Permit Number: AR0049611
AFIN: 30-00337

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.),

Arkansas Electric Cooperative Corporation
Magnet Cove Generating Station

is authorized to discharge cooling tower blowdown and low volume wastewater from a facility located as follows: 410 Henderson Road, Malvern, AR 72104, in Hot Spring County.

Facility Coordinates: Latitude: 34° 25’ 47.93” N; Longitude: 92° 50’ 3.38” W

Discharge is to receiving waters named:

Ouachita River in Segment 2F of the Ouachita River Basin.

The outfalls are located at the following coordinates:

Outfall 001:	Latitude: 34° 25’ 41.4” N;	Longitude: 92° 51’ 31.0” W
Internal Outfall 01A:	Latitude: 34° 25’ 48.8” N;	Longitude: 92° 49’ 59.3” W
Internal Outfall 01B:	Latitude: 34° 25’ 48.8” N;	Longitude: 92° 49’ 59.3” 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: January 1, 2025
Expiration Date: December 31, 2029

Digitally signed by Stacie R. Wassell
DN: cn=Stacie R. Wassell, o=Division of Environmental Quality, ou=Office of Water Quality, email=stacie.wassell@adeq.state.ar.us, c=US
Date: 2024.11.27 00:37:14 -06'00'

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

November 27, 2024
Issue Date

PART I
PERMIT REQUIREMENTS

SECTION A1. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS: OUTFALL 001 – combined wastestream consisting of cooling tower blowdown and low volume wastewater.

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	Report, MGD	Report, MGD	once/day	totalizing meter[3]
Total Suspended Solids (TSS)	157.9	526.3	30.0	100	once/month	grab
Oil and Grease (O&G)	52.6	78.9	10	15	once/month	grab
pH	N/A	N/A	Minimum 6.0 s.u.	Maximum 9.0 s.u.	once/month	grab
Acute WET Testing[1]						
***Pimephales promelas* (Acute)[1]**	N/A		48-Hour Minimum			
Pass/Fail Lethality (48-Hr NOEC) TEM6C			Report (Pass=0/Fail=1)		once/quarter	composite
Survival (48-Hr NOEC) TOM6C			Report %		once/quarter	composite
Coefficient of Variation (48-Hr NOEC) TQM6C			Report %		once/quarter	composite
Pass/Fail Retest 1 (48-Hr NOEC) 22418			Report (Pass=0/Fail=1)		once/month[2]	composite
Pass/Fail Retest 2 (48-Hr NOEC) 22419			Report (Pass=0/Fail=1)		once/month[2]	composite
Pass/Fail Retest 3 (48-Hr NOEC) 51444			Report (Pass=0/Fail=1)		once/month[2]	composite
***Daphnia pulex* (Acute)[1]**			48-Hour Minimum			
Pass/Fail Lethality (48-Hr NOEC) TEM3D			Report (Pass=0/Fail=1)		once/quarter	composite
Survival (48-Hr NOEC) TOM3D			Report %		once/quarter	composite
Coefficient of Variation (48-Hr NOEC) TQM3D			Report %		once/quarter	composite
Pass/Fail Retest 1 (48-Hr NOEC) 22415			Report (Pass=0/Fail=1)		once/month[2]	composite
Pass/Fail Retest 2 (48-Hr NOEC) 22416			Report (Pass=0/Fail=1)		once/month[2]	composite
Pass/Fail Retest 3 (48-Hr NOEC) 51443			Report (Pass=0/Fail=1)		once/month[2]	composite

1. See Part II.11 (WET Testing Requirements).
2. 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 *D. pulex*.
3. In the event that the totalizing meter is malfunctioning, flow may be determined by manually measuring the head at the v-notch weir, provided the totalizing meter is repaired and returned to service as soon as possible.

Oil, grease, or petrochemical substances shall not be present in receiving waters to the extent that they produce globules or other residue or any visible, colored film on the surface or coat the banks and/or bottoms of the waterbody or adversely affect any of the associated biota. There shall be no visible sheen as defined in Part IV of this permit.

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 cooling water blowdown and low volume wastewater are combined in the mixing tank, and prior to the receiving stream.

PART I
PERMIT REQUIREMENTS

SECTION A2. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS: INTERNAL OUTFALL 01A – cooling tower blowdown

During the period beginning on the effective date and lasting until the date of expiration, the permittee is authorized to discharge from Outfall 01A. 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. This internal outfall combines in the mixing tank with the low volume wastewater prior to discharge into a pipeline leading to Outfall 001.

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	totalizing meter[3]
Free Available Chlorine (FAC)[1]	0.087	0.22	0.2	0.5	once/month[1]	grab
Chromium, Total Recoverable (Cr)[2]	0.35	0.35	0.2	0.2	n/a[2]	n/a[2]
Zinc, Total Recoverable (Zn)[2]	1.7	1.7	1.0	1.0	n/a[2]	n/a[2]
126 Priority Pollutants (Appendix A to Part 423) contained in chemicals added for cooling tower maintenance[2]	N/A	N/A	ND[4]	ND[4]	n/a[2]	n/a[2]
pH	N/A	N/A	Minimum 6.0 s.u.	Maximum 9.0 s.u.	once/month	grab

1. FAC samples shall be representative of periods of chlorination. See Part II.7.
2. Monitoring for all priority pollutants, including Chromium and Zinc, is waived at Internal Outfall 01A during this permit term based on 40 C.F.R. §122.44(a)(2) and a certification dated August 29, 2023 from the facility that no cooling tower maintenance chemicals containing any priority pollutant is used at the facility. See Part II.10 and II.11.
3. In the event that the totalizing meter is malfunctioning, flow may be estimated based on water balance under the current operating condition, provided the totalizing meter is repaired and returned to service as soon as possible.
4. Non-detectable amount.

Oil, grease, or petrochemical substances shall not be present in receiving waters to the extent that they produce globules or other residue or any visible, colored film on the surface or coat the banks and/or bottoms of the waterbody or adversely affect any of the associated biota. There shall be no visible sheen as defined in Part IV of this permit.

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 prior to combining with the low volume wastewater.

PART I
PERMIT REQUIREMENTS

SECTION A3. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS: OUTFALL 01B – low volume wastewater

During the period beginning on the effective date and lasting until the date of expiration, the permittee is authorized to discharge from Outfall 01B. 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. This internal outfall combines in the mixing tank with the cooling tower blowdown prior to discharge into a pipeline leading to Outfall 001.

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	totalizing meter[1]
Total Suspended Solids (TSS)	9.8	32.5	30.0	100	once/month	grab
Oil and Grease (O&G)	4.9	6.5	15	20	once/month	grab
pH	N/A	N/A	Minimum 6.0 s.u.	Maximum 9.0 s.u.	once/month	grab

1. In the event that the totalizing meter is malfunctioning, flow may be estimated based on water balance under the current operating condition, provided the totalizing meter is repaired and returned to service as soon as possible.

Oil, grease, or petrochemical substances shall not be present in receiving waters to the extent that they produce globules or other residue or any visible, colored film on the surface or coat the banks and/or bottoms of the waterbody or adversely affect any of the associated biota. There shall be no visible sheen as defined in Part IV of this permit.

