C			Report (Pass=0/Fail=1)		once/quarter	composite
Survival (7-day NOEC) TOP6C			Report %		once/quarter	composite
Coefficient of Variation (Growth) TQP6C			Report %		once/quarter	composite
Growth (7-day NOEC) TPP6C			Report %		once/quarter	composite
Pass/Fail Retest 1 (7-day NOEC) 22418			Report (Pass=0/Fail=1)		once/month[3]	composite
Pass/Fail Retest 2 (7-day NOEC) 22419			Report (Pass=0/Fail=1)		once/month[3]	composite
Pass/Fail Retest 3 (7-day NOEC) 51444			Report (Pass=0/Fail=1)		once/month[3]	composite
Ceriodaphnia dubia (Chronic)[2]						
Pass/Fail Lethality (7-day NOEC) TLP3B			Report (Pass=0/Fail=1)		once/quarter	composite
Pass/Fail production (7-day NOEC)TGP3B			Report (Pass=0/Fail=1)		once/quarter	composite
Survival (7-day NOEC) TOP3B			Report %		once/quarter	composite
Coefficient of Variation (Reproduction) TQP3B			Report %		once/quarter	composite
Reproduction (7-day NOEC) TPP3B			Report %		once/quarter	composite
Pass/Fail Retest 1 (7-day NOEC) 22415			Report (Pass=0/Fail=1)		once/month[3]	composite
Pass/Fail Retest 2 (7-day NOEC) 22416			Report (Pass=0/Fail=1)		once/month[3]	composite
Pass/Fail Retest 3 (7-day NOEC) 51443			Report (Pass=0/Fail=1)		once/month[3]	composite

[1] The effluent limitation for TRC is the instantaneous maximum and cannot be averaged for reporting purposes. TRC shall be measured within fifteen (15) minutes of sampling.
[2] See Condition No. 12 of Part II (WET Testing Requirements).
[3] CONDITIONAL REPORTING: Use only if conducting retests due to a test failure (demonstration of significant toxic effects at or below the critical dilution). If testing on a quarterly basis, the permittee may substitute one of the retests in lieu of one routine toxicity test. If retests are not required, Report NODI=9 (Conditional Monitoring - Not Required This Period) under retest parameters. (reported on a quarterly DMR)
[4] See Condition No. 11 of Part II (Flow Calculation Requirements).

Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge during the entire monitoring period. Samples shall be taken at the outfall, prior to the receiving stream.

SECTION A2. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS: OUTFALL 002 - once through cooling water from Units 1, 2, and 3.

During the period beginning on the effective date and lasting until the date of expiration, the permittee is authorized to discharge from Outfall 002. Such discharges shall be limited and monitored by the permittee as specified below as well as Parts II and III. See Part IV for all definitions and calculations.

Effluent Characteristics	Discharge Limitations				Monitoring Requirements	
	Mass (lbs/day, unless otherwise specified)		Concentration (mg/l, unless otherwise specified)		Frequency	Sample Type
	Monthly Avg.	Daily Max	Monthly Avg.	Daily Max		
Flow	N/A	N/A	230 MGD	240 MGD	once/day	calculated[4]
Free Available Chlorine (FAC)	31.0	83.4	0.2	0.5	once/week	grab
Total Residual Chlorine (TRC)	N/A	33.4	N/A	0.2[1]	once/week	grab
Temperature	N/A	N/A	95°F (Inst. Max.)		once/day	instantaneous
pH	N/A	N/A	Minimum 6.0 s.u.	Maximum 9.0 s.u.	once/week	grab
Chronic WET Testing[2]						
Pimephales promelas (Chronic)[2]						
Pass/Fail Lethality (7-day NOEC) TLP6C			Report (Pass=0/Fail=1)		once/quarter	composite
Pass/Fail Growth (7-day NOEC)TGP6C			Report (Pass=0/Fail=1)		once/quarter	composite
Survival (7-day NOEC) TOP6C			Report %		once/quarter	composite
Coefficient of Variation (Growth) TQP6C			Report %		once/quarter	composite
Growth (7-day NOEC) TPP6C			Report %		once/quarter	composite
Pass/Fail Retest 1 (7-day NOEC) 22418			Report (Pass=0/Fail=1)		once/month[3]	composite
Pass/Fail Retest 2 (7-day NOEC) 22419			Report (Pass=0/Fail=1)		once/month[3]	composite
Pass/Fail Retest 3 (7-day NOEC) 51444			Report (Pass=0/Fail=1)		once/month[3]	composite
Ceriodaphnia dubia (Chronic)[2]						
Pass/Fail Lethality (7-day NOEC) TLP3B			Report (Pass=0/Fail=1)		once/quarter	composite
Pass/Fail production (7-day NOEC)TGP3B			Report (Pass=0/Fail=1)		once/quarter	composite
Survival (7-day NOEC) TOP3B			Report %		once/quarter	composite
Coefficient of Variation (Reproduction) TQP3B			Report %		once/quarter	composite
Reproduction (7-day NOEC) TPP3B			Report %		once/quarter	composite
Pass/Fail Retest 1 (7-day NOEC) 22415			Report (Pass=0/Fail=1)		once/month[3]	composite
Pass/Fail Retest 2 (7-day NOEC) 22416			Report (Pass=0/Fail=1)		once/month[3]	composite
Pass/Fail Retest 3 (7-day NOEC) 51443			Report (Pass=0/Fail=1)		once/month[3]	composite

[1] The effluent limitation for TRC is the instantaneous maximum and cannot be averaged for reporting purposes. TRC shall be measured within fifteen (15) minutes of sampling.

[2] See Condition No. 12 of Part II (WET Testing Requirements).

[3] CONDITIONAL REPORTING: Use only if conducting retests due to a test failure (demonstration of significant toxic effects at or below the critical dilution). If testing on a quarterly basis, the permittee may substitute one of the retests in lieu of one routine toxicity test. If retests are not required, Report NODI=9 (Conditional Monitoring - Not Required This Period) under retest parameters. (reported on a quarterly DMR)

[4] See Condition No. 11 of Part II (Flow Calculation Requirements).

Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge during the entire monitoring period. Samples shall be taken at the outfall, prior to the receiving stream.

SECTION A3. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS: OUTFALL 003 – low volume wastewater consisting of floor drains, building sumps, and equipment drains within the turbine areas for Units 1, 2, 3, and 4.

During the period beginning on the effective date and lasting until the date of expiration, the permittee is authorized to discharge from Outfall 003. Such discharges shall be limited and monitored by the permittee as specified below as well as Parts II and III. See Part IV for all definitions and calculations.

Effluent Characteristics	**Discharge Limitations**				**Monitoring Requirements**	
	Mass (lbs/day, unless otherwise specified)		Concentration (mg/l, unless otherwise specified)		Frequency	Sample Type
	Monthly Avg.	Daily Max	Monthly Avg.	Daily Max		
Flow	N/A	N/A	Report, MGD	Report, MGD	once/day	instantaneous
Total Suspended Solids (TSS)	N/A	N/A	30.0	100.0	once/week	grab
Oil and Grease (O&G)	N/A	N/A	10.0	15.0	once/week	grab
pH	N/A	N/A	Minimum 6.0 s.u.	Maximum 9.0 s.u.	once/week	grab

Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge during the entire monitoring period. Samples shall be taken at the monitoring station after the final treatment unit, prior to the receiving stream.

SECTION A4. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS: OUTFALL 004 – chemical metal cleaning wastewater.

During the period beginning on the effective date and lasting until the date of expiration, the permittee is authorized to discharge from Outfall 004. Such discharges shall be limited and monitored by the permittee as specified below as well as Parts II and III. See Part IV for all definitions and calculations.

Effluent Characteristics	**Discharge Limitations**				**Monitoring Requirements**	
	Mass (lbs/day, unless otherwise specified)		Concentration (mg/l, unless otherwise specified)		Frequency	Sample Type
	Monthly Avg.	Daily Max	Monthly Avg.	Daily Max		
Flow	N/A	N/A	Report, MGD	Report, MGD	daily	instantaneous
Total Suspended Solids (TSS)	N/A	N/A	30.0	100.0	once/week	grab
Oil and Grease (O&G)	N/A	N/A	10.0	15.0	once/week	grab
Total Copper	N/A	N/A	257 µg/l	516 µg/l	once/week	grab
Total Iron	N/A	N/A	1.0	1.0	once/week	grab
pH	N/A	N/A	Minimum 6.0 s.u.	Maximum 9.0 s.u.	once/week	grab

Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge during the entire monitoring period. Samples shall be taken after the final treatment unit, at the outfall, prior to the receiving stream.

SECTION A5. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS: OUTFALL 005 – low volume wastewater consisting of boiler blowdown from Units 1, 2, 3, and 4, filter backwash from Unit 4, and regeneration wastewater.

During the period beginning on the effective date and lasting until the date of expiration, the permittee is authorized to discharge from Outfall 005. Such discharges shall be limited and monitored by the permittee as specified below as well as Parts II and III. See Part IV for all definitions and calculations.

Effluent Characteristics	**Discharge Limitations**				**Monitoring Requirements**	
	Mass (lbs/day, unless otherwise specified)		Concentration (mg/l, unless otherwise specified)		Frequency	Sample Type
	Monthly Avg.	Daily Max	Monthly Avg.	Daily Max		
Flow	N/A	N/A	Report, MGD	Report, MGD	daily	instantaneous
Total Suspended Solids (TSS)	N/A	N/A	30.0	100.0	once/week	grab
Oil and Grease (O&G)	N/A	N/A	10.0	15.0	once/week	grab
pH	N/A	N/A	Minimum 6.0 s.u.	Maximum 9.0 s.u.	once/week	grab

Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge during the entire monitoring period. Samples shall be taken after the final treatment unit, at the outfall, prior to the receiving stream.

SECTION B. PERMIT COMPLIANCE SCHEDULE

None.

PART II
OTHER CONDITIONS

1. The operator of this wastewater treatment facility shall hold a Basic Industrial license from the State of Arkansas in accordance with APC&EC Regulation No. 3.

2. In accordance with 40 CFR Parts 122.62(a)(2) and 124.5, this permit may be reopened for modification or revocation and/or reissuance to require additional monitoring and/or effluent limitations when:

   a. new information is received that actual or potential exceedance of State water quality criteria and/or narrative criteria are determined to be the result of the permittee's discharge(s) to a relevant water body; or
   b. a Total Maximum Daily Load (TMDL) is established, or revised, for the water body that was not available at the time of the permit issuance that would have justified the application of different permit conditions; or
   c. an effluent limitation guideline (ELG) becomes effective.

3. Other Specified Monitoring Requirements

   The permittee may use alternative appropriate monitoring methods and analytical instruments other than as specified in Part I Section A of the permit without a major permit modification under the following conditions:

   - The monitoring and analytical instruments are consistent with accepted scientific practices.
   - The requests shall be submitted in writing to the Permits Section of the Office of Water Quality of the ADEQ for use of the alternate method or instrument.
   - The method and/or instrument is in compliance with 40 CFR Part 136 or approved in accordance with 40 CFR Part 136.5.
   - All associated devices are installed, calibrated, and maintained to ensure the accuracy of the measurements and are consistent with the accepted capability of that type of device. The calibration and maintenance shall be performed as part of the permittee's laboratory Quality Control/Quality Assurance program.

   Upon written approval of the alternative monitoring method and/or analytical instruments, these methods or instruments must be consistently utilized throughout the monitoring period. ADEQ must be notified in writing and the permittee must receive written approval from ADEQ if the permittee decides to return to the original permit monitoring requirements.

4. [Reserved]

5. There shall be no discharge of polychlorinated biphenyl compounds such as those commonly used for transformer fluid.

6. Neither free available chlorine nor total residual chlorine may be discharged from any unit for more than two hours in any one day and not more than one unit in any plant may discharge free available chlorine or total residual chlorine at any one time unless the utility can demonstrate to the State that the units in a particular location cannot operate at or below this level of chlorination.

7. The term "low volume wastewater sources" means, taken collectively as if from one source, wastewater from all sources except those for which specific limitations are otherwise established. Low volume sources include, but are not limited to: wastewater from wet scrubber air pollution control systems, ion exchange water treatment system, water treatment evaporator blowdown, laboratory and sampling wastes, boiler blowdown, floor drains, cooling tower basin cleaning wastes, and recirculating house service water systems. Sanitary and air conditioning wastes are not included.

8. Heat shall not be added to the receiving stream in excess of the amount that will elevate the natural temperature, outside of the mixing zone, by more than 5°F, based upon the monthly average of the maximum daily temperature measured at mid-depth or three feet (whichever is less).

9. The term "chemical metal cleaning waste" means any wastewater resulting from the cleaning of any metal process equipment with chemical compounds, including, but not limited to, boiler tube cleaning.

10. The permittee may use any EPA approved method based on 40 CFR Part 136 provided the MQL for the chosen method is equal to or less than what has been specified in chart below:

Pollutant	MQL (µg/l)
Total Copper	0.5
Total Iron	20

The permittee may develop a matrix specific method detection limit (MDL) in accordance with Appendix B of 40 CFR Part 136. For any pollutant for which the permittee determines a site specific MDL, the permittee shall send to ADEQ, NPDES Permits Branch, a report containing QA/QC documentation, analytical results, and calculations necessary to demonstrate that a site specific MDL was correctly calculated. A site specific minimum quantification level (MQL) shall be determined in accordance with the following calculation:

$$MQL = 3.3 \times MDL$$

Upon written approval by Permits Branch, the site specific MQL may be utilized by the permittee for all future Discharge Monitoring Report (DMR) calculations and reporting requirements.

11. The effluent flows from Outfalls 001 and 002 must be calculated using the appropriate pump capacity and pump run time.

12. WHOLE EFFLUENT TOXICITY TESTING (7-DAY CHRONIC NOEC FRESHWATER)

A. SCOPE AND METHODOLOGY

i. The permittee shall test the effluent for toxicity in accordance with the provisions in this section.

APPLICABLE TO FINAL OUTFALL(S):	001 and 002
REPORTED ON DMR AS FINAL OUTFALL:	001 and 002
CRITICAL DILUTION (%):	96
EFFLUENT DILUTION SERIES (%):	30, 41, 54, 72, 96
TESTING FREQUENCY:	once/quarter
COMPOSITE SAMPLE TYPE:	Defined at Part II.12.C.iv
TEST SPECIES/METHODS:	40 CFR Part 136

Ceriodaphnia dubia chronic static renewal survival and reproduction test, Method 1002.0, EPA-821-R-02-013, or the most recent update thereof. This test should be terminated when 60% of the surviving females in the control produce three broods or at the end of eight days, whichever comes first.

Pimephales promelas (Fathead minnow) chronic static renewal 7-day larval survival and growth test, Method 1000.0, EPA-821-R-02-013, or the most recent update thereof. A minimum of five (5) replicates with eight (8) organisms per replicate must be used in the control and in each effluent dilution of this test.

ii. The NOEC (No Observed Effect Concentration) is herein defined as the greatest effluent dilution at and below which toxicity (lethal or sub-lethal) that is statistically different from the control (0% effluent) at the 95% confidence level does not occur. Chronic lethal test failure is defined as a demonstration of a statistically significant lethal effect at test completion to a test species at or below the critical dilution. Chronic sub-lethal test failure is defined as a demonstration of a statistically significant sub-lethal effect (i.e., growth or reproduction) at test completion to a test species at or below the critical dilution.

iii. This permit may be reopened to require whole effluent toxicity limits, chemical specific effluent limits, additional testing, and/or other appropriate actions to address toxicity.

B. PERSISTENT LETHAL and/or SUB-LETHAL EFFECTS

The requirements of this subsection apply only when a toxicity test demonstrates significant lethal and/or sub-lethal effects at or below the critical dilution. The purpose of retests is to determine the duration of a toxic event. A test that meets all test acceptability criteria and demonstrates significant toxic effects does not need additional confirmation. Such testing cannot confirm or disprove a previous test result.

