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 and low volume wastewater (consisting of floor drains, building sumps, equipment drains, boiler blowdown, filter backwash, and regeneration wastewater) from a facility located as follows: 141 West County Line Road, Malvern, AR 72104, in Hot Spring County.

Facility Coordinates: Latitude: 34° 26’ 9.1” N; Longitude: 92° 54’ 5.29” W

Discharge is to receiving waters named:

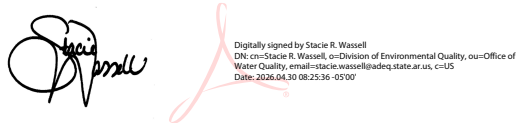
Lake Catherine, thence to the Ouachita River in Segment 2F of the Ouachita River Basin.

The outfalls are located at the following coordinates:

Outfall 001:	Latitude: 34° 26’ 0.42” N;	Longitude: 92° 54’ 13.75” W
Outfall 003:	Latitude: 34° 26’ 0.22” N;	Longitude: 92° 54’ 11.93” W
Outfall 005:	Latitude: 34° 26’ 0.66” N;	Longitude: 92° 54’ 13.61” 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: May 1, 2026
Expiration Date: April 30, 2031



Stacie R. Wassell
Deputy Director, Office of Water Quality
Arkansas Department of Energy and Environment
Division of Environmental Quality

April 30, 2026
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.

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[1]
Free Available Chlorine (FAC)	59.1	165.4	0.2	0.5[2]	once/week[3]	grab
Total Residual Chlorine (TRC)	N/A	66.2	N/A	0.2[2]	once/week[3]	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[4]						
***Pimephales promelas* (Chronic)**	N/A		7-Day Minimum			
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[5]	composite
Pass/Fail Retest 2 (7-day NOEC) 22419			Report (Pass=0/Fail=1)		once/month[5]	composite
Pass/Fail Retest 3 (7-day NOEC) 51444			Report (Pass=0/Fail=1)		once/month[5]	composite
***Ceriodaphnia dubia* (Chronic)**			7-Day Minimum			
Pass/Fail Lethality (7-day NOEC) TLP3B			Report (Pass=0/Fail=1)		once/quarter	composite
Pass/Fail Reproduction (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[5]	composite
Pass/Fail Retest 2 (7-day NOEC) 22416			Report (Pass=0/Fail=1)		once/month[5]	composite
Pass/Fail Retest 3 (7-day NOEC) 51443			Report (Pass=0/Fail=1)		once/month[5]	composite

1. See Part II.11 (Flow calculation condition).
2. The effluent limitations for FAC and TRC are instantaneous maximums, and cannot be averaged for reporting purposes. FAC and TRC shall be measured within fifteen (15) minutes of sampling.
3. When chlorinating. If chlorination is not used during the monitoring period, report NODI=9 (Conditional Monitoring - Not Required This Period) on the DMR.
4. See Part II.14 (WET Testing Requirements).
5. 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). This condition applies to *P. promelas* and *C. dubia*.

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, prior to the receiving stream.

PERMIT REQUIREMENTS

SECTION A2. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS: OUTFALL 003 - low volume wastewater consisting of floor drains, building sumps, and equipment drains within the turbine areas for 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 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.

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	once/quarter	grab
Oil and Grease (O&G)	N/A	N/A	10	15	once/month	grab
pH	N/A	N/A	Minimum 6.0 s.u.	Maximum 9.0 s.u.	once/month	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, prior to the receiving stream.

PERMIT REQUIREMENTS

SECTION A3. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS: OUTFALL 005 - low volume wastewater consisting of boiler blowdown from Unit 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.

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	once/quarter	grab
Oil and Grease (O&G)	N/A	N/A	10	15	once/month	grab
pH	N/A	N/A	Minimum 6.0 s.u.	Maximum 9.0 s.u.	once/month	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, 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 at least a Basic Industrial license from the State of Arkansas in accordance with PC&EC Rule 3.

2. In accordance with 40 C.F.R. §§ 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 Branch of the Office of Water Quality of DEQ for use of the alternate method or instrument.
   - The method and/or instrument is in compliance with 40 C.F.R. Part 136 or approved in accordance with 40 C.F.R. § 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 Assurance/Quality Control (QA/QC) 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. DEQ must be notified in writing and the permittee must receive written approval from DEQ if the permittee decides to return to the original permit monitoring requirements.

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

5. The term "low volume waste sources" (low volume wastewater) means, taken collectively as if from one source, wastewater from all sources except those for which specific limitations or standards are otherwise established in 40 C.F.R. Part 423. Low volume waste sources include, but are not limited to, the following: wastewaters from ion exchange water treatment systems, water treatment evaporator blowdown, laboratory and sampling streams, boiler blowdown,

floor drains, cooling tower basin cleaning wastes, recirculating house service water systems, and wet scrubber air pollution control systems whose primary purpose is particulate removal. Sanitary wastes, air conditioning wastes, and wastewater from carbon capture or sequestration systems are not included in this definition. [ref. 40 C.F.R. § 423.11(b)]

6. The term "metal cleaning waste" means any wastewater resulting from cleaning [with or without chemical cleaning compounds] any metal process equipment including, but not limited to, boiler tube cleaning, boiler fireside cleaning, and air preheater cleaning. [ref. 40 C.F.R. § 423.11(d)]

7. The term "blowdown" means the minimum discharge of recirculating water for the purpose of discharging materials contained in the water, the further buildup of which would cause concentration in amounts exceeding limits established by best engineering practices. [ref. 40 C.F.R. § 423.11(j)]

8. The term "free available chlorine" shall mean the value obtained using any of the "chlorine—free available" methods in Table IB in 40 C.F.R. § 136.3(a) where the method has the capability of measuring free available chlorine, or other methods approved by the permitting authority. [ref. 40 C.F.R. § 423.11(l)]

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

10. Prohibition of the discharge of Metal Cleaning Waste

    There shall be no discharge of metal cleaning waste, as defined in Part II.6.

11. The effluent flow from Outfall 001 must be calculated using the pump capacity and pump run time.

12. [Reserved]

13. 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, in accordance with 8 CAR 21-510. 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 Part III.D.6.

14. WHOLE EFFLUENT TOXICITY TESTING (7 DAY CHRONIC NOEC)

    It is unlawful and a violation of this permit for a permittee or his designated agent to manipulate test samples in any manner, to delay sample shipment, or to terminate or to cause to terminate a toxicity test. Once initiated, all toxicity tests must be completed unless specific authority has been granted by EPA Region 6 or the State NPDES permitting authority (DEQ).