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 prior to combining with the cooling water blowdown.

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 APC&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 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 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 at the time of permit issuance.

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 the 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. Best Management Practices (BMPs), as defined in Part IV.7, must be implemented for the facility to prevent or reduce the pollution of waters of the State from stormwater runoff, spills or leaks, and/or waste disposal. The permittee must amend the BMPs whenever there is a change in the facility or a change in the operation of the facility.

5. There shall be no discharge of chemical metal cleaning wastewater or transformer fluid containing polychlorinated biphenyls.

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

7. The term "free available chlorine" means the value obtained using any of the 'chlorine-free available' methods in Table IB of 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.

8. The term "low volume waste sources" 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.

9. The facility shall not use cooling tower maintenance chemicals containing any of the 126 priority pollutants listed in Appendix A of 40 C.F.R. Part 423 without first modifying this permit.

10. The monitoring requirement for all priority pollutants listed in Appendix A of 40 C.F.R. Part 423, including chromium and zinc, at Internal Outfall 01A is waived during this permit term based on 40 C.F.R. § 122.44(a)(2) and a certification dated August 29, 2023. This waiver is only valid for the term of this permit. The permittee must request this monitoring waiver when applying for a reissued permit. The monitoring waiver request must be accompanied by a signed certification that the facility does not use any cooling tower maintenance chemicals that contain any priority pollutant listed in Appendix A of 40 C.F.R. Part 423, including chromium and zinc. The signed certification shall include the statements in 40 C.F.R. § 122.22(d).

11. <u>WHOLE EFFLUENT TOXICITY TESTING (48-HOUR ACUTE NOEC)</u>

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(S)	001
Reported On DMR As Final Outfall	001
Critical Dilution (%)	13
Effluent Dilution Series (%)	5, 7, 10, 13, 17
Testing Frequency	Once/Quarter

Sample Type	"Composite Sample (defined in Paragraph B.iii)"
Test Species/Methods	40 C.F.R. §136

*Daphnia pulex*_acute static renewal 48-hour definitive toxicity test using EPA-821-R-02-012, or the latest update thereof.

Pimephales promelas (Fathead minnow) acute static renewal 48-hour definitive toxicity test using EPA-821-R-02-012, or the latest update thereof.

ii. The NOEC (No Observed Effect Concentration) is herein defined as the greatest effluent dilution at and below which lethality that is statistically different from the control (0% effluent) at the 95% confidence level does not occur. Acute 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.

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 CONDITIONS AND TEST ACCEPTABILITY CRITERIA

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	***Daphnia pulex***	***Pimephales promelas***
# of replicates per concentration	4 (minimum)	2 (minimum)
# of organisms per replicate	5 (minimum)	10 (minimum)
# of organisms per concentration	20 (minimum)	20 (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
Test Acceptability Criteria	≥90% survival of all control organisms.	≥90% survival of all control organisms.
Coefficient of Variation **	40% or less, unless significant effects are exhibited.	40% or less unless significant effects are exhibited.

* 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%.

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 two samples (flow-weighted composite if possible) from the outfall(s).

b. The permittee shall collect a second 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/or storage. A holding time up to 72 hrs 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 WET 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 DMR for that reporting period in accordance with Part I of this permit, as follows below. Submit retest information clearly marked as such with the following month's DMR. Use a no data indicator (NODI) code of 9 (not required), for months when WET retests are not required. Only results of valid tests are to be reported on the DMR.

Reporting Requirement	Parameter STORET CODE	
	Daphnia pulex	*Pimephales promelas*
Enter a "1" if the No Observed Effect Concentration (NOEC) for survival is less than the critical dilution, otherwise enter a "0."	TEM3D	TEM6C
Report the NOEC value for survival	TOM3D	TOM6C
Report the highest (critical dilution or control) Coefficient of Variation	TQM3D	TQM6C
(If required) Retest 1 – Enter a "1" if the NOEC for survival 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 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 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: TEM6C, TOM6C, TQM6C, 22418, 22419, 51444, TEM3D, TOM3D, TQM3D, 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 effects demonstrated at or below the critical dilution. If granted, the monitoring frequency for that test species may be reduced to not less than once per year for the less sensitive species (usually the Fathead minnow) and not less than once per six months for the more sensitive test species (usually the *Daphnia pulex*).

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 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 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 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 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 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. If any valid test demonstrates significant lethal effects to a test species at or below the critical dilution, the frequency of testing for this species is automatically increased to once per quarter with no option for frequency reduction.

i. Retest

The permittee shall conduct a total of three (3) additional tests for any species that demonstrates significant lethal 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 available upon request from 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. 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. 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)

A TRE is triggered following two test failures (a failure followed by one retest failure).

i. Within ninety (90) days of confirming 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; and

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

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

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).

PART III
STANDARD CONDITIONS

SECTION A – GENERAL CONDITIONS

1. **Duty to Comply**

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

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

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

3. **Permit Actions**

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

A. Violation of any terms or conditions of this permit.
B. Obtaining this permit by misrepresentation or failure to disclose fully all relevant facts.
C. A change in any conditions that requires either a temporary or permanent reduction or elimination of the authorized discharge.
D. A determination that the permitted activity endangers human health or the environment and can only be regulated to acceptable levels by permit modification or termination.
E. Failure of the permittee to comply with the provisions of APC&EC 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 APC&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 APC&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 APC&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 APC&EC Rule 6 and the provisions of APC&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 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 Fact Sheet, as derived from the permit application, will require at least 180 days prior notice to the Director to allow time for additional permitting. Please note that the 180 day notification requirement may be waived if additional permitting is not required for the change.

7. **Power Failure**

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

SECTION C – MONITORING AND RECORDS

1. **Representative Sampling**

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

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

2. **Flow Measurement**

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

Calculated Flow Measurement

For calculated flow measurements that are performed in accordance with either the permit requirements or a 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 by the Director 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 of the DEQ.

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

A. That any activity has occurred or will occur which would result in the discharge on a routine or frequent basis of any toxic pollutant 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 APC&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 APC&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 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"** also known as "average weekly," means the highest allowable average of "daily discharges" over a calendar week, calculated as the sum of all "daily discharges" measured during a calendar week divided by the number of "daily discharges" measured during that week. The 7-Day Average for Fecal Coliform Bacteria (FCB) or *E. coli* is the geometric mean of the "daily discharges" of all effluent samples collected during a calendar week in colonies per 100 ml.
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. **"APC&EC"** means the Arkansas Pollution Control and Ecology Commission.
5. **"Applicable effluent standards and limitations"** means all State and Federal effluent standards and limitations to which a discharge is subject under the Act, including, but not limited to, effluent limitations, standards of performance, toxic effluent standards and prohibitions, and pretreatment standards.
6. **"Applicable water quality standards"** means all water quality standards to which a discharge is subject under the federal Clean Water Act and which has been (a) approved or permitted to remain in effect by the Administrator following submission to the Administrator pursuant to Section 303(a) of the Act, or (b) promulgated by the Director pursuant to Section 303(b) or 303(c) of the Act, and standards promulgated under (APC&EC) Rule 2, as amended.
7. **"Best Management Practices (BMPs)"** are activities, practices, maintenance procedures, and other management practices designed to prevent or reduce the pollution of waters of the State. BMPs also include treatment technologies, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw sewage. BMPs may include structural devices or nonstructural practices.
8. **"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).
9. **"Composite sample"** is a mixture of grab samples collected at the same sampling point at different times, formed either by continuous sampling or by mixing a minimum of 4 effluent portions collected at equal time intervals (but not closer than one hour apart) during operational hours, within the 24-hour period, and combined proportional to flow or a sample collected at more frequent intervals proportional to flow over the 24-hour period.
10. **"CV"** means coefficient of variation.
11. **"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.