If a frequency reduction, as specified in Item F, has been granted and any valid test demonstrates significant lethal or sub-lethal effects to a test species at or below the critical dilution, the frequency of testing for that species is automatically increased to once per quarter for the life of the permit. In addition:

i. Part I Testing Frequency Other Than Monthly

a. The permittee shall conduct a total of three (3) retests for any species that demonstrates significant toxic effects at or below the critical dilution. The retests shall be conducted monthly during the next three consecutive months. If testing on a quarterly basis, the permittee may substitute one of the retests in lieu of one scheduled toxicity test. A full report shall be prepared for each test required by this section in accordance with procedures outlined in Item D of this section and submitted with the period discharge monitoring report (DMR) to the permitting authority for review.

b. IF LETHAL EFFECTS HAVE BEEN DEMONSTRATED If any of the retests demonstrates significant lethal effects at or below the critical dilution, the permittee shall initiate Toxicity Reduction Evaluation (TRE) requirements as specified in Item E of this section. The permittee shall notify ADEQ in writing within 5 days of the failure of any retest, and the TRE initiation date will be the test completion date of the first failed retest. A TRE may also be required due to a demonstration of intermittent lethal effects at or below the critical dilution, or for failure to perform the required retests. A TRE required based on lethal effects should consider any sub-lethal effects as well.

c. IF SUB-LETHAL EFFECTS ONLY HAVE BEEN DEMONSTRATED If any two of the three retests demonstrates significant sub-lethal effects at 75% effluent or lower, the permittee shall initiate the Sub-Lethal Toxicity Reduction Evaluation (TRE_{SL}) requirements as specified in Item E of this section. The permittee shall notify ADEQ in writing within 5 days of the failure of any retest, and the Sub-Lethal Effects TRE initiation date will be the test completion date of the first failed retest. A TRE may also be required for failure to perform the required retests.

d. The provisions of Item B.i.a are suspended upon submittal of the TRE Action Plan.

C. REQUIRED TOXICITY TESTING CONDITIONS

i. Test Acceptance

The permittee shall repeat a test, including the control and all effluent dilutions, if the procedures and quality assurance requirements defined in the test methods or in this permit are not satisfied, including the following additional criteria:

a. The toxicity test control (0% effluent) must have survival equal to or greater than 80%.

b. The mean number of Ceriodaphnia dubia neonates produced per surviving female in the control (0% effluent) must be 15 or more.

c. 60% of the surviving control females must produce three broods.

d. The mean dry weight of surviving Fathead minnow larvae at the end of the 7 days in the control (0% effluent) must be 0.25 mg per larva or greater.

e. The percent coefficient of variation between replicates shall be 40% or less in the control (0% effluent) for: the young of surviving females in the Ceriodaphnia dubia reproduction test; the growth and survival endpoints of the Fathead minnow test.

f. The percent coefficient of variation between replicates shall be 40% or less in the critical dilution, unless significant lethal or sub-lethal effects are exhibited for: the young of surviving females in the Ceriodaphnia dubia reproduction test; the growth and survival endpoints of the Fathead minnow test.

g. If a test passes, yet the percent coefficient of variation between replicates is greater than 40% in the control (0% effluent) and/or in the critical dilution for: the young of surviving females in the Ceriodaphnia dubia reproduction test; the growth and survival endpoints of the Fathead minnow test, the test is determined to be invalid. A repeat test shall be conducted within the required reporting period of any test determined to be invalid.

h. If a test fails, test failure may not be construed or reported as invalid due to a coefficient of variation value of greater than 40%.

i. A Percent Minimum Significant Difference (PMSD) range of 13 - 47 for Ceriodaphnia dubia reproduction;

j. A PMSD range of 12 - 30 for Fathead minnow growth.

ii. Statistical Interpretation

a. For the Ceriodaphnia dubia survival test, the statistical analyses used to determine if there is a significant difference between the control and the critical dilution shall be Fisher's Exact Test as described in EPA/821/R-02-013 or the most recent update thereof.

b. For the Ceriodaphnia dubia reproduction test and the Fathead minnow larval survival and growth test, the statistical analyses used to determine if there is a significant difference between the control and the critical dilution shall be in accordance with the methods for determining the No Observed Effect Concentration (NOEC) as described in EPA/821/R-02-013 or the most recent update thereof.

c. If the conditions of Test Acceptability are met in Item C.i above and the percent survival of the test organism is equal to or greater than 80% in the critical dilution concentration and all lower dilution concentrations, the test shall be considered to be a passing test, and the permittee shall report a survival NOEC of not less than the critical dilution for the DMR reporting requirements found in Item D below.

iii. Dilution Water

a. Dilution water used in the toxicity tests will be receiving water collected as close to the point of discharge as possible but unaffected by the discharge. The permittee shall substitute synthetic dilution water of similar pH, hardness, and alkalinity to the closest downstream perennial water for;

(1) toxicity tests conducted on effluent discharges to receiving water classified as intermittent streams; and

(2) toxicity tests conducted on effluent discharges where no receiving water is available due to zero flow conditions.

b. If the receiving water is unsatisfactory as a result of instream toxicity (fails to fulfill the test acceptance criteria of Item C.i), the permittee may substitute synthetic dilution water for the receiving water in all subsequent tests provided the unacceptable receiving water test met the following stipulations:

(1) a synthetic dilution water control which fulfills the test acceptance requirements of Item C.i was run concurrently with the receiving water control;

(2) the test indicating receiving water toxicity has been carried out to completion (i.e., 7 days);

(3) the permittee includes all test results indicating receiving water toxicity with the full report and information required by Item D below; and

(4) the synthetic dilution water shall have a pH, hardness, and alkalinity similar to that of the receiving water or closest downstream perennial water not adversely affected by the discharge, provided the magnitude of these parameters will not cause toxicity in the synthetic dilution water.

iv. Samples and Composites

a. The permittee shall collect a minimum of three flow-weighted composite samples from the outfall(s) listed at Item A.i above. Unless otherwise stated in this section, a composite sample for WET shall consist of a minimum of 12 subsamples gathered at equal time intervals during a 24-hour period.

b. The permittee shall collect second and third composite samples for use during 24-hour renewals of each dilution concentration for each test. The permittee must collect the composite samples such that the effluent samples, on use, are representative of any periodic episode of chlorination, biocide usage or other potentially toxic substance discharged on a regular or intermittent basis.

c. The permittee must collect all three flow-weighted composite samples within the monitoring period. Second and/or third composite samples shall not be collected into the next monitoring period; such tests will be determined to not meet either reporting period requirements. Monitoring period definitions are listed in Part IV.

d. The permittee must collect the composite samples so that the maximum holding time for any effluent sample shall not exceed 72 hours. The permittee must have initiated the toxicity test within 36 hours after the collection of the last portion of the first composite sample. Samples shall be chilled to between 0 and 6 degrees Centigrade during collection, shipping, and/or storage.

e. If the flow from the outfall(s) being tested ceases during the collection of effluent samples, the requirements for the minimum number of effluent samples, the minimum number of effluent portions and the sample holding time are waived during that sampling period. However, the permittee must have collected an effluent composite sample volume during the period of discharge that is sufficient to complete the required toxicity tests with daily renewal of effluent. When possible, the effluent samples used for the toxicity tests shall be collected on separate days if the discharge occurs over multiple days. The effluent composite sample collection duration and the static renewal protocol associated with the abbreviated sample collection must be documented in the full report required in Item D of this section.

f. MULTIPLE OUTFALLS: If the provisions of this section are applicable to multiple outfalls, the permittee shall combine the composite effluent samples in proportion to the average flow from the outfalls listed in Item A.i. above for the day the sample was collected. The permittee shall perform the toxicity test on the flow-weighted composite of the outfall samples.

g. If chlorination is part of the treatment process, the permittee shall not allow the sample to be dechlorinated at the laboratory. At the time of sample collection the permittee shall measure the TRC of the effluent. The measured concentration of TRC for each sample shall be included in the lab report submitted by the permittee.

D. REPORTING

i. The permittee shall prepare a full report of the results of all tests conducted pursuant to this section in accordance with the Report Preparation Section of EPA/821/R-02-013, or the most current publication, for every valid or invalid toxicity test initiated whether carried to completion or not. The permittee shall retain each full report pursuant to the provisions of PART III.C.7 of this permit. The permittee shall submit full reports. For any test or retest which fails, is considered invalid or which is terminated early for any reason, the full report must be submitted for agency review.

ii. A valid test for each species must be reported on the DMR during each reporting period specified in PART I of this permit. The full reports for all valid tests, invalid tests, repeat tests (for invalid tests), and retests (for tests previously failed) performed during the reporting period must be attached to the DMR for Agency review.

iii. The permittee shall submit the results of each valid toxicity test and retest on the subsequent DMR for that reporting period in accordance with PART III.D.4 of this permit, as follows below. Only results of valid tests are to be reported on the DMR.

a. Pimephales promelas (Fathead minnow)

(1) If the No Observed Effect Concentration (NOEC) for survival is less than the critical dilution, enter a '1'; otherwise, enter a '0' for Parameter No. TLP6C

(2) Report the NOEC value for survival, Parameter No. TOP6C

(3) Report the NOEC value for growth, Parameter No. TPP6C

(4) If the NOEC for growth is less than the critical dilution, enter a '1'; otherwise, enter a '0' for Parameter No. TGP6C

(5) Report the highest (critical dilution or control) Coefficient of Variation for growth, Parameter No. TQP6C

(6) If conducting retests due to a test failure (demonstration of significant toxic effects at or below the critical dilution):

(A) Consecutive Monthly Retest 1: If the NOEC (lowest lethal or sub-lethal) for *P. promelas* is less than the critical dilution, enter a '1'; otherwise, enter a '0' under Parameter No. 22418 (reported on quarterly DMR);

(B) Consecutive Monthly Retest 2: If the NOEC (lowest lethal or sub-lethal) for *P. promelas* is less than the critical dilution, enter a '1'; otherwise, enter a '0' under Parameter No. 22419 (reported on quarterly DMR);

(C) Consecutive Monthly Retest 3: If the NOEC (lowest lethal or sub-lethal) for *P. promelas* is less than the critical dilution, enter a '1'; otherwise, enter a '0' under Parameter No. 51444 (reported on quarterly DMR);

(D) If testing on a quarterly basis, the permittee may substitute one of the retests in lieu of one scheduled toxicity test;

(E) If retests are not required, Report NODI=9 (Conditional Monitoring - Not Required This Period) under Parameter Nos. 22418, 22419, 51444 (reported on quarterly DMR)

b. Ceriodaphnia dubia

(1) If the NOEC for survival is less than the critical dilution, enter a '1'; otherwise, enter a '0' for Parameter No. TLP3B

(2) Report the NOEC value for survival, Parameter No. TOP3B

(3) Report the NOEC value for reproduction, Parameter No. TPP3B

(4) If the NOEC for reproduction is less than the critical dilution, enter a '1'; otherwise, enter a '0' for Parameter No. TGP3B

(5) Report the higher (critical dilution or control) Coefficient of Variation for reproduction, Parameter No. TQP3B

(6) If conducting retests due to a test failure (demonstration of significant toxic effects at or below the critical dilution):

(A) Consecutive Monthly Retest 1: If the NOEC (lowest lethal or sub-lethal) for C. dubia is less than the critical dilution, enter a '1'; otherwise, enter a '0' under Parameter No. 22415 (reported on quarterly DMR);

(B) Consecutive Monthly Retest 2: If the NOEC (lowest lethal or sub-lethal) for C. dubia is less than the critical dilution, enter a '1'; otherwise, enter a '0' under Parameter No. 22416 (reported on quarterly DMR);

(C) Consecutive Monthly Retest 3: If the NOEC (lowest lethal or sub-lethal) for C. dubia is less than the critical dilution, enter a '1'; otherwise, enter a '0' under Parameter No. 51443 (reported on quarterly DMR);

(D) If testing on a quarterly basis, the permittee may substitute one of the retests in lieu of one scheduled toxicity test;

(E) If retests are not required, Report NODI=9 (Conditional Monitoring - Not Required This Period) under Parameter Nos. 22415, 22416, and 51443 (reported on quarterly DMR)

E. TOXICITY REDUCTION EVALUATIONS (TREs)

TREs for lethal and sub-lethal effects are performed in a very similar manner. EPA Region 6 is currently addressing TREs as follows: a sub-lethal TRE (TRE_{SL}) is triggered based on three sub-lethal test failures while a lethal effects TRE (TRE_L) is triggered based on only two test failures for lethality. In addition, EPA Region 6 will consider the magnitude of toxicity and use flexibility when considering a TRE_{SL} where there are no effects at effluent dilutions of 75% or lower.

i. Within ninety (90) days of confirming toxicity, as outlined above, the permittee shall submit a Toxicity Reduction Evaluation (TRE) Action Plan and Schedule for conducting a TRE. The TRE Action Plan shall specify the approach and methodology to be used in performing the TRE. A Toxicity Reduction Evaluation is an investigation intended to determine those actions necessary to achieve compliance with water quality-based effluent limits by reducing an effluent's toxicity to an acceptable level. A TRE is defined as a step-wise process which combines toxicity testing and analyses of the physical and chemical characteristics of a toxic effluent to identify the constituents causing effluent toxicity and/or treatment methods which will reduce the effluent toxicity. The goal of the TRE is to maximally reduce the toxic effects of effluent at the critical dilution and includes the following:

a. Specific Activities. The plan shall detail the specific approach the permittee intends to utilize in conducting the TRE. The approach may include toxicity characterizations, identifications and confirmation activities, source evaluation, treatability studies, or alternative approaches. When the permittee conducts Toxicity Characterization Procedures the permittee shall perform multiple characterizations and follow the procedures specified in the documents 'Methods for Aquatic Toxicity Identification Evaluations: Phase I Toxicity Characterization Procedures' (EPA-600/6-91/003) and 'Toxicity Identification Evaluation: Characterization of Chronically Toxic Effluents, Phase I' (EPA-600/6-91/005F), or alternate procedures. When the permittee conducts Toxicity Identification Evaluations and Confirmations, the permittee shall perform multiple identifications and follow the methods specified in the documents 'Methods for Aquatic Toxicity Identification Evaluations, Phase II Toxicity Identification Procedures for Samples Exhibiting Acute and Chronic Toxicity' (EPA/600/R-92/080) and 'Methods for Aquatic Toxicity Identification Evaluations, Phase III Toxicity Confirmation Procedures for Samples Exhibiting Acute and Chronic Toxicity' (EPA/600/R-92/081), as appropriate.

The documents referenced above may be obtained through the National Technical Information Service (NTIS) by phone at (703) 487-4650, or by writing:

U.S. Department of Commerce
National Technical Information Service
5285 Port Royal Road

Springfield, VA 22161

b. Sampling Plan (e.g., locations, methods, holding times, chain of custody, preservation, etc.). The effluent sample volume collected for all tests shall be adequate to perform the toxicity test, toxicity characterization, identification and confirmation procedures, and conduct chemical specific analyses when a probable toxicant has been identified;

c. Where the permittee has identified or suspects specific pollutant(s) and/or source(s) of effluent toxicity, the permittee shall conduct, concurrent with toxicity testing, chemical specific analyses for the identified and/or suspected pollutant(s) and/or source(s) of effluent toxicity. Where lethality was demonstrated within 48 hours of test initiation, each composite sample shall be analyzed independently. Otherwise the permittee may substitute a composite sample, comprised of equal portions of the individual composite samples, for the chemical specific analysis;

d. Quality Assurance Plan (e.g., QA/QC implementation, corrective actions, etc.); and

e. Project Organization (e.g., project staff, project manager, consulting services, etc.).

ii. The permittee shall initiate the TRE Action Plan within thirty (30) days of plan and schedule submittal. The permittee shall assume all risks for failure to achieve the required toxicity reduction.

iii. The permittee shall submit a quarterly TRE Activities Report, with the Discharge Monitoring Report in the months of January, April, July and October, containing information on toxicity reduction evaluation activities including:

a. any data and/or substantiating documentation which identifies the pollutant(s) and/or source(s) of effluent toxicity;

b. any studies/evaluations and results on the treatability of the facility's effluent toxicity; and

c. any data which identifies effluent toxicity control mechanisms that will reduce effluent toxicity to the level necessary to meet no significant toxicity at the critical dilution.

iv. The permittee shall submit a Final Report on Toxicity Reduction Evaluation Activities no later than twenty-eight (28) months from confirming toxicity in the retests, which provides information pertaining to the specific control mechanism selected that will, when implemented, result in reduction of effluent toxicity to no significant toxicity at the critical dilution. The report will also provide a specific corrective action schedule for implementing the selected control mechanism.

v. Quarterly testing during the TRE is a minimum monitoring requirement. EPA recommends that permittees required to perform a TRE not rely on quarterly testing

alone to ensure success in the TRE, and that additional screening tests be performed to capture toxic samples for identification of toxicants. Failure to identify the specific chemical compound causing toxicity test failure will normally result in a permit limit for whole effluent toxicity limits per federal regulations at 40 CFR 122.44(d)(1)(v).