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	001
Reported On DMR As Final Outfall	001
Critical Dilution (%)	94
Effluent Dilution Series (%)	30, 40, 53, 71, 94
Testing Frequency:	Once/Quarter
Sample Type	"Composite Sample (defined in Paragraph B.iii)"
Test Species/Methods:	40 C.F.R. 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.

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.

ii. The NOEC (No Observed Effect Concentration) is herein defined as the greatest effluent dilution at and below which toxicity 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 WET limits, chemical specific effluent limits, additional testing, and/or other appropriate actions to address toxicity.

B. REQUIRED TEST ACCEPTABILITY CRITERIA AND TEST CONDITIONS

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:

Condition/Criteria	***Ceriodaphnia dubia***	***Pimephales promelas***
Test Duration	Until 60% or more of surviving control females have 3 broods (max 8 days)	7 days
# of replicates per concentration	10	5
# of organisms per replicate	1	8
# of organisms per concentration	10	40 (minimum)
# of test concentrations per effluent	5 and a control	5 and a control
Sample Holding Time *	36 hours for first use	36 hours for first use
Sampling Requirement *	Minimum of 3 samples	Minimum of 3 samples
Test Acceptability Criteria	≥80% survival of all control organisms.	≥80% survival of all control organisms.
	Mean of 15 or more neonates per surviving control female.	Mean dry weight per surviving organism in control must be ≥0.25mg.
	60% of surviving control females must produce 3 broods.	
Coefficient of Variation **	40% or less, unless significant effects are exhibited.	40% or less, unless significant effects are exhibited.
Percent Minimum Significant Difference (PMSD range) for Sub-lethal Endpoint **	13 – 47	12 – 30

* 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 and the minimum number of effluent portions are waived during that sampling period. However, the permittee must collect an effluent composite sample volume during the period of discharge that is sufficient to complete the required toxicity tests with daily renewal of effluent and must meet the holding time between collection and first use of the sample. When possible, the effluent samples used for the toxicity tests shall be collected on separate 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 C of this section.

** Test failure may not be construed or reported as invalid due to a coefficient of variation value of greater than 40%, or a PMSD value greater than the higher value on the range provided.

i. Statistical Interpretation

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 the appropriate method manual listed in Part II or the most recent update thereof.

ii. 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), 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 was run concurrently with the receiving water control;

(2) the test indicating receiving water toxicity has been carried out to completion;

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

iii. Samples and Composites

a. The permittee shall collect a minimum of three samples (flow-weighted composite if possible) from the outfall(s).

b. The permittee shall collect a second and third sample (composite samples if possible) for use during the 24-hour renewal of each dilution concentration for each test. The permittee must collect the composite samples so that the maximum holding time for any effluent sample shall not exceed 36 hours for first use of the

sample. 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 0–6 degrees Centigrade during collection, shipping, and storage. A holding time up to 72 hours is allowed upon notification to DEQ of the need for additional holding time.

c. The permittee must collect the composite samples such that the effluent samples are representative of the discharge duration, and of any periodic episode of chlorination, biocide usage, or other potentially toxic substance discharged on an intermittent basis.

C. REPORTING

i. The permittee shall prepare a full report of the results of all tests conducted pursuant to this part in accordance with the Report Preparation Section of the most current publication of the method manual, for every valid or invalid toxicity test initiated, whether carried to completion or not. The permittee shall retain each full report and submit them to the Division via NetDMR. For any test which fails, is considered invalid, or which is terminated early for any reason, the full report must be submitted for Division review.

ii. A valid test for each species must be reported during each reporting period specified in PART I of this permit unless the permittee is performing a TRE which may increase the frequency of testing and reporting. One set of biomonitoring data for each species is to be recorded on the DMR for each reporting period. Additional results are reported under the retest codes below.

iii. The permittee shall submit the results of each valid toxicity test on the subsequent DMR for that reporting period as follows below. Submit retest information clearly marked as such with the subsequent DMR. Only results of valid tests are to be reported on the DMR.

Reporting Requirement	**Parameter STORET CODE**	
	Ceriodaphnia dubia	*Pimephales promelas*
Enter a "1" if the No Observed Effect Concentration (NOEC) for survival is less than the critical dilution, otherwise enter a "0."	TLP3B	TLP6C
Report the NOEC value for survival.	TOP3B	TOP6C
Enter a "1" if the NOEC for growth or reproduction is less than the critical dilution, otherwise enter a "0."	TGP3B	TGP6C
Report the NOEC value for growth or reproduction.	TPP3B	TPP6C

Reporting Requirement	Parameter STORET CODE	
	Ceriodaphnia dubia	*Pimephales promelas*
Report the highest (critical dilution or control) Coefficient of Variation.	TQP3B	TQP6C
(If required) Retest 1 – Enter a "1" if the NOEC for survival, growth or reproduction is less than the critical dilution, otherwise enter "0." (reported on quarterly DMR)*	22415	22418
(If required) Retest 2- Enter a "1" if the NOEC for survival, growth or reproduction is less than the critical dilution, otherwise enter "0." (reported on quarterly DMR)*	22416	22419
(If required) Retest 3- Enter a "1" if the NOEC for survival, growth or reproduction is less than the critical dilution, otherwise enter "0." (reported on quarterly DMR)*	51443	51444

* If retests are not required, Report NODI=9 (Conditional Monitoring - Not Required This Period).

iv. DMR parameters

Report the following parameters on the DMR:

Scheduled DMR: TLP6C, TOP6C, TPP6C, TGP6C, TQP6C, 22418, 22419, 51444, TLP3B, TOP3B, TPP3B, TGP3B, TQP3B, 22415, 22416, and 51443.

D. MONITORING FREQUENCY REDUCTION

i. The permittee may apply for a testing frequency reduction upon the successful completion of the first four consecutive quarters of testing for a 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 once per six months.

ii. Certification - The permittee must certify in writing that no test failures have occurred and that all tests meet all test acceptability criteria above. In addition, the permittee must provide a list with each test performed including test initiation date, species, and NOECs. Upon review and acceptance of this information, the Division will issue a letter of confirmation of the monitoring frequency reduction. A copy of the letter will be forwarded to the Division's compliance section to update the permit reporting requirements.

iii. Failures - If any test demonstrates lethal or sub-lethal effects at or below the critical dilution at any time during the life of this permit, three monthly retests are required. If a frequency reduction had been granted, the monitoring frequency for the affected test species reverts to once per quarter until the permit is re-issued.

iv. This monitoring frequency reduction 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.

v. For administratively continued facilities where permit renewal was held up by no fault of the permittee, the following language regarding WET testing frequency reduction applies after permit renewal:

The permittee may apply for a testing frequency reduction upon the successful completion of the first four consecutive quarters of testing after the expiration date of the previous permit, for one or both test species, provided that all of the following conditions are met:

a. The permittee tested quarterly upon the expiration date of that permit, and

b. The issuance of the renewed permit was not delayed by any fault of the permittee, and

c. No lethal or sub-lethal effects are demonstrated at or below the critical dilution for the first four consecutive quarters of testing after the expiration date of the previous permit.