12. **"Daily Maximum"** discharge limitation means the highest allowable "daily discharge" during the calendar month.
13. **"Director"** means the Director of the Division of Environmental Quality.
14. **"Dissolved oxygen limit"** shall be defined as follows:
    A. When limited in the permit as a minimum monthly average, shall mean the lowest acceptable monthly average value, determined by averaging all samples taken during the calendar month.
    B. When limited in the permit as an instantaneous minimum value, shall mean that no value measured during the reporting period may fall below the stated value.
15. **"Division"** means the Division of Environmental Quality (**DEQ**).
16. **"*E. coli*"** a sample consists of one effluent grab portion collected during a 24-hour period at peak loads. For *E. coli*, report the Daily Maximum as the highest "daily discharge" during the calendar month and the Monthly Average as the geometric mean of all "daily discharges" within a calendar month, in colonies per 100 ml.
17. **"Fecal Coliform Bacteria (FCB)"** a sample consists of one effluent grab portion collected during a 24-hour period at peak loads. For FCB, report the Daily Maximum as the highest "daily discharge" during the calendar month and the Monthly Average as the geometric mean of all "daily discharges" within a calendar month, in colonies per 100 ml.
18. **"Grab sample"** means an individual sample collected in less than 15 minutes in conjunction with an instantaneous flow measurement.
19. **"Industrial User"** means a nondomestic discharger, as identified in 40 C.F.R. Part 403, introducing pollutants to a publicly owned treatment works (POTW).
20. **"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.
21. **"Instantaneous Maximum"** when limited in the permit as an instantaneous maximum value, shall mean that no value measured during the reporting period may fall above the stated value.
22. **"Instantaneous Minimum"** an instantaneous minimum value, shall mean that no value measured during the reporting period may fall below the stated value.
23. **"Monitoring and Reporting"**
    When a permit becomes effective, monitoring requirements are of the immediate period of the permit effective date. Where the monitoring requirement for an effluent characteristic is monthly or more frequently, the Discharge Monitoring Report (DMR) shall be submitted by the 25th of the month following the sampling. Where the monitoring requirement for an effluent characteristic is Quarterly, Semi-Annual, Annual, or Yearly, the DMR shall be submitted by the 25th of the month following the monitoring period end date.
    A. **MONTHLY:**
       is defined as a calendar month or any portion of a calendar month for monitoring requirement frequency of once/month or more frequently.
    B. **BI-MONTHLY:**
       is defined as two (2) calendar months or any portion of 2 calendar months for monitoring requirement frequency of once/2 months or more frequently.

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

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

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

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"** means the national program for issuing, modifying, revoking and reissuing, terminating, monitoring and enforcing permits, and imposing and enforcing pretreatment requirements under Sections 307, 402, 318, and 405 of the Clean Water Act.
26. "**NOEC**" means No Observed Effect Concentration.
27. **"PMSD"** means Percent Minimum Significant Difference.
28. **"POTW"** means Publicly Owned Treatment Works.
29. **"Reduction of $CBOD_5$/BOD_5 and TSS in mg/l Formula"**
    [(Influent – Effluent) / Influent] × 100
30. **"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.
31. **"Sewage sludge"** means the solids, residues, and precipitate separated from or created in sewage by the unit processes at a POTW. Sewage as used in this definition means any wastes, including wastes from humans, households, commercial establishments, industries, and stormwater runoff that are discharged to or otherwise enter a POTW.
32. **"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.

33. **Units of Measure:**
    "MGD" shall mean million gallons per day.
    "mg/l" shall mean milligrams per liter or parts per million (ppm).
    "µg/l" shall mean micrograms per liter or parts per billion (ppb).
    "cfs" shall mean cubic feet per second.
    "ppm" shall mean parts per million.
    "s.u." shall mean standard units.
34. **"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.
35. **"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.
36. **"Week"** means a calendar week, consisting of the 7-day period of Sunday through Saturday.
37. **"Weekday"** means Monday – Friday.

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 AR0049611 with Arkansas Department of Energy and Environment – Division of Environmental Quality (DEQ) Arkansas Facility Identification Number (AFIN) 30-00337 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 is:

Arkansas Electric Cooperative Corporation - Magnet Cove Generating Station
1 Cooperative Way
Little Rock, AR 72219

The facility address is:

Arkansas Electric Cooperative Corporation - Magnet Cove Generating Station
410 Henderson Road
Malvern, AR 72104

3. PREPARED BY

The permit was prepared by:

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4. PERMIT ACTIVITY

Previous Permit Effective Date: November 1, 2018
Previous Permit Expiration Date: October 31, 2023

The permittee submitted a permit renewal application on March 16, 2023, with all additional information received on March 22, 2023, and August 29, 2023. 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:

APC&EC - Arkansas Pollution Control and Ecology Commission
BAT - best available technology economically achievable
BCT - best conventional pollutant control technology
BMP - best management practice
BOD_5 - five-day biochemical oxygen demand
BPJ - best professional judgment
BPT - best practicable control technology currently available
$CBOD_5$ - carbonaceous biochemical oxygen demand
CD - critical dilution
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
FCB - fecal coliform bacteria
gpm - gallons per minute
MGD - million gallons per day
MQL - minimum quantification level
NAICS - North American Industry Classification System
NH_3-N - ammonia nitrogen
$NO_3 + NO_2$-N - nitrate + nitrite nitrogen
NPDES - National Pollutant Discharge Elimination System
O&G - oil and grease
Rule 2 - APC&EC Rule 2
Rule 6 - APC&EC Rule 6
Rule 8 - APC&EC Rule 8
Rule 9 - APC&EC Rule 9
RP - reasonable potential
SIC - standard industrial classification
TDS - total dissolved solids
TMDL - total maximum daily load
TP - total phosphorus
TRC - total residual chlorine

TSS - total suspended solids
UAA - use attainability analysis
USF&WS - United States Fish and Wildlife Service
USGS - United States Geological Survey
WET - whole effluent toxicity
WQMP - water quality management plan
WQS - Water Quality standards
WWTP - wastewater treatment plant

Compliance and Enforcement History:

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

https://echo.epa.gov

https://www.adeq.state.ar.us/home/pdssql/pds.aspx

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 permit cover page.
2. The Twenty-four Hour Report condition in Part III.D.6 has been revised.
3. The Changes in Discharge of Toxic Substances for Industrial Dischargers condition in Part III.D.8 has been revised.
4. Mass limits for FAC, Chromium, and Zinc were revised at Internal Outfall 01A based on updated highest monthly average flow reported during past five years, and "OWQ Guidelines for Decimal Places and Rounding Conventions in NPDES Permits," documented in an internal memorandum dated February 28, 2023.
5. Mass limits for TSS and Oil & Grease were revised at Internal Outfall 01B based on highest monthly average flow reported during past five years and "OWQ Guidelines for Decimal Places and Rounding Conventions in NPDES Permits," documented in an internal memorandum dated February 28, 2023.
6. Mass limits for TSS and Oil & Grease were revised at Outfall 001 based on "OWQ Guidelines for Decimal Places and Rounding Conventions in NPDES Permits," documented in an internal memorandum dated February 28, 2023.