F. MONITORING FREQUENCY REDUCTION

i. The permittee may apply for a testing frequency reduction upon the successful completion of the first four consecutive quarters or first twelve consecutive months (in accordance with Item A.i.) of the current permit term of testing for one or both test species, with no lethal or sub-lethal effects demonstrated at or below the critical dilution. If granted, the monitoring frequency for that test species may be reduced to not less than once per year for the less sensitive species (usually the Fathead minnow) and not less than twice per year for the more sensitive test species (usually the Ceriodaphnia dubia).

ii. CERTIFICATION - The permittee must certify in writing that no test failures have occurred and that all tests meet all test acceptability criteria in Item C.i. above. In addition the permittee must provide a list with each test performed including test initiation date, species, NOECs for lethal and sub-lethal effects and the maximum coefficient of variation for the controls. Upon review and acceptance of this information the agency will issue a letter of confirmation of the monitoring frequency reduction. A copy of the letter will be forwarded to the agency's Permit Compliance System section to update the permit reporting requirements.

iii. SUB-LETHAL OR SURVIVAL FAILURES - Monthly retesting is not required if the permittee is performing a TRE.

iv. Any monitoring frequency reduction granted applies only until the expiration date of this permit, at which time the monitoring frequency for both test species reverts to once per quarter until the permit is re-issued.

13. Cooling Water Intake Structures (CWIS)

The permittee must operate the cooling water intake structures based on the current design, location, and utilization rate to minimize impingement mortality and entrainment of aquatic organisms. This will meet the site-specific BTA Standards for Impingement Mortality and Entrainment as required by 40 CFR 125.94(c) and (d), respectively.

14. Priority Pollutant Scan

The permittee must conduct a Priority Pollutant Scan at Outfall 002 at the next discharge from the outfall. These results must be submitted to the Department for review to determine if reasonable potential for water quality violations exists. The permittee shall notify the Permits Branch of the Office of Water Quality within 7 days of the resumption of discharge through Outfall 002.

15. In accordance with 40 CFR 122.98(b)(1), nothing in this permit authorizes take for the purposes of a facility's compliance with the Endangered Species Act.

16. Cooling Water Intake Structure (CWIS) Annual Certification Statement and Report

    An annual certification statement and report must be submitted to the Department each year by the anniversary date of the effective date of the permit. The certification statement and report must be signed by the Responsible Official for the permit.

    A. The report must include a summary of any modifications to, or changes in the operation of, the CWIS at your facility that impacts cooling water withdrawals. In addition, any revisions to the information required in 40 CFR 122.21(r) must be submitted with the next permit renewal application.

    B. If the information contained in the previous year's annual certification statement and report is still pertinent, a letter stating such, signed by the Responsible Official for the permit, may be submitted to the Department, along with any applicable data. The letter will meet the requirements of this part for an annual certification statement and report.

17. Visual inspections of the CWIS

    Visual inspections of the on-shore portions of the CWIS shall be conducted during the period the CWIS is in operation. Inspections shall be conducted at least weekly to ensure that any technologies operated to comply with 40 CFR 125.94 are maintained and operated to function as designed. Records of the inspections shall be maintained on-site for a period of 3 years.

18. Recordkeeping for the CWIS

    A. Records must be kept of all submissions that are part of the permit application until the subsequent permit is issued, or 3 years (in accordance with Part III.C.7), whichever is greater, to document compliance with the requirements of this permit.

    B. All records supporting the Director's Determination of BTA for Entrainment under §125.98(f) must be retained until such time as the Director revises the Determination of BTA for Entrainment in the permit.

19. Oil, grease, or petrochemical substances shall not be discharged to the receiving waters to the extent that they produce globules or other residue or any visible, colored film on the surface or coat the banks and/or bottoms of the waterbody or adversely affect any of the associated biota. No discharge shall cause visible sheen as defined in Part IV of this permit. Any occurrences of the above referenced effects resulting from activities of the permittee shall be reported in accordance with Permit III.D.6.

PART III
STANDARD CONDITIONS

SECTION A – GENERAL CONDITIONS

1. **Duty to Comply**

The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the federal Clean Water Act and the Arkansas Water and Air Pollution Control Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; and/or for denial of a permit renewal application. **Any values reported in the required Discharge Monitoring Report (DMR) which are in excess of an effluent limitation specified in Part I shall constitute evidence of violation of such effluent limitation and of this permit.**

2. **Penalties for Violations of Permit Conditions**

The Arkansas Water and Air Pollution Control Act provides that any person who violates any provisions of a permit issued under the Act shall be guilty of a misdemeanor and upon conviction thereof shall be subject to imprisonment for not more than one (1) year, or a fine of not more than twenty-five thousand dollars ($25,000) or by both such fine and imprisonment for each day of such violation. Any person who violates any provision of a permit issued under the Act may also be subject to civil penalty in such amount as the court shall find appropriate, not to exceed ten thousand dollars ($10,000) for each day of such violation. The fact that any such violation may constitute a misdemeanor shall not be a bar to the maintenance of such civil action.

3. **Permit Actions**

This permit may be modified, revoked and reissued, or terminated for cause including, but not limited to the following:

A. Violation of any terms or conditions of this permit.
B. Obtaining this permit by misrepresentation or failure to disclose fully all relevant facts.
C. A change in any conditions that requires either a temporary or permanent reduction or elimination of the authorized discharge.
D. A determination that the permitted activity endangers human health or the environment and can only be regulated to acceptable levels by permit modification or termination.
E. Failure of the permittee to comply with the provisions of APC&EC Regulation No. 9 (Permit fees) as required by Part III.A.11 herein.

The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

4. **Toxic Pollutants**

Notwithstanding Part III.A.3, if any toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is promulgated under APC&EC Regulation No. 2, as amended, or Section 307(a) of the Clean Water Act for a toxic pollutant which is present in the discharge and that standard or prohibition is more stringent than any limitations on the pollutant in this permit, this permit shall be modified or revoked and reissued to conform to the toxic effluent standards or prohibition and the permittee so notified.

The permittee shall comply with effluent standards, narrative criteria, or prohibitions established under APC&EC Regulation No. 2, as amended, or Section 307(a) of the Clean Water Act for toxic pollutants within the time provided in the regulations that establish those standards or prohibitions, even if the permit has not yet been modified to incorporate the requirement.

5. **Civil and Criminal Liability**

Except as provided in permit conditions for "Bypass of Treatment Facilities" (Part III.B.4), and "Upset" (Part III.B.5), nothing in this permit shall be construed to relieve the permittee from civil or criminal penalties for noncompliance. Any false or materially misleading representation or concealment of information required to be reported by the provisions of this permit or applicable state and federal statues or regulations which defeats the regulatory purposes of the permit may subject the permittee to criminal enforcement pursuant to the Arkansas Water and Air Pollution Control Act (Ark. Code Ann. § 8-4-101 et seq.).

6. **Oil and Hazardous Substance Liability**

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject to under Section 311 of the Clean Water Act.

7. **State Laws**

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable State law or regulation under authority preserved by Section 510 of the Clean Water Act.

8. **Property Rights**

The issuance of this permit does not convey any property rights of any sort, or any exclusive privileges, nor does it authorize any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of Federal, State, or local laws or regulations.

9. **Severability**

The provisions of this permit are severable, and if any provision of this permit, or the application of any provisions of this permit to any circumstance is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

10. **Applicable Federal, State or Local Requirements**

Permittees are responsible for compliance with all applicable terms and conditions of this permit. Receipt of this permit does not relieve any operator of the responsibility to comply with any other applicable federal requirements such as endangered species, state or local statute, ordinance or regulation.

11. **Permit Fees**

The permittee shall comply with all applicable permit fee requirements (i.e., including annual permit fees following the initial permit fee that will be invoiced every year the permit is active) for wastewater discharge permits as described in APC&EC Regulation No. 9 (Regulation for the Fee System for Environmental Permits). Failure to promptly remit all required fees shall be grounds for the Director to initiate action to terminate this permit under the provisions of 40 CFR Parts 122.64 and 124.5(d), as adopted in APC&EC Regulation No. 6 and the provisions of APC&EC Regulation No. 8.

SECTION B – OPERATION AND MAINTENANCE OF POLLUTION CONTROLS

1. **Proper Operation and Maintenance**

A. The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems which are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of the permit.

B. The permittee shall provide an adequate operating staff which is duly qualified to carryout operation, maintenance, and testing functions required to ensure compliance with the conditions of this permit.

2. **Need to Halt or Reduce not a Defense**

It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit. Upon reduction, loss, or failure of the treatment facility, the permittee shall, to the extent necessary to maintain compliance with its permit, control

production or discharges or both until the facility is restored or an alternative method of treatment is provided. This requirement applies, for example, when the primary source of power for the treatment facility is reduced, is lost, or alternate power supply fails.

3. **Duty to Mitigate**

The permittee shall take all reasonable steps to minimize or prevent any discharge in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment or the water receiving the discharge.

4. **Bypass of Treatment Facilities**

"Bypass" means the intentional diversion of waste streams from any portion of a treatment facility, as defined at 40 CFR 122.41(m)(1)(i).

A. Bypass not exceeding limitation

The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of Parts III.B.4.B and 4.C.

B. Notice

1. Anticipated bypass. If the permittee knows in advance of the need for a bypass, it shall submit prior notice, if possible at least ten days before the date of the bypass.
2. Unanticipated bypass. The permittee shall submit notice of an unanticipated bypass as required in Part III.D.6 (24-hour notice).

C. Prohibition of bypass

1. Bypass is prohibited and the Director may take enforcement action against a permittee for bypass, unless:

(a) Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage.
(b) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if the permittee could have installed adequate backup equipment to prevent a bypass which occurred during normal or preventive maintenance.
(c) The permittee submitted notices as required by Part III.B.4.B.

2. The Director may approve an anticipated bypass, after considering its adverse effects, if the Director determines that it will meet the three conditions listed above in Part III.B.4.C(1).

5. **Upset Conditions**

A. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations if the requirements of Part III.B.5.B of this section are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.

B. Conditions necessary for demonstration of upset. A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:

1. An upset occurred and that the permittee can identify the specific cause(s) of the upset.
2. The permitted facility was at the time being properly operated.
3. The permittee submitted notice of the upset as required by Part III.D.6.
4. The permittee complied with any remedial measures required by Part III.B.3.

C. Burden of proof. In any enforcement proceeding, the permittee seeking to establish the occurrence of an upset has the burden of proof.

6. **Removed Substances**

A. Solids, sludges, filter backwash, or other pollutants removed in the course of treatment or control of wastewaters shall be disposed of in a manner such as to prevent any pollutant from such materials from entering waters of the State. The Permittee must comply with all applicable state and Federal regulations governing the disposal of sludge, including but not limited to 40 CFR Part 503, 40 CFR Part 257, and 40 CFR Part 258.

B. Any changes to the permittee's disposal practices described in the Fact Sheet, as derived from the permit application, will require at least 180 days prior notice to the Director to allow time for additional permitting. Please note that the 180 day notification requirement may be waived if additional permitting is not required for the change.

7. **Power Failure**

The permittee is responsible for maintaining adequate safeguards to prevent the discharge of untreated or inadequately treated wastes during electrical power failure either by means of alternate power sources, standby generators, or retention of inadequately treated effluent.

SECTION C – MONITORING AND RECORDS

1. **Representative Sampling**

Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge during the entire monitoring period. All samples shall be taken at the monitoring points specified in this permit and, unless otherwise specified,

before the effluent joins or is diluted by any other waste stream, body of water, or substance. Monitoring points shall not be changed without notification to and the approval of the Director. Intermittent discharge shall be monitored.

2. **Flow Measurement**

Appropriate flow measurement devices and methods consistent with accepted scientific practices shall be selected and used to ensure the accuracy and reliability of measurements of the volume of monitored discharges. The devices shall be installed, calibrated, and maintained to ensure the accuracy of the measurements are consistent with the accepted capability of that type of device. Devices selected shall be capable of measuring flows with a maximum deviation of less than +/- 10% from true discharge rates throughout the range of expected discharge volumes and shall be installed at the monitoring point of the discharge.

Calculated Flow Measurement

For calculated flow measurements that are performed in accordance with either the permit requirements or a Department approved method (i.e., as allowed under Part II.3), the +/- 10% accuracy requirement described above is waived. This waiver is only applicable when the method used for calculation of the flow has been reviewed and approved by the Department.

3. **Monitoring Procedures**

Monitoring must be conducted according to test procedures approved under 40 CFR Part 136, unless other test procedures have been specified in this permit. The permittee shall calibrate and perform maintenance procedures on all monitoring and analytical instrumentation at intervals frequent enough to ensure accuracy of measurements and shall ensure that both calibration and maintenance activities will be conducted. An adequate analytical quality control program, including the analysis of sufficient standards, spikes, and duplicate samples to ensure the accuracy of all required analytical results shall be maintained by the permittee or designated commercial laboratory. At a minimum, spikes and duplicate samples are to be analyzed on 10% of the samples.

4. **Penalties for Tampering**

The Arkansas Water and Air Pollution Control Act provides that any person who falsifies, tampers with, or knowingly renders inaccurate, any monitoring device or method required to be maintained under the Act shall be guilty of a misdemeanor and upon conviction thereof shall be subject to imprisonment for not more than one (1) year or a fine of not more than ten thousand dollars ($10,000) or by both such fine and imprisonment.

5. **Reporting of Monitoring Results**

40 CFR 127.11 (a)(1) and 40 CFR 127.16 (a) require that monitoring reports must be reported on a Discharge Monitoring Reports (DMR) and filed electronically. Signatory Authorities must initially request access for a NetDMR account. Once a NetDMR account is

established, access to electronic filing should use the following link https://cdx.epa.gov. Permittees who are unable to file electronically may request a waiver from the Director in accordance with 40 CFR 127.15. Monitoring results obtained during the previous monitoring period shall be summarized and reported on a DMR dated and submitted no later than the 25th day of the month, following the completed reporting period beginning on the effective date of the permit.

6. **Additional Monitoring by the Permittee**

If the permittee monitors any pollutant more frequently than required by this permit, using test procedures approved under 40 CFR Part 136 or as specified in this permit, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR. Such increased frequency shall also be indicated on the DMR.

7. **Retention of Records**

The permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit for a period of at least 3 years from the date of the sample, measurement, report, or application. This period may be extended by request of the Director at any time.

8. **Record Contents**

Records and monitoring information shall include:

A. The date, exact place, time and methods of sampling or measurements, and preservatives used, if any.
B. The individual(s) who performed the sampling or measurements.
C. The date(s) and time analyses were performed.
D. The individual(s) who performed the analyses.
E. The analytical techniques or methods used.
F. The measurements and results of such analyses.

9. **Inspection and Entry**

The permittee shall allow the Director, or an authorized representative, upon the presentation of credentials and other documents as may be required by law, to:

A. Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit.
B. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit.
C. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit.

D. Sample, inspect, or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Clean Water Act, any substances or parameters at any location.

SECTION D – REPORTING REQUIREMENTS

1. **Planned Changes**

The Permittee shall give notice to the Director as soon as possible but no later than 180 days prior to any planned physical alterations or additions to the permitted facility [40 CFR 122.41(l)]. Notice is required only when:

A. The alteration or addition to a permitted facility may meet one of the criteria for new sources at 40 CFR 122.29(b).
B. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants subject to effluent limitations in the permit, or to the notification requirements under 40 CFR 122.42(b).