E. PERSISTENT TOXICITY

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. Significant toxic effects are herein defined as a statistically significant difference at the 95% confidence level between the survival, growth, or reproduction of the appropriate test organism in a specified effluent dilution and the control (0% effluent). If the initial WET test conducted fails, the permittee will conduct three consecutively monthly retests. 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.

i. Retest

The permittee shall conduct a total of three (3) additional tests for any species that demonstrates significant effects at or below the critical dilution. The three additional tests shall be conducted monthly (one test per month) during the next three consecutive months. If testing on a quarterly basis, the permittee may substitute one of the additional tests in lieu of one routine toxicity test. A full report shall be prepared for each test required by this section in accordance with the reporting requirements previously outlined and submitted to the Division.

ii. Requirement to Initiate a Toxicity Reduction Evaluation

If persistent lethality is demonstrated by failure of one or more retests, the permittee shall initiate Toxicity Reduction Evaluation (TRE) requirements as specified in Part F of this section. If persistent sub-lethality is demonstrated by failure of two or more

retests, the permittee shall initiate Toxicity Reduction Evaluation (TRE) requirements. The permittee shall notify DEQ in writing within 5 days of notification of the failure of any retest, and the TRE initiation date will be the test completion date of the first failed retest for lethal TREs or second failed retest for sub-lethal TREs. A TRE may also be required due to a demonstration of intermittent effects at or below the critical dilution, or for failure to perform the required retests.

F. TOXICITY REDUCTION EVALUATION (TRE)

EPA Region 6 is currently addressing TREs as follows: A TRE is triggered following three sub-lethal test failures (a failure followed by two retest failures) or two test failures with lethal effects (a failure followed by one retest failure).

i. Within ninety (90) days of confirming lethality and/or sub-lethality in the retests, the permittee shall submit a Toxicity Reduction Evaluation (TRE) Action Plan and Schedule for conducting a TRE to DEQ. The TRE Action Plan shall specify the approach and methodology to be used in performing the TRE. A TRE 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 TRE Action Plan shall lead to the successful elimination of effluent toxicity at the critical dilution and include 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, a Toxicity Identification Evaluation (TIE) and confirmation activities, source evaluation, treatability studies, or alternative approaches. When the permittee conducts Toxicity Identification Evaluations to characterize the nature of the constituents causing toxicity, 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) 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;

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; 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 toxicity was demonstrated within 24 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;

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

d. 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.

iii. The permittee shall submit a quarterly TRE Activities Report to DEQ 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;

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;

d. Any results and interpretation of any chemical specific analysis, and for any characterization, identification, and confirmation tests performed during the quarter; and

e. Any changes to the initial TRE plan and schedule that are believed necessary.

iv. Finalizing a TRE

The permittee shall submit (to DEQ) a final report on TRE 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.

A TRE may be stopped if there is no toxicity at the critical dilution for a period of 12 consecutive months (with at least monthly testing) following confirmation of toxicity in the retests. The permittee would submit a final report to DEQ at that time.

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 C.F.R. § 122.44(d)(1)(v).

15. 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 C.F.R. § 125.94(c) and (d), respectively.

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

In accordance with 40 C.F.R. § 125.97(c), an annual certification statement and report must be submitted to the Division each year by October 1st. 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, this summary must be included in 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 Division, 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

In accordance with 40 C.F.R. § 125.96(e), 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 C.F.R. § 125.94(c)(6) are maintained and operated to function as designed. Records of the inspections shall be maintained on-site until the subsequent permit is issued.

18. Recordkeeping for the CWIS

A. In accordance with 40 C.F.R. § 125.97(d), records must be kept of all submissions that are part of the permit reporting requirements of Parts II.15, 16, and 17 must be retained until the subsequent permit is issued.

B. In accordance with 40 C.F.R. § 125.97(f), all records supporting the Director's Determination of BTA for Entrainment under 40 C.F.R. § 125.98(f) must be retained until such time as the Director revises the Determination of BTA for Entrainment in the permit.

C. In accordance with 40 C.F.R. § 125.97(a), Discharge Monitoring Reports (DMRs), and results of all monitoring, demonstrations, and other information required by the permit sufficient to determine compliance with the permit conditions and requirements established

under 40 C.F.R. § 125.94 shall be submitted to the Director. The daily intake flows and the weekly visual inspections shall be submitted to DEQ with each monthly DMR.

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

20. Monitoring Frequency Reductions

    The facility must remain in compliance with all limitations and requirements of the permit, (including, but not limited to: exceedance of effluent limitations of the parameters for which reductions have been granted, or failure to submit DMRs), and must not be subject to a new formal enforcement action, or the permit may be reopened to increase monitoring frequencies , in accordance with Part II.3 of the permit.

    The facility is not eligible for any additional monitoring frequency reductions for TSS, O&G, and pH. No monitoring frequency reduction may be granted for Temperature.

21. Cessation of Operation of the CWIS

    After January 31, 2028, operation of the CWIS is prohibited.

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 PC&EC Rule 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 PC&EC Rule 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 PC&EC Rule 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 statutes 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, state, or local requirement, 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 PC&EC Rule 9 (Rule 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 C.F.R. §§ 122.64 and 124.5(d), as adopted in PC&EC Rule 6, and the provisions of PC&EC Rule 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 C.F.R. § 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 (10) 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 periods of equipment downtime or preventive maintenance; and
(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 C.F.R. Parts 257, 258, and 503.

B. Any changes to the permittee's disposal practices described in the Statement of Basis, 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 at least once per year, 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 Division approved method (i.e., as allowed in the *Other Specified Monitoring Requirements* condition under Part II), 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 Division.