6. RECEIVING STREAM SEGMENT AND DISCHARGE LOCATION

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

Outfall 001 (end of pipe):	Latitude: 34° 25' 41.4" N;	Longitude: 92° 51' 31.0" W
Outfall 001 (monitoring point):	Latitude: 34° 25' 48.7" N;	Longitude: 92° 49' 59.6" W

Internal Outfall 01A:	Latitude: 34° 25’ 48.8” N;	Longitude: 92° 49’ 59.3” W
Internal Outfall 01B:	Latitude: 34° 25’ 48.8” N;	Longitude: 92° 49’ 59.3” W

The receiving waters named:

Ouachita River in Segment 2F of the Ouachita River Basin. The receiving stream with Assessment Unit AR_08040102_007 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

This facility discharges to Reach 007 of the Ouachita River. This reach is not listed on the 2020 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. In the previous permit review, Arkansas Natural Heritage Commission (ANHC) identified the following species of conservation concern within five miles downstream of the outfall in a letter dated September 20, 2018:

Anguilla rostrate, American eel – state concern
Arcidens wheeleri, Ouachita Rock Pocketbook – federal concern (endangered)
Lampsilis abrupta, Pink Mucket – federal concern (endangered)
Percina uranidea, Stargazing darter – state concern
Toxolasma lividum, Purple Lilliput – state concern
Toxolasma parvum, Lilliput – state concern

The limits in the permit are designed to protect all beneficial uses of the receiving waters, including the propagation of desirable species of fish and other aquatic life, which includes the above species of concern. Therefore, DEQ has determined that the permit limits will serve to help protect the species of concern identified above.

D. Anti-Degradation

The limitations and requirements set forth in this permit for discharge into waters of the State are consistent with the Anti-degradation Policy and all other applicable water quality standards found in APC&EC Rule 2.

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

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

A. Facility Flows:

Internal Outfall 01A: 0.209 MGD (highest monthly average reported from October 2019 through September 2024.

Internal Outfall 01B: 0.039 MGD (highest monthly average reported from October 2019 through September 2024.

The above listed flow rates for Internal Outfalls 01A and 01B were used to calculate the technology-based mass limits, which were derived from the concentrations given in the effluent limitation guideline. Based on the Permit Writers Manual page 5-30 and 40 C.F.R. § 125.45(b)(2)(i), technology-based effluent mass limits are to be based on actual flow rates or production rates that can reasonably be expected to prevail during the next term of the permit (i.e. not the design flow or design production rate). Therefore, the highest monthly average flow reported during the past five years shown above at internal outfalls 01A and 01B was used to calculate the mass limits from the technology-based concentrations given in the effluent limitation guideline.

Outfall 001: 0.631 MGD, based on plant water balance at 100% load condition.

The above listed flow rate was used to calculate the mass limits at Outfall 001 as was done in the previous permit because the technology-based limits from the effluent limitation guideline are not being implemented at Outfall 001; rather they are being implemented at the internal outfalls as allowed by 40 C.F.R. § 122.45(h).

B. Type of Treatment: filtration system and oil/water separator for low volume wastewater, and no treatment for cooling water blowdown.

C. Discharge Description: cooling tower blowdown and low volume 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 greater 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 steam electric power generating station. This station is a natural gas fired combined cycle electric generating station with a total gross generating capacity of 750 megawatts. The facility uses a closed cycle recirculating water cooling system with a 12-cell mechanical draft cooling tower. The facility has a total of three (3) electric generating units including two (2) natural gas fired combustion turbine generators and one (1) steam turbine generator. Collectively, the natural gas fired combustion turbine generators and stream turbine generator form the combined cycle power plant.

10. SEWAGE SLUDGE AND SOLIDS PRACTICES

Domestic sewage sludge generated at this facility remains in a septic tank system permitted by the Arkansas Department of Health Permit No. 0029000110 and pumped from the septic tank as needed by a licensed septic tank hauler and properly disposed.

Process wastewater solids are thickened with a polymer in a mixing tank and dewatered with a filter press. The resulting solids cake is disposed of in the Waste Management - Jefferson County landfill under Solid Waste Permit No. 0308-S1-R1, or other permitted landfill.

11. INTERNAL OUTFALLS DISCUSSION

This facility has two internal wastestreams which combine in a mixing tank and subsequently discharge through the final outfall. These internal wastestreams are cooling tower blowdown (CTB) and low volume wastewater (LVW). The CTB wastestream is subject to effluent limitations guidelines (ELG) for Free Available Chlorine, Chromium, Zinc, and pH. The LVW wastestream is subject to ELG for Total Suspended Solids, Oil & Grease, and pH.

DEQ has determined that applying mass limits on only the final outfall would be infeasible or impractical to demonstrate compliance with the ELG in all flow situations. Based on the past five years, the flow of the CTB has averaged about 80% of the total flow. In situations when the CTB flow is lower than average (based on past flow data the CTB flow can be highly variable), the LVW could exceed the ELG concentrations and the facility still be in compliance with the mass limits if they were imposed at the final outfall. Therefore, demonstrating compliance with mass limits at the final outfall will not, in all situations, adequately ensure compliance with the ELG for TSS and O&G on the LVW wastestream. For these reasons, DEQ has elected to apply the ELG concentration limits at the internal outfalls, as done in the previous permit. 40 C.F.R. § 122.45(h)(1) states that effluent limitations may be imposed on internal wastestreams before mixing with other wastestreams or cooling water streams when permit effluent limits imposed at the point of final discharge would be infeasible or impractical.