2. **Anticipated Noncompliance**

The permittee shall give advance notice to the Director of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

3. **Transfers**

The permit is nontransferable to any person except after notice to the Director. The Director may require modification or revocation and reissuance of the permit to change the name of the permittee and incorporate such other requirements as may be necessary under the Act.

4. **Monitoring Reports**

Monitoring results shall be reported at the intervals and in the form specified in Part III.C.5. **Discharge Monitoring Reports must be submitted even when no discharge occurs during the reporting period.**

5. **Compliance Schedule**

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 14 days following each schedule date. Any reports of noncompliance shall include the cause of noncompliance, any remedial actions taken, and the probability of meeting the next scheduled requirement.

6. **Twenty-four Hour Report**

A. The permittee shall report any noncompliance which may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the permittee becomes aware of the circumstances. A written submission shall also be provided within 5 days of the time the permittee becomes aware of the circumstances. The written submission shall contain the following information:

1. A description of the noncompliance and its cause.
2. The period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue.
3. Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

B. The following shall be included as information which must be reported within 24 hours:

1. Any unanticipated bypass which exceeds any effluent limitation in the permit.
2. Any upset which exceeds any effluent limitation in the permit.
3. Violation of a maximum daily discharge limitation for any of the pollutants listed by the Director in Part I of the permit to be reported within 24 hours to the Enforcement Section of the Office of Water Quality of the ADEQ.

C. The Director may waive the written report on a case-by-case basis if the oral report has been received within 24 hours to the Enforcement Section of the Office of Water Quality of the ADEQ.

7. **Other Noncompliance**

The permittee shall report all instances of noncompliance not reported under Parts III.D.4, 5, and 6, at the time monitoring reports are submitted. The reports shall contain the information listed at Part III.D.6.

8. **Changes in Discharge of Toxic Substances for Industrial Dischargers**

The Director shall be notified as soon as the permittee knows or has reason to believe:

A. That any activity has occurred or will occur which would result in the discharge on a routine or frequent basis of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the "notification levels" described in 40 CFR Part 122.42(a)(1).

B. That any activity has occurred or will occur which would result in any discharge on a non-routine or infrequent basis of a toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the "notification levels" described in 40 CFR Part 122.42(a)(2).

9. **Duty to Provide Information**

The permittee shall furnish to the Director, within a reasonable time, any information which the Director may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The permittee shall also furnish to the Director, upon request, copies of records required to be kept by this permit. Information shall be submitted in the form, manner and time frame requested by the Director.

10. **Duty to Reapply**

If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for and obtain a new permit. The complete application shall be submitted at least 180 days before the expiration date of this permit. The Director may grant permission to submit an application less than 180 days in advance but no later than the permit expiration date. Continuation of expiring permits shall be governed by regulations promulgated in APC&EC Regulation No. 6.

11. **Signatory Requirements**

All applications, reports, or information submitted to the Director shall be signed and certified as follows:

A. All **permit applications** shall be signed as follows:

1. For a corporation: by a responsible corporate officer. For the purpose of this section, a responsible corporate officer means:

   (a) A president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation.
   (b) The manager of one or more manufacturing, production, or operation facilities, provided: the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

2. For a partnership or sole proprietorship: by a general partner or proprietor, respectively.

3. For a municipality, State, Federal, or other public agency, by either a principal executive officer or ranking elected official. For purposes of this section, a principal executive officer of a Federal agency includes:

   (a) The chief executive officer of the agency.
   (b) A senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency.

B. All **reports** required by the permit and **other information** requested by the Director shall be signed by a person described above or by a duly authorized representative of that person. A person is a duly authorized representative only if:

   1. The authorization is made in writing by a person described above.
   2. The authorization specified either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a well or a well field, superintendent, or position of equivalent responsibility. (A duly authorized representative may thus be either a named individual or any individual occupying a named position).
   3. The written authorization is submitted to the Director.

C. Certification. Any person signing a document under this section shall make the following certification:

   "I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

12. **Availability of Reports**

Except for data determined to be confidential under 40 CFR Part 2 and APC&EC Regulation No. 6, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the Department of Environmental Quality. As required by the Regulations, the name and address of any permit applicant or permittee, permit applications, permits, and effluent data shall not be considered confidential.

13. **Penalties for Falsification of Reports**

The Arkansas Air and Water Pollution Control Act provides that any person who knowingly makes any false statement, representation, or certification in any application, record, report, plan, or other document filed or required to be maintained under this permit shall be subject to civil penalties specified in Part III.A.2 and/or criminal penalties under the authority of the Arkansas Water and Air Pollution Control Act (Ark. Code Ann. § 8-4-101 et seq.).

14. **Other Information**

Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Director, it shall promptly submit such facts or information.

PART IV
DEFINITIONS

All definitions contained in Section 502 of the Clean Water Act and 40 CFR 122.2 shall apply to this permit and are incorporated herein by reference. Additional definitions of words or phrases used in this permit are as follows:

1. **"Act"** means the Clean Water Act, Public Law 95-217 (33.U.S.C. 1251 et seq.) as amended.
2. **"Administrator"** means the Administrator of the U.S. Environmental Protection Agency.
3. **"APC&EC"** means the Arkansas Pollution Control and Ecology Commission.
4. **"Applicable effluent standards and limitations"** means all State and Federal effluent standards and limitations to which a discharge is subject under the Act, including, but not limited to, effluent limitations, standards of performance, toxic effluent standards and prohibitions, and pretreatment standards.
5. **"Applicable water quality standards"** means all water quality standards to which a discharge is subject under the federal Clean Water Act and which has been (a) approved or permitted to remain in effect by the Administrator following submission to the Administrator pursuant to Section 303(a) of the Act, or (b) promulgated by the Director pursuant to Section 303(b) or 303(c) of the Act, and standards promulgated under (APC&EC) Regulation No. 2, as amended.
6. **"Best Management Practices (BMPs)"** are activities, practices, maintenance procedures, and other management practices designed to prevent or reduce the pollution of waters of the State. BMPs also include treatment technologies, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw sewage. BMPs may include structural devices or nonstructural practices.
7. **"Bypass"** means the intentional diversion of waste streams from any portion of a treatment facility, as defined at 40 CFR 122.41(m)(1)(i).
8. **"Composite sample"** is a mixture of grab samples collected at the same sampling point at different times, formed either by continuous sampling or by mixing a minimum of 4 effluent portions collected at equal time intervals (but not closer than one hour apart) during operational hours, within the 24-hour period, and combined proportional to flow or a sample collected at more frequent intervals proportional to flow over the 24-hour period.
9. **"Daily Discharge"** means the discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling.
   A. **Mass Calculations**: For pollutants with limitations expressed in terms of mass, the "daily discharge" is calculated as the total mass of pollutant discharged over the sampling day.
   B. **Concentration Calculations**: For pollutants with limitations expressed in other units of measurement, the "daily discharge" is calculated as the average measurement of the pollutant over the day.
10. **"Daily Maximum"** discharge limitation means the highest allowable "daily discharge" during the calendar month.
11. **"Department"** means the Arkansas Department of Environmental Quality (**ADEQ**).
12. **"Director"** means the Director of the Arkansas Department of Environmental Quality.
13. **"Dissolved oxygen limit"** shall be defined as follows:
    A. When limited in the permit as a minimum monthly average, shall mean the lowest acceptable monthly average value, determined by averaging all samples taken during the

calendar month.

B. When limited in the permit as an instantaneous minimum value, shall mean that no value measured during the reporting period may fall below the stated value.

14. **"E-Coli"** a sample consists of one effluent grab portion collected during a 24-hour period at peak loads. For E-Coli, report the Daily Maximum as the highest "daily discharge" during the calendar month, and the Monthly Average as the geometric mean of all "daily discharges" within a calendar month, in colonies per 100 ml.
15. **"Fecal Coliform Bacteria (FCB)"** a sample consists of one effluent grab portion collected during a 24-hour period at peak loads. For FCB, report the Daily Maximum as the highest "daily discharge" during the calendar month, and the Monthly Average as the geometric mean of all "daily discharges" within a calendar month, in colonies per 100 ml.
16. **"Grab sample"** means an individual sample collected in less than 15 minutes in conjunction with an instantaneous flow measurement.
17. **"Industrial User**" means a nondomestic discharger, as identified in 40 CFR Part 403, introducing pollutants to a POTW.
18. **"Instantaneous flow measurement"** means the flow measured during the minimum time required for the flow-measuring device or method to produce a result in that instance. To the extent practical, instantaneous flow measurements coincide with the collection of any grab samples required for the same sampling period so that together the samples and flow are representative of the discharge during that sampling period.
19. **"Instantaneous Maximum"** when limited in the permit as an instantaneous maximum value, shall mean that no value measured during the reporting period may fall above the stated value.
20. **"Instantaneous Minimum"** an instantaneous minimum value, shall mean that no value measured during the reporting period may fall below the stated value.
21. **"Monthly Average"** means the highest allowable average of "daily discharges" over a calendar month, calculated as the sum of all "daily discharges" measured during a calendar month divided by the number of "daily discharges" measured during that month. For Fecal Coliform Bacteria (FCB) or E-Coli, report the Monthly Average as the geometric mean of all "daily discharges" within a calendar month.
22. **"Monitoring and Reporting"**

When a permit becomes effective, monitoring requirements are of the immediate period of the permit effective date. Where the monitoring requirement for an effluent characteristic is monthly or more frequently, the Discharge Monitoring Report (DMR) shall be submitted by the 25th of the month following the sampling. Where the monitoring requirement for an effluent characteristic is Quarterly, Semi-Annual, Annual, or Yearly, the DMR shall be submitted by the 25th of the month following the monitoring period end date.

A. **MONTHLY:**
is defined as a calendar month or any portion of a calendar month for monitoring requirement frequency of once/month or more frequently.

B. **BI-MONTHLY:**
is defined as two (2) calendar months or any portion of 2 calendar months for monitoring requirement frequency of once/2 months or more frequently.

C. **QUARTERLY:**
1. is defined as a **fixed calendar quarter** or any part of the fixed calendar quarter for a non-seasonal effluent characteristic with a measurement frequency of once/quarter. Fixed calendar quarters are: January through March, April through June, July

through September, and October through December.

2. is defined as a **fixed three month period** (or any part of the fixed three month period) of or dependent upon the seasons specified in the permit for a seasonal effluent characteristic with a monitoring requirement frequency of once/quarter that does not coincide with the fixed calendar quarter. Seasonal calendar quarters are: May through July, August through October, November through January, and February through April.

D. **SEMI-ANNUAL:**
is defined as the fixed time periods January through June, and July through December (or any portion thereof) for an effluent characteristic with a measurement frequency of once/6 months or twice/year.

E. **ANNUAL or YEARLY:**
is defined as a fixed calendar year or any portion of the fixed calendar year for an effluent characteristic or parameter with a measurement frequency of once/year. A calendar year is January through December, or any portion thereof.

23. **"National Pollutant Discharge Elimination System"** means the national program for issuing, modifying, revoking and reissuing, terminating, monitoring and enforcing permits, and imposing and enforcing pretreatment requirements under Sections 307, 402, 318, and 405 of the Clean Water Act.
24. **"POTW"** means Publicly Owned Treatment Works;
25. **"Reduction of CBOD5/BOD5 and TSS in mg/l Formula**"
[(Influent – Effluent) / Influent] x 100
26. **"Severe property damage"** means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in products.
27. **"Sewage sludge"** means the solids, residues, and precipitate separated from or created in sewage by the unit processes at a POTW. Sewage as used in this definition means any wastes, including wastes from humans, households, commercial establishments, industries, and stormwater runoff that are discharged to or otherwise enter a POTW.
28. **"7-Day Average"** Also known as "average weekly" means the highest allowable average of "daily discharges" over a calendar week, calculated as the sum of all "daily discharges" measured during a calendar week divided by the number of "daily discharges" measured during that week. The 7-Day Average for Fecal Coliform Bacteria (FCB) or E-Coli is the geometric mean of the "daily discharges" of all effluent samples collected during a calendar week in colonies per 100 ml.
29. **"Treatment works"** means any devices and systems used in storage, treatment, recycling, and reclamation of municipal sewage and industrial wastes, of a liquid nature to implement section 201 of the Act, or necessary to recycle reuse water at the most economic cost over the estimated life of the works, including intercepting sewers, sewage collection systems, pumping, power and other equipment, and alterations thereof; elements essential to provide a reliable recycled supply such as standby treatment units and clear well facilities, and any works, including site acquisition of the land that will be an integral part of the treatment process or is used for ultimate disposal of residues resulting from such treatment.
30. **Units of Measure:**
"MGD" shall mean million gallons per day.

"mg/l" shall mean milligrams per liter or parts per million (ppm).
"µg/l" shall mean micrograms per liter or parts per billion (ppb).
"cfs" shall mean cubic feet per second.
"ppm" shall mean parts per million.
"s.u." shall mean standard units.

31. **"Upset"** means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the permittee. Any upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, lack of preventive maintenance, or careless of improper operations.
32. **"Visible sheen"** means the presence of a film or sheen upon or a discoloration of the surface of the discharge. A sheen can also be from a thin glistening layer of oil on the surface of the discharge.
33. **"Weekday"** means Monday – Friday.

Final Fact Sheet

This Fact Sheet is for information and justification of the permit limits only. Please note that it is not enforceable. This permitting decision is for the renewal of discharge Permit Number AR0001147 with Arkansas Department of Environmental Quality (ADEQ) Facility Identification Number (AFIN) 30-00011 to discharge to Waters of the State.

1. **PERMITTING AUTHORITY**

The issuing office is:

Arkansas Department of Environmental Quality
5301 Northshore Drive
North Little Rock, Arkansas 72118-5317

2. **APPLICANT**

The applicant's mailing address is:

Entergy Arkansas, LLC
Lake Catherine Plant
P.O. Box 551
Little Rock, AR 72203-0551

The facility address is:

Entergy Arkansas, LLC
Lake Catherine Plant
141 West County Line Road
Malvern, AR 72104

3. **PREPARED BY**

The permit was prepared by:

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4. **PERMIT ACTIVITY**

Previous Permit Effective Date:	April 1, 2013
Previous Permit Modification Date:	April 1, 2014
Previous Permit Expiration Date:	March 31, 2018

The permittee submitted a permit renewal application on September 21, 2017, and additional information was received on March 27, 2018. The current discharge permit is reissued for a 5-year term in accordance with regulations promulgated at 40 CFR Part 122.46(a).

DOCUMENT ABBREVIATIONS

In the document that follows, various abbreviations are used. They are as follows:

APC&EC - Arkansas Pollution Control and Ecology Commission
BAT - best available technology economically achievable

BCT - best conventional pollutant control technology
BMP - best management practice
BOD_5 - five-day biochemical oxygen demand
BPJ - best professional judgment
BPT - best practicable control technology currently available
$CBOD_5$ - carbonaceous biochemical oxygen demand
CD - critical dilution
CFR - Code of Federal Regulations
cfs - cubic feet per second
COD - chemical oxygen demand
COE - United States Corp of Engineers
CPP - continuing planning process
CWA - Clean Water Act
DMR - discharge monitoring report
DO - dissolved oxygen
ELG - effluent limitation guidelines
EPA - United States Environmental Protection Agency
ESA - Endangered Species Act
FCB - fecal coliform bacteria
gpm - gallons per minute
MGD - million gallons per day
MQL - minimum quantification level
NAICS - North American Industry Classification System
NH_3-N - ammonia nitrogen
$NO_3 + NO_2$-N - nitrate + nitrite nitrogen
NPDES - National Pollutant Discharge Elimination System
O&G - oil and grease
Reg. 2 - APC&EC Regulation No. 2
Reg. 6 - APC&EC Regulation No. 6
Reg. 8 - APC&EC Regulation No. 8
Reg. 9 - APC&EC Regulation No. 9
RP - reasonable potential
SIC - standard industrial classification
TDS - total dissolved solids
TMDL - total maximum daily load
TP - total phosphorus
TRC - total residual chlorine
TSS - total suspended solids
UAA - use attainability analysis
USF&WS - United States Fish and Wildlife Service
USGS - United States Geological Survey
WET - Whole effluent toxicity
WQMP - water quality management plan
WQS - Water Quality standards
WWTP - wastewater treatment plant

Compliance and Enforcement History:

The compliance and enforcement history for this facility can be reviewed by using the following web link:

https://www.adeq.state.ar.us/downloads/WebDatabases/PermitsOnline/NPDES/PermitInformation/AR0001147_Compliance%20Review_20171120.pdf

5. SIGNIFICANT CHANGES FROM THE PREVIOUSLY ISSUED PERMIT

The permittee is responsible for carefully reading the permit in detail and becoming familiar with all of the changes therein:

1. The coordinates for the facility and all outfalls have been revised for accuracy.
2. Free Available Chlorine (FAC) limitations for Outfalls 001 and 002 have been included in the permit. See Sections 11.A and 11.E below for details.
3. The Copper limitations for Outfall 004 have been revised. See Sections 11.A, 11.E, and 11.F below for details.
4. Part II.4 has been deleted because the facility has coverage under IGP ARR001023.
5. Part II.19 has been added to specify that the discharge shall not produce visible oil and grease residue in the receiving stream.
6. The CWIS requirements in Part II.13 have been revised, and Parts II.15, II.16, and II.17 have been added. See Section 11.G below for details.
7. A requirement to conduct a Priority Pollutant Scan at the next discharge from Outfall 002, and to report the discharge within 7 days, has been added as Part II.14.
8. Part III.C.5 of the permit now requires that DMRs be submitted electronically via NetDMR.

