STATE OF MISSOURI

DEPARTMENT OF NATURAL RESOURCES

MISSOURI CLEAN WATER COMMISSION

Ex I

FILED
July 9, 2013
Data Center
Missouri Public
Service Commission

Filed
April 8, 2014
Data Center
Missouri Public
Service Commission

MISSOURI STATE OPERATING PERMIT

In compliance with the Missouri Clean Water Law, (Chapter 644 R.S. Mo. as amended, hereinafter, the Law), and the Federal Water Pollution Control Act (Public Law 92-500, 92nd Congress) as amended,

Permit No. MO-0004812

Owner: Union Electric Company (UE)

Owner's Address: P.O. Box 149, St. Louis, Missouri 63166

Operating Authority: N/A

Operating Authority's Address: N/A

Facility Name: UE, Labadie Power Plant

Facility Address: Labadie, Missouri 63055

Legal Description: Parts of Sections 7, 18 and 19, T44N, R2E, Franklin County

Receiving Stream & Basin: Missouri River (Missouri River and Eastern Tributaries Basin) (10300200-14-00) (P)

is authorized to discharge from the facility described herein, in accordance with the effluent limitations and monitoring requirements as set forth herein:

FACILITY DESCRIPTION

Outfall #001 - Power Plant - SIC #4911

Non-contact cooling water.
Actual flow is 1,029 MGD.
Design flow is 1,428 MGD.

(continued on next page)

This permit authorizes only wastewater discharges under the Missouri Clean Water Law and the National Pollutant Discharge Elimination System; it does not apply to other regulated areas. This permit may be appealed in accordance with Section 644.051.6 of the Law.

March 18, 1994
Effective Date

March 17, 1999
Expiration Date

MO 780-0041 (10-93)

John A. Young
John A. Young
Director, Division of Environmental Quality

ORIGINAL SIGNED BY DIRECTOR OF STAFF, CLEAN WATER COMMISSION
Director of Staff, Clean Water Commission

Recycled Paper

Intervenor Exhibit No. 322
Date 3-31-2014 Reporter Stewart
File No. EA-2012-0281

FACILITY DESCRIPTION

Outfall #002 - Power Plant - SIC #4911

Ash pond/pH neutralization.
Actual flow is 25.4 MGD.
Design flow is 57.8 MGD.

Outfall #002A - Power Plant - SIC #4911

Lift station/extended aeration/aerated sludge holding tank/sludge disposal is by contract hauler.
Design flow is 35,000 gallons per day.
Design population equivalent is 270.
Design sludge production is 5.67 dry tons/year.

Outfalls #003 - Power Plant - SIC #4911

Storm water runoff from parking areas and drives.
Representative of four similar discharge pipes, a-d.

a. 10-inch corrugated metal pipe (cmp)
b. 24-inch cmp
c. 24-inch cmp
d. 24-inch cmp

Flow is dependent upon precipitation.

Outfall #004 - Power Plant - SIC #4911

Storm water runoff from an outdoor materials storage area.
24-inch cmp
Flow is dependent upon precipitation.

Outfall #005 - Power Plant - SIC #4911

Storm water runoff from various plant yards, plant building roof drains and the access road.
24-inch cmp
Flow is dependent upon precipitation.

Outfall #006 - Power Plant - SIC #4911

Storm water runoff from the access road.
18-inch cmp*
Flow is dependent upon precipitation.

* Monitoring of Outfall #007 is representative of this discharge.

Outfall #007 - Power Plant - SIC #4911

Storm water runoff from the access road. Representative of six similar discharge pipes, a-f.
Each pipe is an 18-inch cmp.
Flow is dependent upon precipitation.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective upon issuance and remain in effect until expiration of the permit. Such discharges shall be controlled, limited, and monitored by the permittee as specified below:

OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
Outfall #001 - (Non-Contact Cooling Water)						
Flow	MGD	*		*	once/weekday**	24 hr. total
Intake Temperature	°F	*		*	once/weekday**	grab
Effluent Temperature	°F	*		*	once/weekday**	grab
Thermal Discharge (Internal Energy Increase)	btu/hour	11.16×10^9 (Note 1)			once/weekday**	n/a
MONITORING REPORTS SHALL BE SUBMITTED MONTHLY, THE FIRST REPORT IS DUE October 28, 1994						
Outfall #001 - (Non-Contact Cooling Water)						
Whole Effluent Toxicity (WET) Test	% Survival	(See Special Condition #1)			once/year	grab
MONITORING REPORTS SHALL BE SUBMITTED ANNUALLY, THE FIRST REPORT IS DUE October 28, 1994						

MONITORING REPORTS SHALL BE SUBMITTED as outlined above ; THE FIRST REPORT IS DUE as outlined above
THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.

B. STANDARD CONDITIONS

IN ADDITION TO SPECIFIED CONDITIONS STATED HEREIN, THIS PERMIT IS SUBJECT TO THE ATTACHED Parts I & III STANDARD CONDITIONS DATED October 1, 1980 & August 15, 19 94 , AND HEREBY INCORPORATED AS THOUGH FULLY SET FORTH HEREIN.