12. 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								
TSS	N/A	N/A	30.0	100.0	30	100	30.0	100
O&G	10	15	N/A	N/A	10	15	10	15
pH	6.0 – 9.0 s.u.		N/A		6.0 – 9.0 s.u.		6.0 – 9.0 s.u.	
INTERNAL OUTFALL 01A (Cooling Tower Blowdown)								
FAC	N/A	N/A	0.2	0.5	0.2	0.5	0.2[1]	0.5[1]
Total Chromium[1]	N/A	N/A	0.2	0.2	0.2	0.2	0.2[1]	0.2[1]
Total Zinc[1]	N/A	N/A	1.0	1.0	1.0	1.0	1.0	1.0
pH	N/A		6.0 – 9.0 s.u.		6.0 – 9.0 s.u.		6.0 – 9.0 s.u.	
The 126 priority pollutants (Appendix A of 40 C.F.R. Part 423) contained in chemicals added for cooling tower maintenance, except Chromium and Zinc[1]	N/A		No detectable amount		N/A		No detectable amount[1]	
INTERNAL OUTFALL 01B (Low Volume Wastewater)								
TSS	N/A	N/A	30.0	100.0	30	100	30.0	100
O&G	N/A	N/A	15.0	20.0	15	20	15	20
pH	N/A		6.0 – 9.0 s.u.		6.0 – 9.0 s.u.		6.0 – 9.0 s.u.	

[1] Technology-based limits for Chromium, Zinc, and all other priority pollutants are included in the permit tables but monitoring requirements for these pollutants are waived during this permit term based on a certification submitted by the facility dated August 29, 2023, that no cooling tower maintenance chemicals containing these parameters are used at the facility.

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

Parameter	Water Quality or Technology	Justification
OUTFALL 001		
TSS	Technology	40 C.F.R. § 122.44(l), and previous permit
O&G	Water Quality	Rule 2.510, C.W.A. § 402(o), and previous permit
pH	Water Quality	Rule 2.504, C.W.A. § 402(o), and previous permit
Acute WET Testing	Water Quality	CPP, C.W.A. § 402(o), and previous permit
INTERNAL OUTFALL 01A (Cooling Tower Blowdown)		
FAC	Technology	40 C.F.R. § 423.15(a)(10)
Total Chromium	Technology	40 C.F.R. § 423.15(a)(10)
Total Zinc	Technology	40 C.F.R. § 423.15(a)(10)
pH	Technology	40 C.F.R. § 423.15(a)(1), 40 C.F.R. § 122.44(l), and previous permit
The 126 priority pollutants (Appendix A of 40 C.F.R. Part 423) contained in chemicals added for cooling tower maintenance, except Chromium and Zinc	Technology	40 C.F.R. § 423.15(a)(10)
INTERNAL OUTFALL 01B (Low Volume Wastewater)		
TSS	Technology	40 C.F.R. § 423.15(a)(3)
O&G	Technology	40 C.F.R. § 423.15(a)(3)
pH	Technology	40 C.F.R. § 423.15(a)(1)

No new information was received to warrant adding, removing, or revising any of the concentration limitations in the permit. However, the mass limits for Internal Outfalls 01A and 01B were revised from the previous permit based on actual flow rates reported during the most recent five years, and limits for TSS and Oil & Grease were slightly revised at Outfall 001 based on "OWQ Guidelines for Decimal Places and Rounding Conventions in NPDES Permits," documented in an internal memorandum dated February 28, 2023.

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.

Outfall 001 – Cooling Tower Blowdown and Low Volume Wastewater

Mass limits for O&G are based on the following calculations using the water quality-based concentrations in Rule 2.510:

O&G: (10 mg/l)(8.34 lb/gal)(0.631 MGD) = 52.6 lb/day (monthly average)
O&G: (15 mg/l)(8.34 lb/gal)(0.631 MGD) = 78.9 lb/day (daily maximum)

Mass limits for TSS are based on the following calculations using the allowable concentrations from previous permit and the judgement of the permit writer:

TSS: (30 mg/l)(8.34 lb/gal)(0.631 MGD) = 157.9 lb/day (monthly average)
TSS: (100 mg/l)(8.34 lb/gal)(0.631 MGD) = 526.3 lb/day (daily maximum)

Internal Outfall 01A – Cooling Tower Blowdown

Mass limits for Chromium and Zinc are based on the following calculations using the technology-based concentrations in 40 C.F.R. § 423.15(a)(10):

Chromium: (0.2 mg/l)(8.34 lb/gal)(0.209 MGD) = 0.35 lb/day (monthly average)
Chromium: (0.2 mg/l)(8.34 lb/gal)(0.209 MGD) = 0.35 lb/day (daily maximum)

Zinc: (1.0 mg/l)(8.34 lb/gal)(0.209 MGD) = 1.7 lb/day (monthly average)
Zinc: (1.0 mg/l)(8.34 lb/gal)(0.209 MGD) = 1.7 lb/day (daily maximum)

Mass limits for FAC are based on the following calculations using the technology-based concentrations in 40 C.F.R. § 423.15(a)(10) and the limitation of the discharge of FAC to 2 hours per day per generating unit:

FAC: (0.2 mg/l)(8.34 lb/gal)(0.209 MGD)(2 hr/day/unit)(1 day/24 hr)(3 units)
FAC: 0.087 lb/day (monthly average)

FAC: (0.5 mg/l)(8.34 lb/gal)(0.209 MGD)(2 hr/day/unit)(1 day/24 hr)(3 units)
FAC: 0.22 lb/day (daily maximum)

Internal Outfall 01B – Low Volume Wastewater

Mass limits for TSS and O&G are based on the following calculations using the technology-based concentrations in 40 C.F.R. § 423.15(a)(3):

TSS: (30 mg/l)(8.34 lb/gal)(0.039 MGD) = 9.8 lb/day (monthly average)
TSS: (100 mg/l)(8.34 lb/gal)(0.039 MGD) = 32.5 lb/day (daily maximum)

O&G: (15 mg/l)(8.34 lb/gal)(0.039 MGD) = 4.9 lb/day (monthly average)
O&G: (20 mg/l)(8.34 lb/gal)(0.039 MGD) = 6.5 lb/day (daily maximum)

2. Daily Maximum Limits:

Outfall 001 - Cooling Tower Blowdown and Low Volume Wastewater

TSS daily maximum mass limit is based on the flow in the plant water balance at 100% load conditions, in conjunction with the concentration given in the previous permit. Calculation of the mass limits is shown above in section C.1.

O&G daily maximum mass limit is based on the flow in the plant water balance at 100% load conditions, in conjunction with the concentration given in Rule 2.510. Calculation of the mass limits is shown above in section C.1.

Internal Outfall 01A – Cooling Tower Blowdown

FAC daily maximum mass limit is based on the highest monthly average flow over the past five years (October 2019 – September 2024), in conjunction with the concentration given in 40 C.F.R. § 423.15(a)(10). Calculation of the daily maximum mass limit is shown above in section C.1 and is based on an allowable discharge of FAC of 2 hours per day per generating unit. There are three generating units at the facility.

Chromium and Zinc daily maximum mass limits are based on the highest monthly average flow over the past five years (October 2019 – September 2024), in conjunction with the concentration given in 40 C.F.R. § 423.15(a)(10). Calculation of the daily maximum mass limit is shown above in section C.1.

Internal Outfall 01B – Low Volume Wastewater

TSS and O&G daily maximum mass limits are based on the highest monthly average flow over the past five years (October 2019 – September 2024) in conjunction with the concentrations given in 40 C.F.R. § 423.15(a)(3). Calculation of the daily maximum mass limits are shown above in section C.1.