6. RECEIVING STREAM SEGMENT AND DISCHARGE LOCATION

The outfalls are located at the following coordinates based on Google Earth using WQS84:

Outfall 001: Latitude: 34° 26’ 0.38” N; Longitude: 92° 54’ 13.7” W
Outfall 002: Latitude: 34° 25’ 59.7” N; Longitude: 92° 54’ 14.5” W
Outfall 003: Latitude: 34° 26’ 0.22” N; Longitude: 92° 54’ 11.9” W
Outfall 004: Latitude: 34° 26’ 7.44” N; Longitude: 92° 54’ 20.7” W
Outfall 005: Latitude: 34° 26’ 0.72” N; Longitude: 92° 54’ 13.5” W

The receiving waters named:

Lake Catherine, thence to the Ouachita River in Segment 2F of the Ouachita River Basin. The receiving stream with USGS Hydrologic Unit Code (H.U.C.) of 08040101 and Reach #001 is a Water of the State classified for primary and secondary contact recreation, raw water source for domestic (public and private), industrial, and agricultural water supplies; propagation of desirable species of fish and other aquatic life; and other compatible uses.

7. 303(d) LIST, TOTAL MAXIMUM DAILY LOADS, ENDANGERED SPECIES, AND ANTI-DEGRADATION CONSIDERATIONS

A. 303(d) List

The receiving stream is not on the 2016 303(d) list.

B. Applicable Total Maximum Daily Load (TMDL) Reports

There are no applicable TMDLs for the facility and the receiving stream.

C. Endangered Species

No comments on the application were received from the USF&WS during the 60-day review period required by 40 CFR 125.98(h). The draft permit and Fact Sheet were sent to the USF&WS for their review.

The Arkansas Natural Heritage Commission notified ADEQ that the following species of conservation concern are known to occur in the Ouachita River at or within five miles downstream of the outfall:

Alosa alabamae, Alabama shad-federal concern (species of concern)
Anguilla rostrata, American eel-state concern
Etheostoma clinton, beaded darter-state concern
Noturus lachneri, Ouachita madtom-state concern
Percina brucethompsoni, Ouachita darter-state concern
Percina uranidea, stargarzing darter-state concern

The limits in the permit are designed to protect all beneficial uses of the receiving waters, including propagation of desirable species of fish and other aquatic life, as well as other species which are directly, or indirectly, affected by the receiving waters, which includes the above species of concern. Therefore, ADEQ has determined that the final permit limits will serve to help protect the species of concern identified above.

D. Anti-Degradation

The limitations and requirements set forth in this permit for discharge into waters of the State are consistent with the Anti-degradation Policy and all other applicable water quality standards found in APC&EC Regulation No. 2.

8. **OUTFALL, TREATMENT PROCESS DESCRIPTION, AND FACILITY CONSTRUCTION**

The following is a description of the facility described in the application:

A. Flows: Outfall 001: 425 MGD (permitted monthly average flow limit)
Outfall 002: 230 MGD (permitted monthly average flow limit)
Outfall 003: 0.144 MGD (highest monthly average flow, March 2016 DMR)
Outfall 004: no discharge from this outfall since mid-1990's
Outfall 005: 0.039 MGD (highest monthly average flow, December 2016 DMR)

B. Type of Treatment: Outfalls 001 and 002 – none
Outfall 003 – oil/water separator
Outfall 004 – neutralization and reduction
Outfall 005 – neutralization

C. Discharge Description: Outfall 001: once through cooling water from unit 4
Outfall 002: once through cooling water from units 1, 2, and 3
Outfall 003: low volume wastewater consisting of floor drains, building sumps, and equipment drains within the turbine areas for Units 1, 2, 3, and 4
Outfall 004: chemical metal cleaning wastewater
Outfall 005: low volume wastewater consisting of boiler blowdown from Units 1, 2, 3, and 4, filter backwash from Unit 4, and regeneration wastewater

D. Facility Status: This facility was evaluated using the NPDES Permit Rating Worksheet (MRAT) to determine the correct permitting status. Since the facility's MRAT score of 600 is more than 80, this facility is classified as a major industrial.

E. Facility Construction: This permit does not authorize or approve the construction or modification of any part of the treatment system or facilities. Approval for such construction must be by permit issued under Reg. 6.202.

9. **ACTIVITY**

Under the Standard Industrial Classification (SIC) code of 4911 or North American Industry Classification System (NAICS) code of 221112, the applicant's activities are the operation of a steam electric power generating station. This station consists of four gas-fired units. Units 1 and 2 have a capacity of 40 MW each. Unit 3 has a capacity of 106 MW while Unit 4 has a capacity of approximately 547 MW. The facility uses once-through cooling water withdrawn from Lake Catherine through two cooling water intake structures (CWIS). One CWIS serves Units 1, 2, and 3, and one services Unit 4. Units 1, 2, and 3 are retired and are not in operation.

10. **SOLIDS PRACTICES**

Solids and water are periodically removed from sumps and oil/water separators. All solids shall be managed in accordance with Part III.B.6 of the permit.

11. DEVELOPMENT AND BASIS FOR PERMIT CONDITIONS

The Arkansas Department of Environmental Quality has determined to issue a permit for the discharge described in the application. Permit requirements are based on federal regulations (40 CFR Parts 122, 124, and Subchapter N), and regulations promulgated pursuant to the Arkansas Water and Air Pollution Control Act (Ark. Code Ann. 8-4-101 et seq.). All of the information contained in the application, including all of the submitted effluent testing data, was reviewed to determine the need for effluent limits and other permit requirements.

The following is an explanation of the derivation of the conditions of the permit and the reasons for them or, in the case of notices of intent to deny or terminate, reasons suggesting the decisions as required under 40 CFR Part 124.7.

Technology-Based Versus Water Quality-Based Effluent Limitations and Conditions

Following regulations promulgated at 40 CFR Part 122.44, the permit limits are based on either technology-based effluent limits pursuant to 40 CFR Part 122.44(a) or on State water quality standards and requirements pursuant to 40 CFR Part 122.44(d), whichever are more stringent as follows:

Parameter	Water Quality-Based		Technology-Based		Previous Permit		Final Permit	
	Monthly Avg. mg/l	Daily Max. mg/l	Monthly Avg. mg/l	Daily Max. mg/l	Monthly Avg. mg/l	Daily Max. mg/l	Monthly Avg. mg/l	Daily Max. mg/l
OUTFALL 001								
Flow	425	476	N/A	N/A	425	476	425	476
FAC*	N/A	N/A	0.2	0.5	N/A	N/A	0.2	0.5
TRC*	N/A	N/A	N/A	0.2	N/A	0.2	N/A	0.2
Temperature	N/A	95°F	N/A	N/A	N/A	95°F	N/A	95°F
pH	6.0-9.0 s.u.		6.0-9.0 s.u.		6.0-9.0 s.u.		6.0-9.0 s.u.	
OUTFALL 002								
Flow	230	240	N/A	N/A	230	240	230	240
FAC*	N/A	N/A	0.2	0.5	N/A	N/A	0.2	0.5
TRC*	N/A	N/A	N/A	0.2	N/A	0.2	N/A	0.2
Temperature	N/A	95°F	N/A	N/A	N/A	95°F	N/A	95°F
pH	6.0-9.0 s.u.		6.0-9.0 s.u.		6.0-9.0 s.u.		6.0-9.0 s.u.	

Parameter	Water Quality-Based		Technology-Based		Previous Permit		Final Permit	
	Monthly Avg. mg/l	Daily Max. mg/l	Monthly Avg. mg/l	Daily Max. mg/l	Monthly Avg. mg/l	Daily Max. mg/l	Monthly Avg. mg/l	Daily Max. mg/l
OUTFALL 003								
TSS	N/A	N/A	30.0	100.0	30.0	100.0	30.0	100.0
O&G	10.0	15.0	15.0	20.0	10.0	15.0	10.0	15.0
pH	6.0-9.0 s.u.		6.0-9.0 s.u.		6.0-9.0 s.u.		6.0-9.0 s.u.	
OUTFALL 004								
TSS	N/A	N/A	30.0	100.0	30.0	100.0	30.0	100.0
O&G	10.0	15.0	15.0	20.0	10.0	15.0	10.0	15.0
Total Copper	257 µg/l	516 µg/l	1.0	1.0	1.0	1.0	257 µg/l	516 µg/l
Total Iron	N/A	N/A	1.0	1.0	1.0	1.0	1.0	1.0
pH	6.0-9.0 s.u.		6.0-9.0 s.u.		6.0-9.0 s.u.		6.0-9.0 s.u.	
OUTFALL 005								
TSS	N/A	N/A	N/A	N/A	30.0	100.0	30.0	100.0
O&G	10.0	15.0	15.0	20.0	10.0	15.0	10.0	15.0
pH	6.0-9.0 s.u.		6.0-9.0 s.u.		6.0-9.0 s.u.		6.0-9.0 s.u.	

***** See Section 11.E. for discussion regarding Water Quality evaluation of the ELG limitations

A. **Justification for Limitations and Conditions of the Final Permit**

Parameter	Water Quality or Technology	Justification
OUTFALL 001 & OUTFALL 002		
Flow	Water Quality	Reg. 2.502, CWA § 402(o), and previous permit
FAC	Technology	40 CFR 423.12(b)(6)
TRC	Water Quality	40 CFR 423.13(b)(1)
Temperature	Water Quality	Reg. 2.502, CWA § 402(o), and previous permit
pH	Water Quality	Reg. 2.504, CWA § 402(o), and previous permit
OUTFALL 003		
TSS	Technology	40 CFR 423.12(b)(3), 40 CFR 122.44(l), and previous permit
O&G	Water Quality	Reg. 2.510, CWA § 402(o), and previous permit
pH	Water Quality	Reg. 2.504, CWA § 402(o), and previous permit

Parameter	Water Quality or Technology	Justification
OUTFALL 004		
TSS	Technology	40 CFR 423.13(e), 40 CFR 122.44(l), and previous permit
O&G	Water Quality	Reg. 2.510, CWA § 402(o), and previous permit
Total Copper	Water Quality	Reg. 2.508
Total Iron	Technology	40 CFR 423.13(e), 40 CFR 122.44(l), and previous permit
pH	Water Quality	Reg. 2.504, CWA § 402(o), and previous permit
OUTFALL 005		
TSS	Technology	40 CFR 423.12(b)(3), 40 CFR 122.44(l), and previous permit
O&G	Water Quality	Reg. 2.510, CWA § 402(o), and previous permit
pH	Water Quality	Reg. 2.504, CWA § 402(o), and previous permit

B. **Anti-backsliding**

The permit is consistent with the requirements to meet Anti-backsliding provisions of the Clean Water Act (CWA), Section 402(o) [40 CFR 122.44(l)]. The final effluent limitations for reissuance permits must be as stringent as those in the previous permit, unless the less stringent limitations can be justified using exceptions listed in CWA 402(o)(2), CWA 303(d)(4), or 40 CFR 122.44(l)(2)(i).

The permit meets or exceeds the requirements of the previous permit.

C. **Limits Calculations**

1. Mass limits:

In accordance with 40 CFR 122.45(f)(1), all pollutants limited in permits shall have limitations expressed in terms of mass if feasible. 40 CFR 122.45(f)(2) allows for pollutants which are limited in terms of mass to also be limited in terms of other units of measurement.

The calculation of the loadings (lbs per day) for TRC from Outfall 001 and Outfall 002 uses the following equation:

lbs/day = Concentration (mg/l) x Flow (MGD) x 8.34 x 2/24

where Flow = 425 MGD for Monthly Avg. from Outfall 001
476 MGD for Daily Max. from Outfall 001
230 MGD for Monthly Avg. from Outfall 002
240 MGD for Daily Max. from Outfall 002

The factor 2/24 is based on the requirement that FAC is only allowed to be discharged from the generating units for a maximum of 2 hours per day (1 day = 24 hours).

Mass limits have not been included at Outfalls 003 and 005 because of the high variability of the flows.

Mass limits are not included for Outfall 004 since the discharges are infrequent. No discharge from Outfall 004 has occurred since 1996.

2. Daily Maximum Limits:

The daily maximum limits for O&G are based on Reg. 2.510.

The temperature limits at Outfalls 001 and 002 are based on Reg. 2.502.

All other daily maximum limits are based on 40 CFR Part 423.

D. Applicable Effluent Limitations Guidelines

Discharges from facilities of this type are covered by Federal effluent limitations guidelines promulgated under 40 CFR Part 423 – Steam Electric Power Generating Point Source Category.

40 CFR 423.12(b)(6) and 423.13(b)(1) are applicable to Outfall 001 and Outfall 002 because the discharges from these outfalls consist of once through cooling water.

40 CFR 423.12(b)(3) is applicable to Outfall 003 and Outfall 005 because the discharges from these outfalls consist of low volume wastewater.

40 CFR 423.13(e) is applicable to Outfall 004 because the discharge from this outfall consists of chemical metal cleaning wastes.

E. Water Quality Standards for ELG-limited pollutants

Outfalls 001 and 002

The ELGs promulgated under 40 CFR 423.12 and 423.13 include limitations for TRC and FAC. The TRC and FAC ELGs apply to Outfalls 001 and 002. 40 CFR 122.44(d) and (d)(1) require NPDES discharge permits to include:

"any requirements in addition to *or more stringent than* promulgated effluent limitations guidelines or standards under sections 301, 304, 306, 307, 318 and 405 of CWA necessary to:

(1) Achieve water quality standards established under section 303 of the CWA, *including State narrative criteria for water quality*." Emphasis added.

There are no numerical water quality standards for TRC or FAC in Reg. 2.508. However, the narrative water quality standard in Reg. 2.409 forbids the discharge of toxic pollutants in amounts which are toxic. Both Outfall 001 and 002 have Whole Effluent Toxicity (WET) testing requirements. Part V – Chlorination/Dechlorination of the ADEQ Discharge Permit, Toxic Control Implementation Procedure of the CPP specifies the use of WET testing (biomonitoring) in the case of facilities that use chlorination without dechlorination. The CPP states:

> "If the chlorinated effluent is non-toxic and significant dilution is provided in the receiving stream (e.g., the Arkansas or Mississippi River) the permit will rely on biomonitoring to evaluate potential impacts from chlorine. If the toxicity test results show toxicity problems, a schedule of compliance to install dechlorination is required."

WET testing results for Outfalls 001 and 002 from June 2013 through December 2018 show no failures, and a minimum No Observable Effect Concentration for all tests of 96% (the Critical Dilution). This indicates that the effluent is non-toxic. The 7Q10 for the receiving stream is greater than 100 cfs, which classifies it as a large river.