3. **Monitoring Procedures**

Monitoring must be conducted according to test procedures approved under 40 C.F.R. 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 C.F.R. § 127.11(a)(1) and 40 C.F.R. § 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, use the following link to access electronic filing: https://cdx.epa.gov. Permittees who are unable to file electronically may request a waiver from the Director in accordance with 40 C.F.R. § 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 C.F.R. 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.
G. The chain of custody that records the sequence of custody, control, transfer, analysis, and measurement of the 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 C.F.R. § 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 C.F.R. § 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 which are subject neither to effluent limitations in the permit, nor to the notification requirements under 40 C.F.R. § 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**

Please be aware that the notifications can be sent by email to EE.Water.Enforcement.Report@arkansas.gov or at 501-682-0624 for immediate reporting:

A. The permittee shall report any noncompliance which may endanger health or the environment within 24 hours from the time the permittee becomes aware of the circumstances to the Enforcement Branch of the Office of Water Quality of DEQ. 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 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 in Part I of the permit.

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

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 including Existing Manufacturing, Commercial, Mining, and Silvicultural Dischargers**

The permittee shall notify the Director as soon as he/she 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 including those listed in 40 C.F.R. § 401.15 which is not limited in the permit, if that discharge will exceed the highest of the "notification levels" described in 40 C.F.R. § 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 including those listed in 40 C.F.R. § 401.15 which is not limited in the permit, if that discharge will exceed the highest of the "notification levels" described in 40 C.F.R. § 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 implemented through procedures outlined by PC&EC Rule 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 C.F.R. Part 2 and PC&EC Rule 6, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the Division of Environmental Quality. As required by the regulations and rules, 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 Water and Air 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 C.F.R. § 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. **"7-Day Average"** 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 (also known as "average weekly"). 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, or most probable number (MPN) per 100 ml.
2. **"Act"** means the Clean Water Act, Public Law 95-217 (33.U.S.C. 1251 et seq.) as amended.
3. **"Administrator"** means the Administrator of the U.S. Environmental Protection Agency.
4. **"Applicable standards and limitations"** means all State, interstate, and federal standards and limitations to which a "discharge," a "sewage sludge use or disposal practice," or a related activity is subject under the Act, including "effluent limitations," water quality standards, standards of performance, toxic effluent standards or prohibitions, "best management practices," pretreatment standards, and "standards for sewage sludge use or disposal" under sections 301, 302, 303, 304, 306, 307, 308, 403, and 405 of the Act.
5. **"Applicable water quality standards"** means all water quality standards to which a discharge is subject under the 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 (PC&EC) Rule 2, as amended.
6. **"Best Management Practices (BMPs)"** means 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 material storage. 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 C.F.R. § 122.41(m)(1)(i).
8. **"Composite sample"** means 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. **"CV"** means coefficient of variation.
10. **"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.

11. **"Daily Maximum"** discharge limitation means the highest allowable "daily discharge" during the calendar month.
12. **"Director"** means the Director of the Division of Environmental Quality.
13. **"Dissolved oxygen limit"** means
    A. when limited in the permit as a minimum monthly average, the lowest acceptable monthly average value, determined by averaging all samples taken during the calendar month; **OR**
    B. when limited in the permit as an instantaneous minimum value, that no value measured during the reporting period may fall below the stated value.
14. **"Division"** means the Division of Environmental Quality (**DEQ**).
15. **"E. coli"** means a sample that 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, 7-Day Average as the geometric mean of all "daily discharges" within a calendar week, and the Monthly Average as the geometric mean of all "daily discharges" within a calendar month, in colonies or MPN per 100 ml.
16. **"Fecal Coliform Bacteria (FCB)"** means a sample that 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, 7-Day Average as the geometric mean of all "daily discharges" within a calendar week, and the Monthly Average as the geometric mean of all "daily discharges" within a calendar month, in colonies or MPN per 100 ml.
17. **"Grab sample"** means an individual sample collected in less than 15 minutes in conjunction with an instantaneous flow measurement.
18. **"Industrial User"** means a source of Indirect Discharge. Indirect Discharge means the introduction of pollutants into a POTW from any non-domestic source regulated under section 307(b), (c), or (d) of the Act.
19. **"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.
20. **"Instantaneous Maximum"** (when limited in the permit as an instantaneous maximum value) means that no value measured during the reporting period may fall above the stated value.
21. **"Instantaneous Minimum"** (when limited in the permit as an instantaneous minimum value) means that no value measured during the reporting period may fall below the stated value.
22. **"Interference"** means a discharge which, alone or in conjunction with a discharge or discharges from other sources, both:
    A. Inhibits or disrupts the POTW, its treatment processes or operations, or its sludge processes, use, or disposal; and
    B. Therefore is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation), or of the prevention of sewage sludge use or disposal in compliance with the following statutory provisions and regulations, or permits issued thereunder (or more stringent State or local regulations): Section 405 of the Clean Water Act (CWA), the Solid Waste Disposal Act (SWDA) (including Title II, more commonly referred to as the Resource Conservation and Recovery Act (RCRA), and including State regulations contained in any State sludge management plan prepared pursuant to subtitle D of the SWDA), the Clean Air Act, the Toxic Substances Control Act, and the Marine Protection, Research and Sanctuaries Act.

23. **"Monitoring and Reporting"**
    NPDES permits specify monitoring and reporting requirements for specific periods defined as follows:
    A. **"MONTHLY"** means a calendar month, or any portion of a calendar month, for monitoring requirement frequency of once/month or more frequently.
    B. **"BI-MONTHLY"** means two (2) calendar months or any portion of 2 calendar months for monitoring requirement frequency of once/2 months or more frequently.
    C. **"QUARTERLY"** means:
        1. 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; **OR**
        2. 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"** means 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.
    E. **"ANNUAL" or "YEARLY"** means 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.
24. **"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.
25. **"National Pollutant Discharge Elimination System (NPDES)"** 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 Act.
26. "**NOEC**" means No Observed Effect Concentration.
27. **"Pass Through"** means a discharge which exits the POTW in quantities or concentrations which, alone or in conjunction with a discharge or discharges from other sources, is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation).
28. **"PC&EC"** means the Pollution Control and Ecology Commission.
29. **"Percent Removal"** means a percentage expression of the removal efficiency across a treatment plant for a given pollutant parameter, as determined from the 30-day average values of the effluent pollutant concentrations for a given time period.
30. **"PMSD"** means Percent Minimum Significant Difference.
31. **"POTW"** means Publicly Owned Treatment Works, as defined in 40 C.F.R. § 403.3(q).
32. **"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.