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

The 208 Plan, developed by the 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 limitations 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. Since this facility was constructed after November 19, 1982, the New Source Performance Standards within this effluent limitation guideline are applicable to this facility. These technology-based limits are summarized in the tables below:

40 C.F.R. § 423.15(a)(10) Technology-based Effluent Limits for Cooling Tower Blowdown		
Parameter	Monthly Average	Daily Maximum
Free Available Chlorine	0.2 mg/l	0.5 mg/l
The 126 priority pollutants contained in chemicals added for cooling tower maintenance, except for Chromium and Zinc[2]	No detectable amount[2]	No detectable amount[2]
Chromium, Total Recoverable[2]	0.2 mg/l[2]	0.2 mg/l[2]
Zinc, Total Recoverable[2]	1.0 mg/l[2]	1.0 mg/l[2]
pH	6.0 – 9.0 s.u.	

40 C.F.R. § 423.15(a)(1) and (a)(3) Technology-based Effluent Limits for Low Volume Wastewater		
Parameter	Monthly Average	Daily Maximum
Total Suspended Solids	30.0 mg/l	100.0 mg/l
Oil & Grease	15.0 mg/l	20.0 mg/l
pH	6.0 – 9.0 s.u.	

[2] Technology-based limits for Chromium, Zinc, and all other priority pollutants are included in the permit tables but monitoring requirements for these pollutants are waived during this permit term based on a certification submitted by the facility dated August 29, 2023 that no cooling tower maintenance chemicals containing these parameters are used at the facility.

F. **Temperature Calculations**

Rule 2.502 states that "Heat shall not be added to any waterbody in excess of the amount that will elevate the natural temperature, outside of the mixing zone, by more than 5 degrees Fahrenheit based upon the monthly average of the maximum daily temperature measured at mid-depth or three feet (whichever is less) in streams, lakes, or reservoirs. Rule 2.502 also states that "The maximum allowable temperatures from man-induced causes in the Ouachita River is 89.6 degrees Fahrenheit." Therefore, it is imperative that these two conditions be met to ensure an appropriate temperature limitation on the discharge at Outfall 001, if necessary to protect these standards.

First, the prohibition of raising the temperature outside the mixing zone by more than 5 degrees Fahrenheit was analyzed. The following equation was used to calculate the maximum temperature that the facility could discharge that would cause a 5 degree Fahrenheit rise in the receiving stream:

$(Te \times Qe) + (Tu \times Qu) = (Td \times Qd)$

Where,
Te = Maximum allowable effluent temperature
Qe = Effluent flow = 0.631 MGD = 0.978 cfs
Tu = Upstream Temperature = 55.2º F (LOUA016R lowest value from 2012-2013)
Qu = Upstream Flow = 271 cfs (7Q10 from 2008 USGS report for station 07359002)
Td = Downstream temperature after mixing = 60.2º F (increase of 5º F over upstream)
Qd = Downstream flow = Qe + Qu = 0.978 cfs + 271 cfs = 271.978 cfs

Equation is re-arranged to solve for Te,

$Te = [(Td \times Qd) – (Tu \times Qu)] / Qe$
$Te = [(60.2 \times 271.978) – (55.2 \times 271)] / 0.978$
Te = 1,445º F

This shows that the effluent temperature would have to be 1,445º F to cause a 5º F temperature rise in the Ouachita River at critical low flow conditions. Therefore, it is not necessary to impose a temperature limitation in the permit to comply with the temperature rise standard.

Next, the maximum allowable effluent temperature that would not cause a violation of the temperature standard of the Ouachita River was calculated using the following equation:

$(Te \times Qe) + (Tu \times Qu) = (Td \times Qd)$

Where,
Te = Maximum allowable effluent temperature
Qe = Effluent flow = 0.631 MGD = 0.978 cfs
Tu = Upstream Temperature = 79.2º F (LOUA016R average summer value 2012-2013)
Qu = Upstream Flow = 271 cfs (7Q10 from 2008 USGS report for station 07359002)
Td = Downstream temperature after mixing = 89.6º F (water quality standard)
Qd = Downstream flow = Qe + Qu = 0.978 cfs + 271 cfs = 271.978 cfs

Equation is re-arranged to solve for Te,

$Te = [(Td \times Qd) – (Tu \times Qu)] / Qe$
$Te = [(89.6 \times 271.978) – (79.2 \times 271)] / 0.978$
Te = 2,971º F

This calculation shows that the effluent temperature would have to be 2,971º F to cause the temperature in the Ouachita River to exceed the standard. Therefore, it is not necessary to impose a temperature limitation in the permit to comply with the temperature standard.

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 "Quality Criteria for Water, 1986 (Gold Book)."

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	0.631 MGD = 0.978 cfs	Plant Water Balance diagram at 100% load (Figure 3 of application)
7Q10 Background Flow	271 cfs	U.S.G.S. Station 07359002
LTA Background Flow	813 cfs	TSD for WQ-based Toxics Control, p. 88
TSS	2 mg/l	CPP Table 5-4 for Ouachita River above Caddo River
Hardness as $CaCO_3$	28 mg/l	CPP Table 5-3 for Ouachita River
Background (Arsenic)	0 µg/l*	DEQ station OUA0165
Background (Copper)	0.68 µg/l**	DEQ station OUA0165
Background (Nickel)	0 µg/l*	DEQ station OUA0165

*These parameters were non-detect in six available samples at the monitoring station. Therefore, they were assumed zero in the evaluation in accordance with the CPP.

**Geometric mean of six available samples at this station.

The following pollutants were reported above detection levels:

Pollutant	Concentration Reported[1], µg/l	MQL, µg/l
Arsenic, Total Recoverable	15.9	0.5
Copper, Total Recoverable	10.9	0.5
Nickel, Total Recoverable	1.96	0.5

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

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

PPS Evaluation

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	
Arsenic, Total Rec.	15.9	33.87	1.92	340[3]	No
Copper, Total Rec.	10.9	23.22	1.96	15.71	No
Nickel, Total Rec.	1.96	4.17	0.24	800.43	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.
[3] EPA National Recommended Water Quality Criteria.

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	
Arsenic, Total Rec.	15.9	33.87	0.48	150[3]	No
Copper, Total Rec.	10.9	23.22	1.00	8.59	No
Nickel, Total Rec.	1.96	4.17	0.06	88.89	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.
[3] EPA National Recommended Water Quality Criteria.

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)
Arsenic, Total Rec.	15.9	33.87	0.04	1.4	No
Copper, Total Rec.	10.9	23.22	0.71	13,000	No
Nickel, Total Rec.	1.96	4.17	0.01	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.

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. 316(B) REQUIREMENTS FOR COOLING WATER INTAKE STRUCTURE

This facility does not operate a cooling water intake structure. This facility obtains all cooling water from the James Kimzey Water District, which is a public water system. Pursuant to 40 C.F.R. § 125.91(c), obtaining cooling water from a public water system does not constitute use of a cooling water intake structure for purposes of Subpart J – Requirements Applicable to Cooling Water Intake Structures for Existing Facilities Under Section 316(b) of the Clean Water Act. Therefore, 316(b) requirements are not applicable to this facility.