Based on the results of WET testing, and the requirements in the CPP, the discharge meets the narrative water quality standard in Reg. 2.409. Since WET testing monitors the combined effects of all pollutants in the effluent, it is an acceptable replacement for a concentration limit in this circumstance (it should be noted that FAC is a component of TRC). Therefore, no additional water quality-based TRC or FAC requirements are necessary for the discharge through Outfall 001. The ELG limits for TRC and FAC have been included for both outfalls.

The last reported discharge from Outfall 002 was in June 2013. It is the judgment of the permit writer that it is reasonable to assume that the once-through cooling water discharged through Outfall 002 would be similar to the discharge through Outfall 001. However, a condition has been added in Part II.14 of the permit requiring that the facility notify the Permits Branch of within 7 days of the resumption of discharge through Outfall 002. Analytical results from subsequent DMRs will be reviewed to determine if reopening and modifying the permit would be warranted for TRC, in accordance with Part II.2.a of the permit.

<u>Outfall 004</u>

The ELGs promulgated under 40 CFR 423.13 include limitations for Copper and Iron. 40 CFR 122.44(d)(5) requires that water quality-based limits be included in a permit if they are more stringent than limits promulgated under effluent limitation guidelines.
There are no water quality standards for Iron in Reg. 2.508, so the ELGs for Total Iron have been included as the limitations for Outfall 004 in Part IA, Section A4 of the permit.

There is no discharge flow data available for Outfall 004 (the last discharge from Outfall 004 was in 1996). The permit application stated that 375,000 to 750,000 gallons of chemical metal cleaning wastewater are generated during a cleaning operation. The larger value was used as the discharge flow rate, assuming all of the water was discharged in a single day. Background Copper concentration data was taken from Arkansas Monitoring Station LOUA016A. Water-quality based limitations for Total Copper were calculated using the procedure from Part IV.B of the "ADEQ Discharge Permit, Toxic Control Implementation Procedure" in Appendix D of the CPP. The calculated water-quality based limitations for Total Copper were more stringent than the ELGs. Therefore, water quality-based limitations for Total Copper have been included as the limitations for Outfall 004 in Part IA, Section A4 of the permit.

Water Quality-based Copper Limitations		
Parameter	Monthly Avg.	Daily Max.
Total Copper	257 µg/l	516 µg/l

The water quality-based limitation calculations for Copper can be viewed on the Department's website at the following address:

https://www.adeq.state.ar.us/downloads/WebDatabases/PermitsOnline/NPDES/PermitInformation/AR0001147_WQ based%20Copper%20Limit_20180319.pdf

F. **Priority Pollutant Scan (PPS)**

ADEQ has reviewed and evaluated the effluent in accordance with the potential toxicity of each analyzed pollutant using the procedures outlined in the Continuing Planning Process (CPP).

The concentration of each pollutant after mixing with the receiving stream was compared to the applicable water quality standards as established in the Arkansas Water Quality Standards (AWQS), Regulation No. 2 (Reg. 2.508) and criteria obtained from the "Quality Criteria for Water, 1986 (Gold Book)".

Under Federal Regulation 40 CFR Part 122.44(d), as adopted by Regulation No. 6, if a discharge poses the reasonable potential to cause or contribute to an exceedance above a water quality standard, the permit must contain an effluent limitation for that pollutant. Effluent limitations for the toxicants listed below have been derived in a manner consistent with the Technical Support Document (TSD) for Water Quality-based Toxics Control (EPA, March 1991), the CPP, and 40 CFR Part 122.45(c).

The following items were used in calculations:

Parameter	Value	Source
Discharge Flow = Q	425 MGD = 657.57 cfs	Outfall 001 flow limit
Discharge Flow = Q	0.144 MGD = 0.223	Outfall 003
Discharge Flow = Q	0.039 MGD = 0.060 cfs	Outfall 005
7Q10 Background Flow	200 cfs	FERC agreement[1]
LTA Background Flow	600 cfs	Calculated (3 x 7Q10)
TSS	2.0 mg/l	CPP
Hardness as CaCo3	31.0 mg/l	CPP
pH	7.0 s.u.	Neutral

[1] The minimum continuous flow from Remmel Dam required by the permittee's license from the Federal Energy Regulatory Commission.

The following pollutants were reported above detection levels:

Pollutant	Concentration Reported, µg/l	MQL, µg/l
OUTFALL 001		
Arsenic	0.51	0.5
Copper	0.85	0.5
Nickel	0.60	0.5
OUTFALL 002		
PPS not performed since no discharges from this outfall have occurred.		
OUTFALL 003		
Arsenic	0.55	0.5
Copper	18.3	0.5
Lead	1.8	0.5
Mercury	0.00527	0.005
Nickel	0.83	0.5
OUTFALL 004		
PPS not performed since no discharges from this outfall have occurred.		
OUTFALL 005		
Copper	14.21	0.5
Lead	1.96	0.5

NOTE: All data are the geometric mean of 2 sample results from PPSs submitted with the application.

Instream Waste Concentrations (IWCs) were calculated in the manner described in Appendix D of the CPP and compared to the applicable Criteria. The following tables summarize the results of the analysis. The complete evaluations can be viewed on the Department's website at the following addresses:

https://www.adeq.state.ar.us/downloads/WebDatabases/PermitsOnline/NPDES/PermitInformation/AR0001147_PPS%20Outfall%20001_20180207.pdf

https://www.adeq.state.ar.us/downloads/WebDatabases/PermitsOnline/NPDES/PermitInformation/AR0001147_PPS%20Outfall%20003_20180207.pdf

https://www.adeq.state.ar.us/downloads/WebDatabases/PermitsOnline/NPDES/PermitInformation/AR0001147_PPS%20Outfall%20005_20180207.pdf

1. **Aquatic Toxicity Evaluation**

   a. Acute Criteria Evaluation

Pollutant	Concentration Reported (C_e) µg/l	C_e x 2.13[1]	Instream Waste Concentration (IWC)	Criteria[2]	Reasonable Potential (Yes/No)
			Acute, µg/l	Acute, µg/l	
OUTFALL 001					
Copper	0.85	1.81	1.78	12.67	No
Nickel	0.60	1.28	1.26	872.41	No
OUTFALL 003					
Copper	18.3	38.98	0.96	12.67	No
Lead	1.8	3.83	0.32	74.54	No
Mercury	0.00527	0.01123	0.00020	0.012	No
Nickel	0.83	1.77	0.28	872.41	No
OUTFALL 005					
Copper	14.21	30.27	0.42	12.67	No
Lead	1.96	4.17	0.27	74.54	No

[1] Statistical ratio used to estimate the 95th percentile using a single effluent concentration or the geometric mean of a dataset.
[2] Criteria are from Reg. 2.508 unless otherwise specified.

b. Chronic Criteria Evaluation

Pollutant	Concentration Reported (C_e) µg/l	C_e x 2.13[1]	Instream Waste Concentration (IWC)	Criteria[2]	Reasonable Potential (Yes/No)
			Chronic, µg/l	Chronic, µg/l	
OUTFALL 001					
Copper	0.85	1.81	1.70	9.37	No
Nickel	0.60	1.28	1.21	96.89	No
OUTFALL 003					
Copper	18.3	38.98	0.42	9.37	No
Lead	1.8	3.83	0.27	2.90	No
Mercury	0.00527	0.01123	0.00005	7.41	No
Nickel	0.83	1.77	0.26	96.89	No
OUTFALL 005					
Copper	14.21	30.27	0.29	9.37	No
Lead	1.96	4.17	0.26	2.90	No

[1] Statistical ratio used to estimate the 95th percentile using a single effluent concentration or the geometric mean of a dataset.
[2] Criteria are from Reg. 2.508 unless otherwise specified.

2. **Human Health (Bioaccumulation) Evaluation**

Pollutant	Concentration Reported (C_e) µg/l	C_e x 2.13[1]	Instream Waste Concentration (IWC)	Criteria[2]	Reasonable Potential (Yes/No)
OUTFALL 001					
Arsenic	0.51	1.09	0.69	1.4	No
Copper	0.85	1.81	1.07	13,000	No
Nickel	0.60	1.28	0.79	46,000	No
OUTFALL 003					
Arsenic	0.55	1.17	0.25	1.4	No
Copper	18.3	38.98	0.26	13,000	No
Lead	1.8	3.83	0.25	50	No
Mercury	0.00527	0.01123	0.000004	2	No
Nickel	0.83	1.77	0.25	46,000	No

Pollutant	Concentration Reported (C_e) µg/l	C_e x 2.13[1]	Instream Waste Concentration (IWC)	Criteria[2]	Reasonable Potential (Yes/No)
OUTFALL 005					
Copper	14.21	30.27	0.25	13,000	No
Lead	1.96	4.17	0.25	50	No

[1] Statistical ratio used to estimate the 95th percentile using a single effluent concentration or the geometric mean of a dataset.
[2] Adapted from "National Recommended Water Quality Criteria: 2002 – Human Health Criteria Calculation Matrix", EPA. The respective WQC from the noted reference are Consumption of Organism Only values. The values from the reference are for a lifetime risk factor of 10^{-6}. These values have been multiplied by 10 to correspond to human health criteria lifetime risk factor of 10^{-5} as stated in Reg. 2.508.

ADEQ has determined from the submitted information that the discharge does not pose the reasonable potential to cause or contribute to an exceedance above a listed Criteria.

G. **Cooling Water Intake Structures (CWISs) - CWA § 316(b)**

EPA promulgated the rule for cooling water intake structures (CWIS) at existing facilities pursuant to Clean Water Act Section 316(b) on August 15, 2014. The rule became effective on October 14, 2014. The rule includes provisions specifically designed to ensure that the rule, as it is implemented, is not likely to jeopardize the continued existence of federally-listed species, or result in the destruction or adverse modification of designated critical habitat pursuant to the Endangered Species Act of 1973 (ESA). The rule also establishes Best Technology Available (BTA) standards for minimizing adverse environmental impact to reduce impingement mortality and entrainment of aquatic organisms at existing power generation and manufacturing facilities.

This facility was in existence prior to 1972, so it falls under the category of an existing facility. As noted in Section 9 above, the steam electric power generating station consists of four gas-fired units. The facility uses once-through cooling water withdrawn from Lake Catherine through two cooling water intake structures (CWIS).

CWIS 1 serves Units 1, 2, and 3. The intake for CWIS 1 is comprised of two 8-foot diameter horizontal pipes extending 120 feet into Lake Catherine. The intake configuration includes stop logs followed by 4 Rex vertical traveling screens with 3/8" mesh. The traveling screens have single-head front spray wash rinses at 70 psi which rinse into a sluice then back to the lake. Although stop logs are associated with CWIS 1, no trash rack is in place at this CWIS. The rinse may be put on dry land if the water levels are low in the lake. Screen wash and rotation is triggered manually and occurs twice per day for 10 minutes or until the screens are clean if a longer wash is needed. The six circulating pumps associated with this CWIS have a total capacity of 384.2 cfs. These pumps are located in the basement of the turbine building rather than in the screen house.

CWIS 2 serves Unit 4. The intake for CWIS 2 is comprised of two 10-foot diameter horizontal pipes extending 160 feet into Lake Catherine. The intake configuration includes stop logs located 12 feet in front of the trash racks. The trash racks have 3" x 3/8" bars on 3" bar spacing. Two Rex traveling screens with 3/8" mesh have 70 psi front spray wash where fish and debris are returned to the lake via the water trough. Screen wash and rotation is triggered manually and occurs twice per day for 10 minutes or until the screens are clean if a longer wash is needed. The two circulating pumps associated with this CWIS have a total capacity of 740.6 cfs.

1. Information Submittal Requirements

   40 CFR 122.21(r)(1)(ii) applies to all existing facilities. It requires existing facilities to submit the information specified under 40 CFR Parts 122.21(r)(2) and (3), and the applicable provisions of 40 CFR Parts 122.21(r)(4)-(8).

   This information was submitted with the permit renewal application.

   Facilities that have an actual intake flow (AIF) of more the 125 MGD are required to submit the information described in 40 CFR Parts 122.21(r)(9)-(13). The definition of AIF, from 40 CFR 125.92(a), is as follows:

   > "*Actual Intake Flow* (AIF) means the average volume of water withdrawn on an annual basis by the cooling water intake structures over the past three years. After October 14, 2019, *Actual Intake Flow* means the average volume of water withdrawn on an annual basis by the cooling water intake structures over the previous five years. Actual intake flow is measured at a location within the *cooling water intake structure* that the Director deems appropriate. The calculation of actual intake flow includes days of zero flow. AIF does not include flows associated with emergency and fire suppression capacity."

   Based on the renewal application, the average volume of water withdrawn on an annual basis by the cooling water intake structure over the previous three years is 56.1 MGD. Because the CWIS is an existing unit that has an AIF less than 125 MGD, submission of the information described in 40 CFR Parts 122.21(r)(9)-(13) is not required.

2. Compliance with BTA Standards for Impingement Mortality

   The facility has chosen to meet the BTA Standards for Impingement Mortality through compliance with 40 CFR 125.94(c)(6) - Systems of technologies as the BTA for impingement mortality. The system of technologies used are as follows:

   a. Unit closure

      Units 1, 2, and 3, have been retired, so CWIS 1 no longer withdraws cooling water from Lake Catherine. CWIS 1, that served Units 1, 2, and 3 and discharged through Outfall 002, has a design intake flow (DIF) of 248.3 MGD.

b. Flow reductions

CWIS 2, that serves Unit 4 and discharges through Outfall 001, has a design intake flow (DIF) of 475.2 MGD. The AIF, based on the average of flow data from January 1, 2014 through July 31, 2017, is 56.1 MGD. This represents a flow reduction of 88.2% for this CWIS.

Units 1, 2, and 3 have been taken out of service, and CWIS 1, which serves these units has not operated since December 2013. One of the factors in 40 CFR 125.98(f)(3)(iii) that can be considered in making BTA determinations is: "Credit for reductions in flow associated with the retirement of units occurring within the ten years preceding October 14, 2014". Therefore, it is the best engineering judgment of the permit writer that it is appropriate to take into account the closure of Units 1, 2, and 3 in the Total DIF of both CWISs. The Total DIF of CWIS 1 and CWIS 2 is 248.3 + 475.2 = 723.5 MGD, and the Total AIF is 56.1 MGD (CWIS 2). Therefore, the total flow reduction, from 723.5 MGD to 56.1 MGD, is 92.2%.

c. Seasonal operation

The facility does not operate continuously, and only operates during peak demand. Based on the period of 2014-2017, and the capacity of Unit 4 (547 MW), the average capacity utilization of the facility is 4.4%.

d. Credit for intake location

The intake for CWIS 2 is located approximately 160 feet offshore, at a depth ranging from 36 to 56 feet. As identified in the Impingement Mortality and Entrainment Characterization Study (IMECS), submitted to the Department in September 2006, the Arkansas Game and Fish Commission found that fish abundance is approximately 95 percent lower in the deeper waters of Lake Catherine, as compared to shallow, near-shore waters. This correlates to a reduction in impingement mortality of approximately 95%, based on the offshore location of the intake at depth.

Based on the "316(b) Sampling Study Final Report – Lake Catherine Plant, Jones Mill, Arkansas", January 2008, impingement mortality resulted in an annual loss of biomass of only 0.87% of total biomass in the reservoir. This value was based on the assumption of continuous yearly operation of the intake structure at full pumping capacity to reflect maximum possible impingement. The facility is a "peaking reserve/load following" facility, and generally does not operate during winter months. When these operational characteristics are taken into account (i.e., data from the months of November through February are excluded), impingement mortality resulted in only 0.03% annual loss of biomass in the reservoir.

The Department has determined that the above systems of technologies qualify as site-specific BTA for impingement mortality, and satisfies the requirements of 40 CFR 125.94(c)(6).

3. Compliance with BTA Standards for Entrainment

   The Department has determined that the site-specific BTA Standards for Impingement Mortality based on the information in Sections 11.H.2.a – d above, are appropriate as site-specific BTA Standards for Entrainment.