MO 780-0010 (8-91)

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective upon issuance and remain in effect until expiration of the permit. Such discharges shall be controlled, limited, and monitored by the permittee as specified below:

OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
Outfall #002 - (Ash Pond)						
Flow	MGD	*		*	once/week	24 hr. total
Intake Total Suspended Solids	mg/l	*		*	once/week	grab
Effluent Total Suspended Solids***	mg/l	100		30	once/week	grab
Oil and Grease	mg/l	20		15	once/month	grab
pH - Units	SU	****		****	once/week	grab
MONITORING REPORTS SHALL BE SUBMITTED MONTHLY, THE FIRST REPORT IS DUE May 28, 1994						
Outfall #002 - (Ash Pond) (Note 2)						
Sulfate (as SO_4)	mg/l	*		*	once/quarter *****	grab
MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY, THE FIRST REPORT IS DUE July 28, 1994						
Outfall #002 - (Ash Pond)						
Whole Effluent Toxicity (WET) Test	% Survival	(See Special Condition #1)			once/year	grab
MONITORING REPORTS SHALL BE SUBMITTED ANNUALLY, THE FIRST REPORT IS DUE October 28, 1994						

MONITORING REPORTS SHALL BE SUBMITTED as outlined above ; THE FIRST REPORT IS DUE as outlined above
THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.

B. STANDARD CONDITIONS

IN ADDITION TO SPECIFIED CONDITIONS STATED HEREIN, THIS PERMIT IS SUBJECT TO THE ATTACHED Part I & III STANDARD CONDITIONS DATED October 1, 1980 & June 22, 19 93 , AND HEREBY INCORPORATED AS THOUGH FULLY SET FORTH HEREIN.

MO 780-0010 (8-91)

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective upon issuance and remain in effect until expiration of the permit. Such discharges shall be controlled, limited, and monitored by the permittee as specified below:

OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
Outfall #002A - (Sewage Treatment Plant) (Note 2)						
Flow	MGD	*		*	once/month	24 hr. estimate
Biochemical Oxygen Demand$_5$	mg/l		45	30	once/quarter *****	grab
Total Suspended Solids	mg/l		45	30	once/quarter *****	grab
pH - Units	SU	****		****	once/quarter *****	grab
Outfalls #003, #004, #005, #006 and #007 - (Storm Water) (Note 2)						
Flow	MGD	*		*	once/quarter *****	24 hr. estimate
Settleable Solids	ml/L/hr	2.0		1.0	once/quarter *****	grab
Oil and Grease	mg/l	15		10	once/quarter *****	grab
pH - Units	SU	****		****	once/quarter *****	grab

MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY ; THE FIRST REPORT IS DUE July 28, 1994
THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.

B. STANDARD CONDITIONS

IN ADDITION TO SPECIFIED CONDITIONS STATED HEREIN, THIS PERMIT IS SUBJECT TO THE ATTACHED Part I & III STANDARD CONDITIONS DATED October 1, 1980 & June 22, 19 93 , AND HEREBY INCORPORATED AS THOUGH FULLY SET FORTH HEREIN.

MO 780-0010 (8-91)

OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE

* Monitoring requirement only.

** Once each weekday means: Monday, Tuesday, Wednesday, Thursday and Friday.

*** Intake Total Suspended Solids values may be used to calculate "net" limitations, however, permittee must continue to maintain the ash pond system for adequate retention time for settling. River solids present in intake water are "treated" in the ash pond system but treatment levels are dependent on concentration and types of river solids present in intake water.

**** pH is measured in pH units and is not to be averaged. The pH is limited to the range of 6.0-9.0 pH units.

***** Once a quarter in the months of February, May, August and November.

Note 1 - The percent of concurrent receiving-stream flow that exceeds a 5 °F increase shall be computed daily and the results reported quarterly. Complete and uniform mixing shall be assumed, using the following formula:

$$\%\ \text{stream flow exceeding } 5°\ \text{increase} = \frac{\text{average daily btus/hour}}{\text{stream flow (cfs)} \times 11{,}200}$$

USGS stream-flow records for the Missouri River at Hermann shall be used.

Note 2 - The first quarterly report due date for this reissued permit is based on a complete calendar quarter monitoring period. Monitoring shall be reported once per quarter for the entire life of the permit. The permittee is still responsible for reporting for the preceding calendar quarter under the previous permit.

C. SPECIAL CONDITIONS

1. Whole Effluent Toxicity (WET) Tests

WET tests will be conducted annually for Outfall #001 only if biocides are used. Outfall #002 (Ash Pond) will have annual tests.

WET tests will be conducted as follows:

a. Effluent Limitations

(1) Using single-dilution test, mortality observed in the AEC test concentration shall not be significantly different (at the 95% confidence level; p = 0.05) than that observed in the upstream receiving-water control. The appropriate statistical tests of significance will be those outlined in the most current USEPA acute toxicity manual or those specified by the MDNR.