33. **"Sewage sludge"** means any solid, semi-solid, or liquid residue removed during the treatment of municipal waste water or domestic sewage. Sewage sludge includes, but is not limited to, solids removed during primary, secondary, or advanced waste water treatment, scum, septage, portable toilet pumpings, type III marine sanitation device pumpings (33 C.F.R. Part 159), and sewage sludge products. Sewage sludge does not include grit or screenings, or ash generated during the incineration of sewage sludge.
34. **"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.
35. **Units of Measure:**
    A. **"cfs"** means cubic feet per second.
    B. **"MGD"** means million gallons per day.
    C. **"µg/l"** means micrograms per liter, or parts per billion (ppb).
    D. **"mg/l"** means milligrams per liter, or parts per million (ppm).
    E. **"ppb"** means parts per billion.
    F. **"ppm"** means parts per million.
    G. **"s.u."** means standard units.
    H. **"lb/d"** means pounds per day.
    I. **"col/100 ml"** means colonies per 100 milliliters, or most probable number (MPN) per 100 milliliters.
36. **"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 or improper operations.
37. **"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.
38. **"Week"** means a calendar week, consisting of the 7-day period of Sunday through Saturday.
39. **"Weekday"** means Monday – Friday.

Final Fact Sheet

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

1. PERMITTING AUTHORITY

The issuing office is:

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

2. APPLICANT

The applicant's mailing address and 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:

Guy Lester, P.E.
Professional Engineer
NPDES Discharge Permits Section
Office of Water Quality
(501) 519-0304
E-mail: guy.lester@arkansas.gov

Zachary Carroll, PhD, P.E.
Engineer Supervisor
NPDES Discharge Permits Section
Office of Water Quality
(501) 682-0625
E-mail: zachary.carroll@arkansas.gov

4. PERMIT ACTIVITY

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

A federally enforceable Settlement Agreement (the "Agreement") between defendant Entergy Arkansas, LLC, and plaintiffs Sierra Club and National Parks Conservation Association (Case No. 4:18cv854, E.D. Ark.) (Doc. 83) was issued on March 11, 2021, which governs the continued operation of several of Entergy's plants in Arkansas. The Agreement specifically requires that "[n]o later than December 31, 2027, Entergy Arkansas shall permanently cease all operations of existing units …at Lake Catherine." Unit 4 will cease operation no later than the above date. After Unit 4 ceases operation, no cooling water will be generated or discharged, but other wastewaters may continue to be generated and discharged from other activities at the plant.

The permittee submitted a permit renewal application on February 28, 2024, with all additional information received by June 20, 2024. The previous discharge permit is being reissued for a 5-year term in accordance with regulations promulgated at 40 C.F.R. § 122.46(a).

DOCUMENT ABBREVIATIONS

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

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
C.F.R. - 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
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
PC&EC - Arkansas Pollution Control and Ecology Commission
Rule 2 - PC&EC Rule 2: 8 CAR Part 21
Rule 6 - PC&EC Rule 6: 8 CAR Part 25
Rule 8 - PC&EC Rule 8: 8 CAR Part 11
Rule 9 - PC&EC Rule 9: 8 CAR Part 12
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_Enforcement%20Review_20240403.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 permittee mailing address and driving directions have been removed from the cover page.
2. Outfall 002 and Outfall 004 have been removed from the permit.
3. The monitoring frequencies for TSS, O&G, and pH have been revised, and Part II.20 has been included concerning future revision of monitoring frequencies. See Section 14 below for details.
4. Part II conditions have been renumbered.
5. Additional definitions from 40 C.F.R. Part 423 have been included in Part II.
6. The Critical Dilution and dilution series for WET testing have been revised in Part II.14. See Section 12 below for details.
7. CWIS Reporting and Recordkeeping requirements have been revised.
8. A requirement to cease operation of the CWIS has been included as Part II.21 of the permit. See Section 11.I below for details.
9. Parts III and IV have been updated to the current standard conditions and definitions.

6. RECEIVING STREAM SEGMENT AND DISCHARGE LOCATION

The outfalls are located at the following coordinates based on the application, and confirmed with Google Earth using WGS84:

Outfall 001: Latitude: 34° 26’ 0.42” N; Longitude: 92° 54’ 13.75” W
Outfall 003: Latitude: 34° 26’ 0.22” N; Longitude: 92° 54’ 11.93” W
Outfall 005: Latitude: 34° 26’ 0.66” N; Longitude: 92° 54’ 13.61” W

The receiving waters named:

Lake Catherine, thence to the Ouachita River in Segment 2F of the Ouachita River Basin. The receiving stream with Assessment Unit AR_08040101_4055 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 listed on the 2022 303(d) list. Therefore, no permit action is needed.

B. Applicable Total Maximum Daily Load (TMDL) Reports

There are no applicable TMDLs for the receiving stream.

C. Endangered Species

No comments on the application were received from the USF&WS.

The Arkansas Natural Heritage Commission has notified DEQ in a previous permit renewal 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, stargazing 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, DEQ 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 PC&EC Rule 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 (monthly average flow limit)
Outfall 003: 0.1752 MGD (highest monthly average flow, Aug 2022–July 2024)
Outfall 005: 0.2002 MGD (highest monthly average flow, Aug 2022–July 2024)

B. Type of Treatment: Outfall 001 – none
Outfall 003 – oil/water separator
Outfall 005 – neutralization

C. Discharge Description: Outfall 001: once through cooling water from Unit 4
Outfall 003: low volume wastewater consisting of floor drains, building sumps, and equipment drains within the turbine areas for Unit 4
Outfall 005: low volume wastewater consisting of boiler blowdown and 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 Rule 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 natural gas-fired steam electric power generating station.

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 Division of Environmental Quality has determined to issue a permit for the discharge described in the application. Permit requirements are based on federal regulations (40 C.F.R. Parts 122, 124, and Subchapter N) and rules 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 C.F.R. § 124.7.