I. FLUE GAS DESULFURIZATION (FGD) WASTESTREAM CONSIDERATIONS

This facility does not operate an FGD scrubber system, therefore there is no FGD wastestream.

J. COAL COMBUSTION RESIDUALS (CCR) WASTESTREAM CONSIDERATIONS

This facility is a natural gas fired generating station and does not combust coal, therefore no CCR wastestreams are generated.

13. 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.

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
48 hour Acute WET	Once/quarter

Requirements for measurement frequency are based on the CPP.

Since 7Q10 is greater than 100 cfs (ft^3/sec) and dilution ratio (DR) is greater than 100:1, acute WET testing requirements will be included in the permit.

The calculations for dilution used for the acute WET testing are as follows:

Critical Dilution (CD) = (Qd / (Qd + Qb)) × 100

Qd = Average Flow = 0.631 MGD = 0.978 cfs
7Q10 = 271 cfs
Qb = Background flow= 0.1 × 0.25 × 7Q10 = 6.78 cfs
CD = ((0.978) / (0.978 + 6.78)) × 100 = 13%

DR = (7Q10 + Qd) / Qd = 278 >100

Toxicity tests shall be performed in accordance with protocols described in "Methods for Measuring the Acute Toxicity of Effluent to Freshwater and Marine Organisms," EPA/600/4-90/027. 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 5%**,** 7%, 10%, 13%, and 17% (See the CPP). The low-flow effluent concentration (critical dilution) is defined as 13% effluent. The requirement for acute WET tests is based on the magnitude of the facility's discharge with respect to receiving stream flow. The stipulated test species *Daphnia pulex* 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-02-012, 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 APC&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

The following information summarizes toxicity tests submitted by the permittee during the term of the current permit at outfall 001**:**

Permit Number:	AR0049611	AFIN:	30-00337	Outfall Number:	001
Date of Review:	8/25/2023	Reviewer:	N. McKenna/M. Barnett		
Facility Name:	Arkansas Electric Cooperative Corporation - Magnet Cove Generating Station				
Previous Dilution series:	5,7,10,13,17	Proposed Dilution Series:	5,7,10,13,17		
Previous Critical Dilution:	13	Proposed Critical Dilution:	13		
Previous TRE activities:	None				
Frequency recommendation by species					
Pimephales promelas (Fathead minnow):	once per quarter				
Daphnia pulex (water flea):	once per quarter				

TEST DATA SUMMARY

	Vertebrate		Invertebrate	
TEST DATE	Lethal		Lethal	
	NOEC		NOEC	
6/30/2018	17		17	
9/30/2018	17		17	
12/31/2018	17		17	
3/31/2019	17		17	
6/30/2019	17		17	
9/30/2019	17		17	
12/31/2019	17		17	
6/30/2020	17		17	
12/31/2020			17	
6/30/2021	17		17	
12/31/2021			17	
6/30/2022			17	
12/31/2022	17		17	
6/30/2023	17		17	

Failures are noted in BOLD

REASONABLE POTENTIAL CALCULATIONS

	Vertebrate Lethal		**Invertebrate Lethal**	
Min NOEC Observed	17		17	
TU at Min Observed	5.88		5.88	
Count	11		14	
Failure Count	0		0	
Mean	5.882		5.882	
Std. Dev.	0.000		0.000	
CV	0		0	
RPMF	0		0	
Reasonable Potential	0.000		0.000	
100/Critical dilution	7.692		7.692	
Does Reasonable Potential Exist	No		No	

PERMIT ACTION

P. promelas lethal - monitoring
D. pulex lethal - monitoring

14. 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 Industrial General Permit Tracking number ARR000955 issued on April 30, 2019.

15. 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)].

Requirements for sample type and sampling frequency have been based on the previous discharge permit. An OWQ guidance memorandum "Recommended Monitoring Frequencies and Sample Types for NPDES Permit," July 31, 2023, was reviewed and the recommended frequency for flow rates and sample types for flow range of >0.5 to 1.0 MGD are three/month and composite. However, a review of the reported DMR data revealed that reductions in the frequency to once/month (same as previous permit) could be granted using an OWQ guidance memorandum "Recommended Monitoring Frequencies and Sample Types for NPDES Permits," April 14, 2022. Grab samples are determined to be sufficient at the Outfall 001 for TSS, O&G, and pH due to mixing of the two internal outfalls in the mixing tank prior to final discharge via Outfall 001. Composite samples for WET are continued at Outfall 001 from previous permit based on sampling requirements for WET specified in the CPP. Grab samples for FAC and pH are determined to be sufficient at Internal Outfall 01A because the volume of the cooling tower basin provides adequate mixing from the cooling towers prior to discharge to the mixing tank. Grab samples for TSS, O&G, and pH are determined to be sufficient at Internal Outfall 01B because adequate mixing occurs in the oil/water separator prior to discharge to the mixing tank. A review of the DMRs during previous permit cycle indicate consistent concentration values from all outfalls using grab samples and composite samples are not expected to yield significantly different results. Therefore, the frequencies and sample types for all parameters are continued from the previous permit as shown in table below.

Parameter	Previous Permit		Final Permit	
	Frequency of Sample	Sample Type	Frequency of Sample	Sample Type
Outfall 001				
Flow	once/day	totalizing meter	once/day	totalizing meter
TSS	once/month	grab	once/month	grab
O&G	once/month	grab	once/month	grab
pH	once/month	grab	once/month	grab
Acute WET testing	once/quarter	composite	once/quarter	composite

Parameter	Previous Permit		Final Permit	
	Frequency of Sample	Sample Type	Frequency of Sample	Sample Type
Internal Outfall 01A				
Flow	once/day	totalizing meter	once/day	totalizing meter
FAC	once/month	grab	once/month	grab
pH	once/month	grab	once/month	grab
Internal Outfall 01B				
Flow	once/day	totalizing meter	once/day	totalizing meter
TSS	once/month	grab	once/month	grab
O&G	once/month	grab	once/month	grab
pH	once/month	grab	once/month	grab

16. **PERMIT COMPLIANCE SCHEDULE**

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

17. **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.

18. **SOURCES**

The following sources were used to write the permit:

A. Application No. AR0049611 received March 16, 2023, with all additional information received by March 22, 2023.
B. APC&EC Rule 2.
C. APC&EC Rule 3.
D. APC&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 AR0049611.
H. Discharge Monitoring Reports (DMRs).
I. “2020 Integrated Water Quality Monitoring and Assessment Report,” DEQ.
J. “2020 List of Impaired Waterbodies (303(d) List),” DEQ.
K. “Low-Flow Characteristics and Regionalization of Low-Flow Characteristics for Selected Streams in Arkansas,” U.S. Dept. of the Interior, U.S. Geological Survey, Scientific Investigations Report 2008-5065.
L. U.S. EPA NPDES Permit Writers’ Manual, September 2010.
M. Continuing Planning Process (CPP).
N. “OWQ Guidelines for Decimal Places and Rounding Conventions in NPDES Permits”

documented in a February 28, 2023 Interoffice Memorandum.