   This determination was based on consideration of the factors specified in 40 CFR 125.98 (f)(2)(i): "Numbers and types of organisms entrained, including, specifically, the numbers and species (or lowest taxonomic classification possible) of Federally-listed, threatened and endangered species, and designated critical habitat (e.g., prey base)".

   As noted in Section 11.G.2.d above, the intake for CWIS 2 is located approximately 160 feet offshore, at a depth ranging from 36 to 56 feet. As identified in the Impingement Mortality and Entrainment Characterization Study (IMECS), submitted to the Department in September 2006, the Arkansas Game and Fish Commission found that fish abundance is approximately 95 percent lower in the deeper waters of Lake Catherine, as compared to shallow, near-shore waters. It follows that a reduction in entrainment of approximately 95% would be expected, based on the offshore location of the intake at depth.

   The CWIS will have no effect (entrainment) on listed, threatened, or endangered species as none have been identified in Lake Catherine. No comments on the application were received from the USF&WS during the 60-day review period required by 40 CFR 125.98(h). The draft permit and Fact Sheet were sent to the USF&WS for their review.

   This determination was also based on consideration of the factors specified in 40 CFR 125.98(f)(3)(iii): "Credit for reductions in flow associated with the retirement of units occurring within the ten years preceding October 14, 2014". The six circulating pumps associated with CWIS 1 have a total capacity of 384.2 cfs (248.3 MGD). Units 1, 2, and 3 have been taken out of service, and CWIS 1, which serves these units has not operated since December 2013.

   These systems of technologies comply with the requirements of 40 CFR 125.94(d).

4. Endangered Species

   The receiving stream is not classified as an Ecologically Sensitive Waterbody. As noted in Section 7.C above, no comments were received from the USF&WS during the early 60-day review period required by 40 CFR 125.98(h). The draft permit and Fact Sheet were sent to the USF&WS for review during the public comment period.

5. Other requirements

   In accordance with 40 CFR 122.98(b)(1), Part II.15 which states: "Nothing in this permit authorizes take for the purposes of a facility's compliance with the Endangered Species Act" has been included in the permit.

Part II.16 satisfies the requirements for an annual certification statement and report in 40 CFR 125.97(c).

Part II.17 satisfies the requirements for weekly visual inspections in 40 CFR 125.96(e).

12. **WHOLE EFFLUENT TOXICITY**

Section 101(a)(3) of the Clean Water Act states that ".....it is the national policy that the discharge of toxic pollutants in toxic amounts be prohibited." In addition, ADEQ is required under 40 CFR Part 122.44(d)(1), adopted by reference in Regulation 6, to include conditions as necessary to achieve water quality standards as established under Section 303 of the Clean Water Act. Arkansas has established a narrative criteria which states "toxic materials shall not be present in receiving waters in such quantities as to be toxic to human, animal, plant or aquatic life or to interfere with the normal propagation, growth and survival of aquatic biota."

Whole effluent toxicity (WET) testing is the most direct measure of potential toxicity which incorporates the effects of synergism of effluent components and receiving stream water quality characteristics. It is the national policy of EPA to use bioassays as a measure of toxicity to allow evaluation of the effects of a discharge upon a receiving water (49 Federal Register 9016-9019, March 9, 1984). EPA Region 6 and the State of Arkansas are now implementing the Post Third Round Policy and Strategy established on September 9, 1992, and EPA Region 6 Post-Third Round Whole Effluent Toxicity Testing Frequencies, revised March 13, 2000. Whole effluent toxicity testing of the effluent is thereby required as a condition of this permit to assess potential toxicity. The whole effluent toxicity testing procedures stipulated as a condition of this permit are as follows:

TOXICITY TESTS	**FREQUENCY**
Chronic WET	once/quarter

Requirements for measurement frequency are based on the CPP.

The 7Q10 is not less than 100 cfs (ft^3/sec), but the dilution ratio is less than 100:1, so chronic WET testing requirements will be included in the permit.

The calculations for dilution used for chronic WET testing are as follows:

Critical dilution (CD) = (Qd/(Qd + Qb)) x 100

Qd = Daily Max. Flow = 476 MGD + 240 MGD = 716 MGD = 1107.8 cfs
7Q10 = 200 cfs (minimum continuous flow from Remmel Dam required by the permittee's license from the Federal Energy Regulatory Commission)
Qb = Background flow = (0.25) x 7Q10 = 50 cfs
CD = (1107.8) / (1107.8 + 50) x 100 = 96%

Toxicity tests shall be performed in accordance with protocols described in "Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms", EPA/600/4-91/002, July 1994. A minimum of five effluent dilutions in addition to an appropriate control (0%) are to be used in the toxicity tests. These additional effluent concentrations are 30%, 41%, 54%, 72%, and 96% (See the CPP). The low-flow effluent concentration (critical dilution) is defined as 96% effluent. The requirement for chronic WET tests is based on the magnitude of the facility's discharge with respect to receiving stream flow. The stipulated test species, *Ceriodaphnia dubia* and the Fathead minnow (*Pimephales promelas*) are representative of organisms indigenous to the geographic area of the facility; the use of these is consistent with the requirements of the State water quality standards. The WET testing frequency has been established to provide data representative of the toxic potential of the facility's discharge, in accordance with the regulations promulgated at 40 CFR Part 122.48.

Results of all dilutions as well as the associated chemical monitoring of pH, temperature, hardness, dissolved oxygen conductivity, and alkalinity shall be reported according to EPA-821-R-02-013, October 2002 and shall be submitted as an attachment to the Discharge Monitoring Report (DMR).

This permit may be reopened to require further WET testing studies, Toxicity Reduction Evaluation (TRE) and/or effluent limits if WET testing data submitted to the Department shows toxicity in the permittee's discharge. Modification or revocation of this permit is subject to the provisions of 40 CFR 122.62, as adopted by reference in APC&EC Regulation No. 6. Increased or intensified toxicity testing may also be required in accordance with Section 308 of the Clean Water Act and Section 8-4-201 of the Arkansas Water and Air Pollution Control Act (Act 472 of 1949, as amended).

Administrative Records

Permit Number:	AR0001147	AFIN:	30-00011	Outfall Number:	001
Date of Review:	2/8/2018	Reviewer:	M. Barnett		
Facility Name:	Entergy Arkansas, Inc. - Lake Catherine Plant				
Previous Dilution series:	30, 41, 54, 72, 96	Proposed Dilution Series:	30, 41, 54, 72, 96		
Previous Critical Dilution:	96	Proposed Critical Dilution:	96		
Previous TRE activities:	None				

Frequency recommendation by species	
Pimephales promelas (Fathead minnow):	once per quarter
Ceriodaphnia dubia (water flea):	once per quarter

TEST DATA SUMMARY

	Vertebrate (*Pimephales promelas*)		Invertebrate (*Ceriodaphnia dubia*)		
TEST DATE	Lethal	Sub-Lethal	Lethal	Sub-Lethal	
	NOEC	NOEC	NOEC	NOEC	
6/30/2013	96	96	96	96	None
9/30/2013	96	96	96	96	None
12/31/2013	96	96	96	96	None
6/30/2014	96	96	96	96	None
9/30/2014	96	96	96	96	None
12/31/2014	96	96	96	96	None
12/31/2014	96	96	96	96	UV filtration
12/13/2015	96	96	96	96	None
12/31/2015	96	96	96	96	UV filtration
6/30/2016	96	96	96	96	None
6/30/2016	96	96	96	96	UV filtration
12/31/2016	96	96	96	96	None
12/31/2016	96	96	96	96	UV filtration
6/30/2017	96	96	96	96	None
6/30/2017	96	96	96	96	UV filtration
12/31/2017	96	96			None
12/31/2017	96	96	96	96	UV filtration

REASONABLE POTENTIAL CALCULATIONS

	Vertebrate Lethal	Vertebrate Sub-lethal	Invertebrate Lethal	Invertebrate Sub-Lethal
Min NOEC Observed	96	96	96	96
TU at Min Observed	1.04	1.04	1.04	1.04
Count	17	17	16	16
Failure Count	0	0	0	0
Mean	1.042	1.042	1.042	1.042
Std. Dev.	0.000	0.000	0.000	0.000
CV	0	0	0	0
RPMF	0	0	0	0
Reasonable Potential	0.000	0.000	0.000	0.000
100/Critical dilution	1.042	1.042	1.042	1.042
Does Reasonable Potential Exist	No	No	No	No

PERMIT ACTION

P. promelas Chronic - monitoring
C. dubia Chronic - monitoring

13. STORMWATER REQUIREMENTS

The federal regulations at 40 CFR 122.26(b)(14) require certain industrial sectors to have NPDES permit coverage for stormwater discharges from the facility. These requirements include the development and implementation of a Stormwater Pollution Prevention Plan (SWPPP) to control the quality of stormwater discharges from the facility. This facility was issued stormwater permit coverage under NPDES Tracking number ARR001023.

14. SAMPLE TYPE AND FREQUENCY

Regulations require permits to establish monitoring requirements to yield data representative of the monitored activity [40 CFR Part 122.48(b)] and to ensure compliance with permit limitations [40 CFR Part 122.44(i)(l)].

Requirements for sample type and sampling frequency have been based on the current discharge permit.

Parameter	Previous Permit		Final Permit	
	Frequency of Sample	Sample Type	Frequency of Sample	Sample Type
Outfall 001				
Flow	continuous	calculated	continuous	calculated
FAC	N/A	N/A	once/week	grab
TRC	once/week	grab	once/week	grab
Temperature	continuous	record	continuous	record
pH	once/week	grab	once/week	grab
Chronic WET	once/quarter	composite	once/quarter	composite
Outfall 002				
Flow	once/day	calculated	once/day	calculated
FAC	N/A	N/A	once/week	grab
TRC	once/week	grab	once/week	grab
Temperature	once/day	instantaneous	once/day	instantaneous
pH	once/week	grab	once/week	grab
Chronic WET	once/quarter	composite	once/quarter	composite

Parameter	Previous Permit		Final Permit	
	Frequency of Sample	Sample Type	Frequency of Sample	Sample Type
Outfall 003				
Flow	daily	record	once/day	instantaneous
TSS	once/week	grab	once/week	grab
O&G	once/week	grab	once/week	grab
pH	once/week	grab	once/week	grab
Outfall 004				
Flow	daily	instantaneous	once/day	instantaneous
TSS	once/week	grab	once/week	grab
O&G	once/week	grab	once/week	grab
Total Copper	once/week	grab	once/week	grab
Total Iron	once/week	grab	once/week	grab
pH	once/week	grab	once/week	grab
Outfall 005				
Flow	daily	record	once/day	instantaneous
TSS	once/week	grab	once/week	grab
O&G	once/week	grab	once/week	grab
pH	once/week	grab	once/week	grab

15. **PERMIT COMPLIANCE SCHEDULE**

A Schedule of Compliance has not been included in this permit.

16. **MONITORING AND REPORTING**

The applicant is at all times required to monitor the discharge on a regular basis and report the results monthly. The monitoring results will be available to the public.

17. **SOURCES**

The following sources were used to draft the permit:

A. Application No. AR0001147 received September 21, 2017, and additional information received on March 27, 2018.
B. APC&EC Regulation No. 2.

C. APC&EC Regulation No. 3.
D. APC&EC Regulation No. 6 which incorporates by reference certain federal regulations included in Title 40 of the Code of Federal Regulations at Reg. 6.104.
E. 40 CFR Parts 122 and 125.
F. 40 CFR Part 423.
G. Discharge permit file AR0001147.
H. Discharge Monitoring Reports (DMRs).
I. "2016 Integrated Water Quality Monitoring and Assessment Report", ADEQ.
J. "2016 List of Impaired Waterbodies (303(d) List)", ADEQ, July 2017.
K. Continuing Planning Process (CPP).
L. Technical Support Document For Water Quality-based Toxic Control.
M. EPA National Recommended Water Quality Criteria at: http://water.epa.gov/scitech/swguidance/standards/criteria/current/index.cfm#cmc
N. Inspection Report #096067, dated March 27, 2017.
O. Compliance Review Memo from Layne Pemberton to Guy Lester dated November 11, 2017.
P. NPDES Permit Rating Sheet (MRAT).
Q. "316(b) Sampling Study Final Report – Lake Catherine Plant, Jones Mill, Arkansas", ENSR Corporation, January 2008.
R. EPA No Objection letter, dated October 19, 2018.
S. Letter, dated January 3, 2019, from David Triplett, P.E., of Entergy Arkansas Environmental Support, to Guy Lester of ADEQ.
T. Permit Transfer Form, received February 6, 2019.
U. Letter, dated December 7, 2018, from Cindy Osborne of the Arkansas Natural Heritage Commission, to Guy Lester of ADEQ.
V. USF&WS No Comment email.
W. Arkansas Dept. of Health No Comment letter.
X. Email, dated February 14, 2019, from Russell McLaren of Entergy Arkansas Environmental Support, to Guy Lester, P.E., of ADEQ.
Y. EPA Comments, dated June 28, 2019.
Z. EPA No Objection letter, dated August 5, 2019.

18. PUBLIC NOTICE

The public notice of the draft permit was published for public comment on December 4, 2018. The last day of the comment period was January 3, 2019.

A summary of the comments received by the ADEQ during the public comment period and response to the comments are included with this permit decision. The response to comments also includes a discussion of any substantial changes from the draft permit.

A copy of the draft permit and public notice were sent via email to the Corps of Engineers, the Regional Director of the U.S. Fish and Wildlife Service, the Department of Arkansas Heritage, the EPA, and the Arkansas Department of Health.

19. PERMIT FEE

In accordance with Reg. No. 9.403(A)(1), the annual fee for the permit is $15,000.

20. **POINT OF CONTACT**

For additional information, contact:

Guy Lester, P.E.
Permits Branch, Office of Water Quality
Arkansas Department of Environmental Quality
5301 Northshore Drive
North Little Rock, Arkansas 72118-5317
Telephone: (501) 682-0023

RESPONSE TO COMMENTS
FINAL PERMITTING DECISION

Permit No.: AR0001147

Applicant: Entergy Arkansas, LLC
Lake Catherine Plant

Prepared by: Guy Lester

The following are responses to comments received regarding the draft permit number referenced above and are developed in accordance with regulations promulgated at 40 C.F.R. §124.17, Arkansas Pollution Control & Ecology Commission (APCE&C) Regulation No. 8 "Administrative Procedures," and Arkansas Code Annotated (A.C.A.) §8-4-203(e)(2).

Introduction

The above permit was submitted for public comment on December 4, 2018. The public comment period ended on January 3, 2019.

This document contains a summary of the comments that the ADEQ received during the public comment period. A summary of the changes to the NPDES Permit can be found on the last page of this document.

The following people or organizations sent comments to the ADEQ during the public notice. A total of eleven (11) comments were raised by two (2) separate commenters.

Commenter	# of Comments Raised
David Triplett, P.E. Entergy – Arkansas Environmental Support	10
Cindy Osborne Data Manager / Env. Review Coordinator Arkansas Natural Heritage Commission	1

An ADEQ Comment is also included.

Comment 1 **Front Page of the Permit**

The front page that was part of the pre-draft permit does not appear to be included with the draft permit. The following comment was submitted during the pre-draft period:

To agree with the application which listed the location of the front gate, the facility coordinates should be listed as:

34° 26' 9.10" /93° 54' 5.31"

If this was not corrected, this above coordinates should be changed and the cover page of front page should be added to the final permit.

Response: The cover page of the permit was not included in the draft permit due to a file processing error. The corrected file has been posted on the ADEQ website.

The coordinates supplied on the application have a typographical error in the degrees longitude. After consultation with the permittee, the correct coordinates of the facility (front gate) have been determined to be:

34° 26' 9.10" N; 92° 54' 5.31" W

The facility coordinates on the cover page of the final permit have been revised.