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

Following regulations promulgated at 40 C.F.R. § 122.44, the permit limits are based on either technology-based effluent limits pursuant to 40 C.F.R. § 122.44(a) or on State water quality standards and requirements pursuant to 40 C.F.R. § 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	0.2	0.5	0.2	0.5
TRC*	N/A	N/A	N/A	0.2	N/A	0.2	N/A	0.2
Temperature	95°F (Inst. Max.)		N/A		95°F (Inst. Max.)		95°F (Inst. Max.)	
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 003								
TSS	N/A	N/A	30.0	100	30.0	100.0	30.0	100
O&G	10	15	15.0	20.0	10.0	15.0	10	15
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	30.0	100	30.0	100.0	30.0	100
O&G	10	15	15.0	20.0	10.0	15.0	10	15
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.F 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		
Flow	Water Quality	Rule 2.502, CWA § 402(o), and previous permit
FAC	Technology	40 C.F.R. § 423.12(b)(6), 40 C.F.R. § 122.44(l), and previous permit
TRC	Technology	40 C.F.R. § 423.13(b)(1), 40 C.F.R. § 122.44(l), and previous permit
Temperature	Water Quality	Rule 2.502, CWA § 402(o), and previous permit
pH	Water Quality	Rule 2.504, CWA § 402(o), and previous permit
OUTFALL 003 & OUTFALL 005		
TSS	Technology	40 C.F.R. § 423.12(b)(3), 40 C.F.R. § 122.44(l), and previous permit
O&G	Water Quality	Rule 2.510, CWA § 402(o), and previous permit
pH	Water Quality	Rule 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 C.F.R. § 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 C.F.R. § 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 C.F.R. § 122.45(f)(1), all pollutants limited in permits shall have limitations expressed in terms of mass if feasible. 40 C.F.R. § 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 FAC and TRC from Outfall 001 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. flow limit for Outfall 001

476 MGD for Daily Max. flow limit for Outfall 001

The factor 2/24 is based on the requirement that FAC and TRC are 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.

2. Daily Maximum Limits:

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

The temperature limit at Outfall 001 is based on Rule 2.502.

All other daily maximum limits are based on 40 C.F.R. Part 423.

D. **208 Plan (Water Quality Management Plan)**

The 208 Plan, developed by DEQ under provisions of Section 208 of the federal Clean Water Act, is a comprehensive program to work toward achieving federal water goals in Arkansas. The initial 208 Plan, adopted in 1979, provides for annual updates, but can be revised more often if necessary.

This facility is not in the 208 Plan, nor required to be, because all water quality-based limits in the permit are directly from Rule 2.

E. **Applicable Effluent Limitations Guidelines**

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

40 C.F.R. §§ 423.12(b)(6) and 423.13(b)(1) are applicable to Outfall 001 because the discharge from this outfall consists of once through cooling water.

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

F. **Water Quality Standards for ELG-limited pollutants**

The ELGs promulgated under 40 C.F.R. §§ 423.12 and 423.13 include limitations for TRC and FAC. The TRC and FAC ELGs apply to Outfall 001. 40 C.F.R. §§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 Rule 2.508. However, the narrative water quality standard in Rule 2.409 forbids the discharge of toxic pollutants in amounts which are toxic. Outfall 001 has Whole Effluent Toxicity (WET) testing requirements. WET testing results for Outfall 001 from March 2019 through December 2023 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 Rule 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 technology-based ELG limits for TRC and FAC have been included.

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

DEQ 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), Rule 2 (Rule 2.508) and criteria obtained from the "EPA National Recommended Water Quality Criteria."

Under Federal Regulation 40 C.F.R. § 122.44(d), as adopted by Rule 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 C.F.R. § 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	0.1752 MGD = 0.27 cfs	Outfall 003 average
Discharge Flow = Q	0.2002 MGD = 0.31 cfs	Outfall 005 average
7Q10 Background Flow	200 cfs	FERC agreement[1]
LTA Background Flow	600 cfs	Calculated (3 x 7Q10)
TSS	2.0 mg/l	CPP, Table 4-7
Hardness as $CaCO_3$	36 mg/l	CPP, Table 4-6

[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[1]	MQL, µg/l
OUTFALL 001		
Copper	1.09	0.5
Mercury	0.00258	0.005
Nickel	0.812	0.5
OUTFALL 003		
Copper	10.9	0.5
Mercury	0.0105	0.005
Nickel	0.812	0.5
OUTFALL 005		
Copper	1.79	0.5
Mercury	0.00267	0.005
Nickel	0.742	0.5

[1] Single data point from PPS/EPA Form 2C from application.

Instream Waste Concentrations (IWCs) were calculated in the manner described in Part 4.8.1 of the CPP and compared to the applicable Criteria. The following tables summarize the results of the analysis. The complete evaluation can be viewed on the Division's website at the following address:

https://www.adeq.state.ar.us/downloads/WebDatabases/PermitsOnline/NPDES/PermitInformation/AR0001147_Toxicity%20Evaluation%20-%20All%20Outfalls_20251114.pdf

1. Aquatic Toxicity Evaluation

a. Acute Criteria Evaluation

Pollutant	Concentration Reported (C_e) µg/l	$C_e \times 2.13$[1]	Instream Waste Concentration (IWC)	Criteria[2]	Reasonable Potential (Yes/No)
			Acute, µg/l	Acute, µg/l	
Outfall 001					
Copper	1.09	2.32	2.26	14.59	No
Mercury	0.00258	0.00550	0.00529	7.41	No
Nickel	0.812	1.73	1.68	990.05	No
Outfall 003					
Copper	10.9	23.22	1.02	14.59	No
Mercury	0.0105	0.02237	0.00023	7.41	No
Nickel	0.812	1.73	0.35	990.05	No
Outfall 005					
Copper	1.79	3.81	0.83	14.59	No
Mercury	0.00267	0.00569	0.00007	7.41	No
Nickel	0.742	1.58	0.35	990.05	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 Rule 2.508 unless otherwise specified.

b. Chronic Criteria Evaluation

Pollutant	Concentration Reported (C_e) µg/l	$C_e \times 2.13$[1]	Instream Waste Concentration (IWC)	Criteria[2]	Reasonable Potential (Yes/No)
			Chronic, µg/l	Chronic, µg/l	
Outfall 001					
Copper	1.09	2.32	2.21	10.65	No
Mercury	0.00258	0.00550	0.00511	0.012	No
Nickel	0.812	1.73	1.63	109.95	No
Outfall 003					
Copper	10.9	23.22	0.91	10.65	No
Mercury	0.0105	0.02237	0.00012	0.012	No
Nickel	0.812	1.73	0.35	109.95	No
Outfall 005					
Copper	1.79	3.81	0.81	10.65	No
Mercury	0.00267	0.00569	0.00004	0.012	No
Nickel	0.742	1.58	0.35	109.95	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 Rule 2.508 unless otherwise specified.