O. OWQ guidance memorandum "Recommended Monitoring Frequencies and Sample Types for NPDES Permits," July 31, 2023.
P. OWQ guidance memorandum "Monitoring Frequency Reduction Guidelines for NPDES Permits," April 13, 2022.
Q. Technical Support Document for Water Quality-based Toxic Control.
R. Certification dated August 29, 2023 that no cooling tower maintenance chemicals used at the facility contain any of the 126 priority pollutants listed in 40 C.F.R. Part 423, Appendix A.
S. Inspection Report dated March 17, 2022.
T. Enforcement Review Memo dated August 25, 2023.
U. Planning Review Memo dated August 25, 2023.
V. NPDES Permit Rating Spreadsheet (MRAT) dated August 29, 2023.
W. Letter dated September 20, 2018 from Arkansas Natural Heritage Commission to DEQ identifying species of conservation concern.
X. Priority Pollutant Scan evaluation dated August 29, 2023.
Y. Letter dated June 3, 2024 from AECC to DEQ containing comments on draft permit.

19. PUBLIC NOTICE

The public notice of the draft permit was published for public comment on May 5, 2024. The last day of the comment period was June 4, 2024.A summary of the comments received by the DEQ during the public comment period and response to the comments are included with this permit decision. The response to comments also includes a discussion of any substantial changes from the draft permit.

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

20. 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.

21. POINT OF CONTACT

For additional information, contact:

Shane Byrum
Permits Branch, Office of Water Quality
Division of Environmental Quality
5301 Northshore Drive
North Little Rock, Arkansas 72118-5317
Telephone: (501) 682-0618

RESPONSE TO COMMENTS
FINAL PERMITTING DECISION

Permit No.: AR0049611

Applicant: Arkansas Electric Cooperative Corporation
Magnet Cove Generating Station

Prepared by: Shane Byrum

The following are responses to comments received by the Division of Environmental Quality (DEQ) regarding the draft permit number referenced above and are developed in accordance with regulations promulgated at 40 C.F.R. §124.17, Arkansas Pollution Control & Ecology Commission (APC&EC) Rule 8 (Administrative Procedures), and Arkansas Code Annotated (A.C.A.) §8-4-203(e)(2).

Introduction

The above permit was submitted for public comment on May 5, 2024. The public comment period ended on June 4, 2024. This document contains a summary of the comments that the DEQ received during the public comment period. A summary of the changes to the NPDES Permit can be found on the last page of this document.

The following people or organizations sent comments to the DEQ during the public notice. A total of two comments were raised by one commenter.

Commenter	Number of Comments Raised
1. Arkansas Electric Cooperative Corporation (AECC)	2

Comment 1 In the draft permit, DEQ used a flow rate of 0.031 MGD at Internal Outfall 01B to calculate the mass loading limits for TSS and O&G. AECC requested that DEQ use a five-year period from May 2019 to April 2024 to provide a more reasonable measure of actual average monthly flow, resulting from the recent increased production at the Magnet Cove Generating Station.

Response: DEQ reviewed the reported monthly average flows from May 2019 to April 2024 and confirmed that the highest monthly average flow during that period was 0.039 MGD at Internal Outfall 01B. Therefore, the calculated mass limits for Total Suspended Solids (TSS) and Oil & Grease (O&G) were updated based on this flow rate.

Comment 2 To account for the recent increase in operations at Magnet Cove Generating Station, and to maintain compliance with the facility's air permit's particulate matter limit on the emissions from the cooling tower, AECC requests that DEQ use the monthly average flow of 0.28 MGD from the previous permit which occurred in August 2015, instead of 0.181 MGD which occurred in July 2022, to calculate mass loading limits at Internal Outfall 01A.

Response: DEQ reviewed this request and agrees that the highest monthly average flow reported from May 2015 to April 2024 was 0.28 MGD. The Annual Capacity Factors at this facility supplied by the permittee for the past 6 calendar years shows significant increases in 2022 and 2023. This trend shows to be continuing into 2024 based on the capacity factor from January 2024 through April 2024 being 86.9%.

However, the increased capacity factors trending recently at this facility have not produced actual monthly average reported flows from Internal Outfall 01A as high as the 0.28 MGD that was reported in August 2015. The EPA September 2010 Permit Writers' Manual discusses the procedure for calculating mass-based technology based limits from flow normalized effluent guidelines, such as the effluent limit guidelines applicable here. The permit writers' manual explains that the objective in determining a flow estimate for a facility is to develop a single estimate of the actual daily flow rate that is reasonably expected to prevail during the next permit term. Based on the recent actual daily flow data reported from Outfall 01A during the months when the annual capacity factor was around 87%, DEQ has concluded that the highest monthly average flow of 0.209 MGD reported in September 2024 during the past 5 years (October 2019 through September 2024) at Outfall 01A is representative of a flow value reasonably expected to prevail during next permit term because this monthly average flow rate has not been exceeded in the past 9 years 2 months (110 months).

Therefore, the mass limits for Zinc, Chromium, and FAC at Internal Outfall 01A were revised from the draft permit based on the higher flow reported in September 2024. DEQ has formatted the calculated mass limits at Internal Outfall 01A for Free Available Chlorine, Chromium, and Zinc to recommended decimal places based on an internal memorandum dated February 28, 2023.

DEQ Comment:

After the draft permit was public noticed, EPA approved DEQ's 2020 303(d) list. Therefore, the reference to the 2018 303(d) list in section 7.A of the fact sheet was revised to the 2020 303(d) list. No changes are occurring to the permit as a result of this update since the receiving stream reach is not listed on either the 2018 or 2020 303(d) list.

Summary of Changes to the permit				
Part	Draft Permit	Final Permit	Justification	Comment #
IA, Section A3, Outfall 01B	TSS limits: 7.8 lb/day (monthly avg) 25.9 lb/day (daily max) O&G limits: 3.9 lb/day (monthly avg) 5.2 lb/day (daily max)	TSS limits: 9.8 lb/day (monthly avg) 32.5 lb/day (daily max) O&G limits: 4.9 lb/day (monthly avg) 6.5 lb/day (daily max)	Increase in highest monthly average actual flows in most recent five year period.	1
IA, Section A2, Outfall 01A	FAC limits: 0.075 lb/day (monthly avg) 0.19 lb/day (daily max) Chromium limits: 0.30 lb/day (monthly avg) 0.30 lb/day (daily max) Zinc limits: 1.5 lb/day (monthly avg) 1.5 lb/day (daily max)	FAC limits: 0.087 lb/day (monthly avg) 0.22 lb/day (daily max) Chromium limits: 0.35 lb/day (monthly avg) 0.35 lb/day (daily max) Zinc limits: 1.7 lb/day (monthly avg) 1.7 lb/day (daily max)	Calculated mass limits based on an increase in highest monthly average actual flow in most recent five year period, and formatted to decimal place rule established in an internal memorandum dated February 28, 2023.	2