Comment 2 **Part I - Permit Requirements, Page 1 of Part IA, Effluent Characteristics**

At Outfall 001 and 002, Free Available Chlorine (FAC) has been added to the permit and Total Residual Chlorine (TRC) has been left in the permit and the permit limits have been lowered. Based on our review of the effluent guideline and data collected at 001 specifically for TRC, we find the inclusion of both FAC and TRC into the permit to be excessive. Lake Catherine has monitored TRC at Outfall 001 for the last permit cycle with no permit violations or any chlorine issues. The Fact Sheet states that TRC has been added from the BAT section of the effluent guideline. It was compared against water quality standards to see which was more stringent. There is no water quality standard for TRC so a limit was calculated. This limit was added to the permit and is extremely low MQL (.033 mg/L). Going above and beyond to calculate a limit when there is no water quality standard is excessive. EPA has stipulated protective concentrations of 0.5 mg/L and 0.2 mg/L as the maximum and average in the effluent guideline. The draft permit now has a concentration limit that is 0.011 mg/L as the instantaneous maximum. This was also used to calculate a loading limit of 3.6 lbs/day. These limits are not being added to protect waters of state. They are not realistic and add a burden to the facility that serves no purpose. Because of the short holding time, TRC and FAC must be measured on-site. We are not currently sure if the equipment we have will measure at the low MQL. It should also be mentioned that the fact sheet states that FAC and TRC have no numeric water quality standards but Reg 2.409 forbids the discharge of toxic pollutants in amounts which are toxic. Again, EPA has set a protective measure. There is no water quality standard for either. There is a biomonitoring requirement that is used in the permit to determine the toxicity of the effluent at 001. There has been no failure of a toxicity test at Lake Catherine during the last permit cycle. Finally, the load limit associated with TRC is very low at Outfall 001. With the flow regime at Outfall 001, it is highly likely that the load will easily exceed the 3.6 lbs/day limit that has been calculated.

Lake Catherine is currently capable of measuring TRC to a level that enables them to meet the 0.2 max limit in the existing permit. We request that TRC be left in final permit as it exists in the current permit. **If this can't be done, Entergy requests a meeting to discuss options face to face before the Permit is finalized.**

Response: 40 CFR 122.44(a)(1) requires NPDES discharge permits to include technology-based effluent limitations based on "effluent limitations and standards promulgated under section 301 of the CWA". The effluent limitation guidelines (ELGs) in 40 CFR 423 were promulgated under this authority.

40 CFR 122.44(d) and (d)(1) require NPDES discharge permits to include:

> "any requirements in addition to *or more stringent than* promulgated effluent limitations guidelines or standards under sections 301, 304, 306, 307, 318 and 405 of CWA necessary to:
>
> (1) Achieve water quality standards established under section 303 of the CWA, *including State narrative criteria for water quality*." Emphasis added.

As noted in the Fact Sheet, and in the comment, there are no numerical water quality standards for TRC or FAC in Reg. 2.508, and the narrative water quality standard in Reg. 2.409 forbids the discharge of toxic pollutants in amounts which are toxic. As noted in the comment, both Outfall 001 and 002 have Whole Effluent Toxicity (WET) testing requirements.

Part V – Chlorination/Dechlorination of the ADEQ Discharge Permit, Toxic Control Implementation Procedure of the CPP specifies the use of WET testing (biomonitoring) in the case of facilities that use chlorination without dechlorination. The CPP states:

> "If the chlorinated effluent is non-toxic and significant dilution is provided in the receiving stream (e.g., the Arkansas or Mississippi River) the permit will rely on biomonitoring to evaluate potential impacts from chlorine. If the toxicity test results show toxicity problems, a schedule of compliance to install dechlorination is required."

WET testing results for Outfalls 001 and 002 from June 2013 through December 2018 show no failures, and a minimum No Observable Effect Concentration for all tests of 96% (the Critical Dilution). This indicates that the effluent is non-toxic. The 7Q10 for the receiving stream is greater than 100 cfs, which classifies it as a large river.

Based on the results of WET testing, and the requirements in the CPP, the discharge meets the narrative water quality standard in Reg. 2.409. Since WET testing monitors the combined effects of all pollutants in the effluent, it is an acceptable replacement for a concentration limit in this circumstance (it should be noted that FAC is a component of TRC). Therefore, no additional water quality-based TRC or FAC requirements are necessary for the discharge through Outfall 001. The ELG limits for TRC and FAC have been included for both outfalls.

The last reported discharge from Outfall 002 was in June 2013. It is the judgment of the permit writer that it is reasonable to assume that the once-through cooling water discharged through Outfall 002 would be similar to the discharge through Outfall 001. However, a condition has been added in Part II.14 of the permit

requiring that the facility notify the Permits Branch of within 7 days of the resumption of discharge through Outfall 002. Analytical results from subsequent DMRs will be reviewed to determine if reopening and modifying the permit would be warranted for TRC, in accordance with Part II.2.a of the permit.

Comment 3 **Part I - Permit Requirements, Page 1 of Part 1A (footnote)**

The footnote for Outfall 001-005 states... *"Oil, grease, or petrochemical substances shall not be present in receiving waters to the extent that they produce globules or other residue or any visible, colored film on the surface or coat the banks and/or bottoms of the waterbody or adversely affect any of the associated biota."*

The previous permit language for the Lake Catherine Outfalls (001-005) reads as follows: *"There shall be no discharge of distinctly visible solids, scum, or foam of a persistent nature, nor shall there be any formation of slime, bottom deposits, or sludge banks."*

The language used for the Lake Catherine Outfalls in the draft is confusing. It addresses the receiving waters and not the effluent discharge. It sounds as if the Plant would be responsible for the receiving waters versus what is being discharged. We request that the language be changed so that the discharge is addressed as to how it affects the receiving waters or we ask that the previous permit language be used for all Outfalls.

Response: Part II.19 has been added to the permit. It states: "Oil, grease, or petrochemical substances shall not be discharged to the receiving waters to the extent that they produce globules or other residue or any visible, colored film on the surface or coat the banks and/or bottoms of the waterbody or adversely affect any of the associated biota. No discharge shall cause visible sheen as defined in Part IV of this permit. Any occurrences of the above referenced effects resulting from the activities of the permittee shall be reported in accordance with Permit III.D.6."

Comment 4 **Part I - Permit Requirements, Page 7 of Part 1A (Outfall 005)**

Free Available Chlorine (FAC) has been added to the Outfall 005 sampling requirements. Outfall 005 is sourced as low volume waste. There is no requirement in 40 CFR 423 to sample FAC for low volume waste. We request that FAC be removed from the sampling requirements for Outfall 005 in the final permit. **If FAC is not removed, we request a meeting to resolve this issue before the permit is finalized.**

Response: FAC limitations were mistakenly included in the requirements for discharges through Outfall 005. FAC limitations have been deleted from the requirements for discharges through Outfall 005 in Part IA, Section A5 of the permit.

Comment 5 **Part II— Other Conditions, Page 1 Condition 4**

Page 1 of Part II, Number 4 addresses BMPs as they are defined in the definition section of the Permit. This condition was originally put into Permits in association with stormwater for facilities that weren't required to obtain the Arkansas Stormwater Multi-Sector General Permit because all stormwater at the site was discharged through a individually permitted outfall. These facilities weren't required to maintain a Stormwater Pollution Prevention Plan, so this language was added in place of actual stormwater requirements. The stormwater at our facility is not covered by this individual permit but by the Arkansas Stormwater Multi-Sector General Permit. The requirements associated with this condition are covered by the stormwater permit as well as the SPCC Plan implemented at the site. We request this language be completely removed from the final permit.

Response: Part II.4 of the permit has been deleted. As noted in Section 13 of the Fact Sheet, this facility was issued stormwater permit coverage under NPDES Tracking number ARR001023.

Comment 6 **Part II— Other Conditions, Page 2 Condition 11**

This condition states that the effluent flows from Outfalls 001 and 002 must be calculated using the appropriate pump capacity and pump run time. The flows at 001 (002 does not currently discharge) are calculated by using the appropriate pump capacity and pump run time. However, this condition appears to bar the facility from using any other type of flow monitoring equipment without modifying the permit. This is excessive. There is already language in the permit governing flow measurement. We request this language be removed from the final permit or at the least be changed allowing other forms of flow monitoring without modifying the permit.

Response: Part III.C.2 of the permit allows for alternate methods of flow calculation, as long as the methods are approved by the Department.

The second paragraph of Part III.C.2 states: "For calculated flow measurements that are performed in accordance with either the permit requirements *or a Department approved method (i.e., as allowed under Part II.3)*, the +/- 10% accuracy requirement described above is waived. This waiver is only applicable when the method used for calculation of the flow has been reviewed and approved by the Department."

No changes were made to the final permit based on this comment.

Comment 7 **Part II — Other Conditions, Page 12 Condition 13**

The draft permit language states... *"The permittee must operate the cooling water intake structures based on the current design, location and utilization rate to minimize impingement mortality and entrainment of aquatic organisms. This will meet the site-specific BTA Standards for Impingement Mortality and Entrainment*

as required by 40 CFR 125.94(c) and (d) respectively." The facility will continue to operate the structures as they are now operated based on the current design and location. The utilization rate is not entirely within the facility's control. Entergy operates the plant based on dispatch orders from the Midcontinent Independent System Operator, Inc (MISO). MISO is an organization formed with approval from the Federal Energy Regulatory Commission (FERC) to coordinate, control and monitor the use of the electric transmission system by utilities. MISO combines the transmission facilities of several transmission owners into a single transmission system to move energy over long distances at a single lower price. MISO determines when and at what capacity to dispatch the Lake Catherine Plant based on electrical demand and the cost of generation from the facility. Utilization is typically based on demand and therefore may increase or decrease over time. In other words, although there is an overall plan for Lake Catherine utilization, the plant runs when and how it is dispatched by MISO. **We request that the language be modified to include this possibility. We request a meeting or coordination to discuss this issue before the permit is finalized.**

Response: The chosen method of compliance with the 316(b) impingement mortality standard for the CWIS was "systems of technologies" which included consideration of seasonal operation, flow reduction, unit closure, and intake location. The permit renewal application included the description that the facility is a "peaking plant" and only operates during periods of high demand. This seasonal operation is only one item in the systems of technologies used to comply with the impingement mortality standard. The seasonal and variable nature of the operation of the facility was considered in drafting the noted condition for operation of the CWIS, so additional language referencing operational variability is not required.

The CWIS Annual Certification Statement and Report must include any changes in the operation of the facility that impacts the withdrawal of cooling water [ref. Part II.16.A of the permit and 40 CFR 125.97(c)(2)], After review of each annual report, the Department will determine if any reported changes require re-evaluation of compliance with the 316(b) impingement mortality standard by the system of technologies used by the facility.

No changes were made to the final permit based on this comment.

Comment 8 **Part II — Other Conditions, Page 13 Condition 16**

This condition refers to an annual report and certification statement associated with the Cooling Water Intake Structure (CWIS) at Lake Catherine. The report and the statement must be signed by the Responsible Official. We request language clarifying what should be in the certification statement. We also request language allowing for the signature to be provided by the Cognizant Official as appointed by the Responsible Official.

Response: The certification statement listed in Part III.D.11.C of the permit is the statement that must be included with all reports required by the permit.

Reports may usually by signed by the duly authorized representative (i.e. Cognizant official), as noted in Part III.D.11.C [ref. 40 CFR 122.22(b)]. However, the annual certification statement and report for CWIS must be signed by the Responsible Official, in accordance with 40 CFR 125.97(c).

No changes were made to the final permit based on this comment.

Comment 9 **Part III — Standard Conditions, Section B, Page 5 Number 6**

New language in Part B. on page 5 has been added to the draft Permit and states any changes to the disposal practices described in the Fact Sheet, which was derived from the permit application, will require 180 day notice to ADEQ. The Statement of Basis shows that no sludge/solids are produced at Lake Catherine. We want to clarify that, after further examination, there may be times when the o/w separators or sumps etc. may need to be cleaned out and the mixture of water and solids etc. removed and disposed. This process will be conducted in compliance with all applicable regulations. We request that the Statement of Basis be updated and that the removal and disposal be allowed as routine maintenance without a need for ADEQ approval.

Response: Reference to periodic removal of solids from oil/water separators and sumps has been included in Section 10 of the Fact Sheet. Any changes to the referenced disposal practices would require notification of the Department, in accordance with the terms of Part III.B.6 of the permit.

Comment 10 Entergy requests that any changes made to the draft permit be addressed in the Fact Sheet.

Response: Changes to the permit have been summarized in the Fact Sheet. The permittee will be responsible for compliance with the final permit. As stated in the introduction to the Fact Sheet, the terms of the Fact Sheet are not enforceable.

Comment 11 The Department of Arkansas Heritage notified ADEQ that the following species of conservation concern are known to occur in the Ouachita River at or within five miles downstream of the outfall:

Alosa alabamae, Alabama shad-federal concern (species of concern)
Anguilla rostrata, American eel-state concern
Etheostoma clinton, beaded darter-state concern
Noturus lachneri, Ouachita madtom-state concern
Percina brucethompsoni, Ouachita darter-state concern
Percina uranidea, stargarzing darter-state concern

Response: The permit has been written to ensure that all water quality standards (WQS) are maintained in the receiving stream. WQS are designed, in part, to provide for the protection and propagation of all aquatic life. ADEQ sent the draft permit and Statement of Basis to the United States Fish and Wildlife Service (USF&WS) for their review. No comments on the draft permit or Fact Sheet were received from the USF&WS. No change has been made to the permit, but the information on sensitive species has been added to Section 7.C of the Fact Sheet.

ADEQ Comment 1: A Permit Transfer form, and all associated documents, was received by the Department on February 6, 2019. The transfer is due to a change in the Legal Name of the permittee, not a change in ownership. The new Permittee (Legal Name) will take effect on the effective date of the permit, in accordance with Reg. 8.212(A).

ADEQ Comment 2: In response to comments by the EPA, dated June 28, 2019, CWIS recordkeeping requirements were added as Part II.18, in accordance with 40 CFR 125.95(e) and 125.97(f).

Summary of Changes to the Permit				
Part	Draft Permit	Final Permit	Reason	Comment #
Cover Page	Latitude: 34° 26' 9.89" N; Longitude: 92° 54' 3.52" W	Latitude: 34° 26' 9.10" N; Longitude: 92° 54' 5.31" W	Accuracy	1
IA.A1	TRC limits 3.6 lb/s day (Daily Max.) 0.011mg/l (Inst. Max.)	TRC limits 66.2 lb/s day (Daily Max.) 0.2 mg/l (Daily Max.)	WET testing meets narrative water quality standard	2
IA.A2	TRC limits 1.8 lb/s day (Daily Max.) 0.011mg/l (Inst. Max.)	TRC limits 33.4 lb/s day (Daily Max.) 0.2 mg/l (Daily Max.)	WET testing meets narrative water quality standard	2
II.14	<u>Priority Pollutant Scan</u> The permittee must conduct a Priority Pollutant Scan at Outfall 002 at the next discharge from the outfall. These results must be submitted to the Department for review to determine if reasonable potential for water quality violations exists.	<u>Priority Pollutant Scan</u> The permittee must conduct a Priority Pollutant Scan at Outfall 002 at the next discharge from the outfall. These results must be submitted to the Department for review to determine if reasonable potential for water quality violations exists. The permittee shall notify the Permits Branch of the Office of Water Quality within 7 days of the resumption of discharge through Outfall 002.	More timely notification of resumption of discharge.	2
IA.A1 IA.A2 IA.A3 IA.A4 IA.A5	Oil, grease, or petrochemical substances shall not be present in receiving waters…	Deleted. Added Part II.19.	Made specific condition in Part II.19	3
II.19	-	Oil, grease, or petrochemical substances shall not be discharged to the receiving waters…	Clarification of requirement	3
IA.A5	FAC limits	DELETED	Not required by 40 CFR 423.12(b)(3)	4
II.4	Stormwater BMP requirement.	DELETED	Stormwater is covered by ARR001023	5
Fact Sheet Sec. 10	-	Solids and water are periodically removed from sumps and oil/water separators.	Compliance with Part III.B.6	9
Cover Page	Entergy Arkansas Power, LLC – Lake Catherine Plant	Entergy Arkansas, LLC Lake Catherine Plant	Legal Name change	ADEQ
II.18	-	CWIS recordkeeping requirements	40 CFR 125.95(e) and 125.97(f)	ADEQ in response to EPA