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

Pollutant	Concentration Reported (C_e) µg/l	$C_e \times 2.13$[1]	Instream Waste Concentration (IWC)	Criteria[2]	Reasonable Potential (Yes/No)
Outfall 001					
Copper	1.09	2.32	1.59	13,000	No
Mercury	0.00258	0.00550	0.00287	2[3]	No
Nickel	0.812	1.73	1.07	46,000	No
Outfall 003					
Copper	10.9	23.22	0.80	13,000	No
Mercury	0.0105	0.02237	0.00001	2[3]	No
Nickel	0.812	1.73	0.34	46,000	No
Outfall 005					
Copper	1.79	3.81	0.79	13,000	No
Mercury	0.00267	0.00569	0.000003	2[3]	No
Nickel	0.742	1.58	0.34	46,000	No

[1] Statistical ratio used to estimate the 95th percentile using a single effluent concentration or the geometric mean of a dataset.
[2] Unless otherwise specified, criteria are adapted from "National Recommended Water Quality Criteria – Human Health Criteria Table," 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 Rule 2.508.
[3] Maximum Contaminant Level (MCL) specified in the National Primary Drinking Water Regulations.

DEQ 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.

H. Cooling Water Intake Structures (CWIS) - 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 facility is a steam electric power generating station. The facility previously operated four power-generating units (Units 1, 2, 3, and 4). Units 1, 2, and 3 have been permanently taken out of service, and only Unit 4 continues to operate. The facility uses once-through cooling water withdrawn from Lake Catherine through one cooling water intake structure (CWIS).

CWIS 1 previously served Units 1, 2, and 3. Since Units 1,2, and 3 have been permanently taken out of service, CWIS 1 has also been permanently taken out of service.

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 a 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 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 C.F.R. § 122.21(r)(1)(ii) applies to all existing facilities. It requires existing facilities to submit the information specified under 40 C.F.R. §§ 122.21(r)(2) and (3), and the applicable provisions of 40 C.F.R. §§ 122.21(r)(4)–(8).

   This information was submitted with the permit renewal application.

   Facilities that have an actual intake flow (AIF) of more than 125 MGD are required to submit the information described in 40 C.F.R. §§ 122.21(r)(9) – (13). The definition of AIF, from 40 C.F.R. § 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, Unit 4 has experienced an increase in the amount of cooling water withdrawn since the issuance of the renewal permit in 2019, resulting in an increase in the AIF above 125 MGD. This would normally require submission of the entrainment information described in 40 C.F.R. §§ 122.21(r)(9)–(13) as part of the permit renewal application. However, Entergy requested a waiver for the submission of the aforementioned entrainment requirements based on the facility meeting the conditions set forth in 40 C.F.R. § 122.21(r)(1)(ii)(G) for facilities planning to retire within one permit cycle because Entergy is required to permanently cease operation of existing units of the Lake Catherine plant no later than December 31, 2027 (as part of ongoing legal proceedings and per Operating Air Permit 1717-AOP-R9). DEQ granted the waiver, in a letter dated March 23, 2023.

2. Compliance with BTA Standards for Impingement Mortality

   The facility has chosen to meet the BTA Standards for Impingement Mortality through compliance with 40 C.F.R. § 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, and CWIS 1, which served Units 1, 2, and 3 and discharged through Outfall 002, has been permanently taken out of service and will no longer withdraw cooling water from Lake Catherine. CWIS 1 had 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 2019 through December 2023, is 136.1 MGD. This represents a flow reduction of 71.4% 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, and is now permanently retired. One of the factors in 40 C.F.R. § 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 136.1 MGD (CWIS 2). Therefore, the total flow reduction, from 723.5 MGD to 136.1 MGD, is 81.2%.

c. Seasonal operation

The facility does not operate continuously, and only operates during peak demand. Based on the period of 2019-2023, and the capacity of Unit 4 (547 MW), the average capacity utilization of the facility is 4.93%.

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 Division 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 Division has determined that the above systems of technologies qualify as site-specific BTA for impingement mortality and satisfies the requirements of 40 C.F.R. § 125.94(c)(6).

3. Compliance with BTA Standards for Entrainment

The Division 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 C.F.R. § 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.H.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 Division 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 Federally-listed threatened and endangered species as none have been identified in Lake Catherine. The application was sent to the USF&WS for the 60-day early review on September 25, 2024, as required by 40 C.F.R. § 125.98(h). No comments on the application were received from the USF&WS during the 60-day early review period

This determination was also based on consideration of the factors specified in 40 C.F.R. § 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, and is now permanently out of service.

These systems of technologies comply with the requirements of 40 C.F.R. § 125.94(d).

4. Endangered Species

The receiving stream is not classified as an Ecologically Sensitive Waterbody. As noted in Sections 7.C and 11.H.3 above, no comments were received from the USF&WS during the early 60-day review period required by 40 C.F.R. § 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 C.F.R. § 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 C.F.R. § 125.97(c).

Part II.17 satisfies the requirements for weekly visual inspections in 40 C.F.R. § 125.96(e).

I. **Cessation of Operation of Unit 4 and the CWIS**

A federally-enforceable Settlement Agreement between Entergy Arkansas, LLC, and the Sierra Club and the National Parks Conservation Association (Case No. 4:18cv854, E.D. Ark.) (Doc. 83) was issued on March 11, 2021, which governs the continued operation of several Entergy power plants in Arkansas. The Agreement specifically requires that "[n]o later than December 31, 2027, Entergy Arkansas shall permanently cease all operations of existing units…at Lake Catherine."

A letter from the permittee, dated March 2, 2023, was received by the Division requesting a waiver of the 316(b) entrainment permit application requirements in 40 C.F.R. § 122.21(r) because the facility will retire during the next permit cycle, in accordance with 40 C.F.R. § 122.21(r)(l)(ii)(G). The waiver was granted by the Division in a letter to the permittee dated March 23, 2023.

Based on the requirement from the Settlement Agreement, and the waiver, Part II.21 has been included in the permit, requiring that the operation of the CWIS shall cease no later than January 31, 2026. The additional month is to allow for thorough cooling of equipment, and cooling system flushings.

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, DEQ is required under 40 C.F.R. §122.44(d)(1), adopted by reference in Rule 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.

Since 7Q10 is greater than 100 cfs (ft^3/sec), and the dilution ratio (DR) is less than 100:1, 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)) × 100

Qd = Daily Max. Flow = 476 MGD = 736.5 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) × 7Q10 = 50 cfs
CD = (736.5) / (736.5+50) × 100 = 94%

DR = (7Q10 + Qd) / Qd = (476 + 200) / (200) = 3.4 < 100

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%, 40%, 53%, 71%, and 94%** (See the CPP). The low-flow effluent concentration (critical dilution) is defined as **94**% 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 C.F.R. § 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 Division shows toxicity in the permittee's discharge. Modification or revocation of this permit is subject to the provisions of 40 C.F.R. §122.62, as adopted by reference in PC&EC Rule 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:	2/11/2026	Reviewer:	N. McKenna/ M. Barnett		
Facility Name:	Entergy Arkansas, LLC- Lake Catherine Plant				
Previous Dilution series:	30, 41, 54, 72, 96	Proposed Dilution Series:	30, 40, 53, 71, 94		
Previous Critical Dilution:	96	Proposed Critical Dilution:	94		
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		Invertebrate		
TEST DATE	Lethal NOEC	Sub-Lethal NOEC	Lethal NOEC	Sub-Lethal NOEC	Treatment
6/30/2021	96	96	96	96	none
6/30/2021	96	96	96	96	UV
12/31/2021			96	96	none
12/31/2021			96	96	UV
6/30/2022			*	*	none
6/30/2022			96	96	UV
12/31/2022	96	96	96	96	none
12/31/2022	96	96	96	96	UV
6/30/2023			96	96	none
6/30/2023			96	96	UV
12/31/2023	96	96	96	96	none
12/31/2023	96	96	96	96	UV
6/30/2024	96	96	96	96	none
6/30/2024	96	96	96	96	UV
12/31/2024			96	96	none
12/31/2024			96	96	UV
3/31/2025	96	96	96	96	none
3/31/2025	96	96	96	96	UV
6/30/2025	96	96	96	96	none
6/30/2025	96	96	96	96	UV
9/30/2025	96	96	96	96	none
9/30/2025	96	96	96	96	UV
12/31/2025	96	96	96	96	none
12/31/2025	96	96	96	96	UV

***Test invalid.**

WET testing frequency reduction granted 11/13/2019. Annual for *P. promelas* and twice per year for *C. dubia*.

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	16	16	23	23
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	1.064	1.064	1.064	1.064
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 C.F.R. § 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 C.F.R. § 122.48(b)] and to ensure compliance with permit limitations [40 C.F.R. § 122.44(i)(l)].

The sampling type and sampling frequency for Temperature are based on the previous discharge permit.

Requirements for sample type, except for Temperature, are based on Part 5.4 of the CPP.

The sampling frequency for FAC from Outfall 001 is based on a review of 24 data points, as reported on DMRs from December 2021 – July 2024, and Parts 5.4 and 5.5 of the CPP.

The sampling frequency for TRC from Outfall 001 is based on the best engineering judgment of the permit writer (after a review of 24 data points, as reported on DMRs from December 2021 – July 2024, and Parts 5.4 and 5.5 of the CPP). Since the facility discharges intermittently, and chlorination is not always used, setting the monitoring frequency of TRC the same as for FAC was deemed appropriate.

The sampling frequencies for TSS and O&G from Outfalls 003 and 005 are based on a review of 24 data points, as reported on DMRs from August 2022 – July 2024, and Parts 5.4 and 5.5 of the CPP.

The sampling frequency for pH from all outfalls is based on the best engineering judgment of the permit writer, taking into account the history of compliance with the pH limits, and other monitoring frequency reductions.

The data review for monitoring frequency reduction may be viewed at the following web address:

https://www.adeq.state.ar.us/downloads/WebDatabases/PermitsOnline/NPDES/PermitInformation/AR0001147_Monitoring%20Frequency%20Reduction%20Calculations_20260121.pdf

Parameter	Previous Permit		Final Permit	
	Frequency of Sample	Sample Type	Frequency of Sample	Sample Type
Outfall 001				
Flow	continuous	calculated	continuous	calculated
FAC	once/week	grab	once/week[1]	grab
TRC	once/week	grab	once/week[1]	grab
Temperature	continuous	record	continuous	record
pH	once/week	grab	once/week	grab
Chronic WET	once/quarter	composite	once/quarter	composite
Outfall 003 & Outfall 005				
Flow	once/day	instantaneous	once/day	instantaneous
TSS	once/week	grab	once/quarter	grab
O&G	once/week	grab	once/month	grab
pH	once/week	grab	once/month	grab

[1] When chlorinating. If chlorination is not used during the monitoring period, report NODI=9 (Conditional Monitoring - Not Required This Period) on the DMR. This waiver of sampling when chlorination is not being used is in accordance with 40 C.F.R. § 122.44(a)(2) in that the submission of the DMR with an NODI=9 (in accordance with the condition in Part IA.A1 of the permit) demonstrates that "the pollutant is not present in the discharge, or is present only at background levels from intake water and without any increase in the pollutant due to activities of the discharger."

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 write the permit:

A. Application No. AR0001147 received February 28, 2024, and all additional information received by June 20, 2024.
B. PC&EC Rule 2.
C. PC&EC Rule 3.
D. PC&EC Rule 6, which incorporates by reference certain federal regulations included in Title 40 of the Code of Federal Regulations at Rule 6.104.
E. 40 C.F.R. Parts 122 and 125.
F. 40 C.F.R. Part 423.
G. Discharge permit file AR0001147.
H. Discharge Monitoring Reports (DMRs).
I. "2022 Integrated Water Quality Monitoring and Assessment Report," DEQ.

J. "2022 List of Impaired Waterbodies (303(d) List)," DEQ.
K. Continuing Planning Process (CPP).
L. OWQ guidance memorandum "OWQ Guidelines for Decimal Places and Rounding Conventions in NPDES Permits" documented in a February 28, 2023.
M. Technical Support Document for Water Quality-based Toxic Control.
N. Letter, dated March 23, 2023, from OWQ to Entergy Arkansas, LLC.
O. Inspection Report dated July 11, 2023.
P. Enforcement Review, dated April 3, 2024.
Q. Planning Review, dated April 1, 2024.
R. NPDES Permit Rating.
S. Toxicity Evaluation.
T. Monitoring frequency reduction calculations.
U. Site visit report, dated January 13, 2025.
V. EPA Review, dated March 19, 2026.

18. PUBLIC NOTICE

The public notice of the draft permit was published for public comment on March 22, 2026. The last day of the comment period was thirty (30) days after the publication date. No public comments were received on the draft permit.

Copies 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 Arkansas Department of Parks, Heritage and Tourism, the EPA, and the Arkansas Department of Health.

19. PERMIT FEE

In accordance with Rule 9.403(A)(1), the annual fee for the permit is $15,000.

This facility is billed under Fee Code J.

20. POINT OF CONTACT

For additional information, contact:

Guy Lester, P.E.
Professional Engineer
Permits Branch, Office of Water Quality
Division of Environmental Quality
5301 Northshore Drive
North Little Rock, Arkansas 72118-5317
Telephone: (501) 519-0304