(2) Using multiple-dilution test:

(a) the computed percent effluent at the edge of the zone of initial dilution (AEC) must be less than three-tenths (0.3) of the LC_{50} concentration for the most sensitive of the test organisms, or,

(b) all dilutions equal to or greater than the AEC must be nontoxic.

b. Test Schedule and Follow-Up Requirements

(1) Perform a single-dilution test in the month of July and as outlined in permit thereafter.

If the test passes the effluent limit do not repeat test until the next test period. Submit results with the annual report.

If the test fails the effluent limit, a multiple dilution test shall be performed within 30 days, and biweekly thereafter until one of the following conditions are met:

(a) THREE CONSECUTIVE MULTIPLE-DILUTION TESTS PASS. No further tests need to be performed until next regularly scheduled test period.

(b) A TOTAL OF THREE MULTIPLE-DILUTION TESTS FAIL. The permittee shall conduct a "Toxicity Identification Evaluation" (TIE) and send report to DNR within 180 days.

(2) All failing test results shall be reported to DNR within 14 days of the availability of results.

(3) When WET test sampling is required to run over one DMR period, each DMR report shall contain information generated during the reporting period.

C. SPECIAL CONDITIONS (continued)

1. Whole Effluent Toxicity (WET) Tests (continued)

c. PASS/FAIL procedure and effluent limitations

(1) To pass a single-dilution test, mortality observed in the AEC test concentration shall not be significantly different (at the 95% confidence level; p = 0.05) than that observed in the upstream receiving-water control. The appropriate statistical tests of significance will be those outlined in the most current USEPA acute toxicity manual or those specified by the MDNR.

(2) To pass a multiple-dilution test:

(a) the computed percent effluent at the edge of the zone of initial dilution (AEC) must be less than three-tenths (0.3) of the LC_{50} concentration for the most sensitive of the test organisms, or,

(b) all dilutions equal to or greater than the AEC must be nontoxic.

Failure of one multiple-dilution test is considered an effluent limit violation.

d. Test Conditions

(1) Test species: Ceriodaphnia dubia and fathead minnows, Pimephales promelas. Organisms used in WET testing should come from cultures reared for the purpose of conducting toxicity tests and should be cultured in a manner consistent with the most current USEPA guidelines. All test animals should be cultured as described in EPA-600/4-90/027.

(2) Test period: 48 hours
"Acceptable Effluent Concentration" (AEC): 81% effluent (Outfall #001)
"Acceptable Effluent Concentration" (AEC): 15% effluent (Outfall #002)

(3) When dilutions are required, upstream receiving stream water will be used as dilution water, if available; otherwise, "reconstituted" water will be used. Procedures for generating reconstituted water will be supplied by the Department of Natural Resources (DNR).

(4) Tests should be run on a grab sample of the effluent. Tests should be initiated immediately after the sample is collected, but tests must be initiated no later than 36 hours after collection.

(5) Single-dilution tests will be run with:

(a) Effluent at the AEC concentration;
(b) 100% receiving-stream water (if available), collected upstream of the outfall at a point beyond any influence of the effluent; and
(c) reconstituted water.

C. SPECIAL CONDITIONS (continued)

1. Whole Effluent Toxicity (WET) Tests (continued)

d. Test Conditions (continued)

(6) Multiple-dilution tests will be run with:

(a) 100%, 50%, 25%, 12.5%, and 6.25% effluent, unless the AEC is less than 25% effluent, in which case dilutions will be 4 times the AEC, two times the AEC, AEC, 1/2 AEC and 1/4 AEC.
(b) 100% receiving-stream water (if available), collected upstream of the outfall at a point beyond any influence of the effluent; and
(c) reconstituted water.

(7) If reconstituted-water control mortality for a test species exceeds 10%, the entire test will be rerun.

(8) If mortality in the upstream receiving stream water control exceeds 10%, the MDNR should be notified immediately for guidance on how to proceed.

(9) The following information will be reported: Time and date of effluent collection. Time and date of arrival of effluent to laboratory and effluent temperature. Time and date of test initiation. Initial pH, dissolved oxygen, ammonia, total residual chlorine, conductivity, and temperature measurements. Final measurements of each test concentration of pH, dissolved oxygen, ammonia-N, and conductivity. Daily measurements of temperature. Time of any adjustments to dissolved oxygen. Results of all toxicity tests including controls and reference toxicant tests and date reference toxicant test was last performed. Date the report of tests was completed and the signature of person conducting tests and the Director of the laboratory.

(10) All other test methods and procedures should be consistent with guidance given in the EPA Handbook 600/4-90/027, Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms (4th edition), published September, 1991 or subsequent updates.

2. Report as no-discharge when a discharge does not occur during the report period.

3. This permit may be modified, or alternatively revoked and reissued, to comply with any applicable effluent standard or limitation issued or approved under Sections 301(b)(2)(C), and (D), 304(b)(2) and 307(a)(2) of the Clean Water Act, if the effluent standard or limitation so issued or approved:

(a) Contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or

(b) Controls any pollutant not limited in the permit.

The permit as modified or reissued under this paragraph shall also contain any other requirements of the Act then applicable.

C. SPECIAL CONDITIONS (continued)

4. There shall be no release of polychlorinated biphenyl compounds (PCBs) to waters of the state at or above the level of quantification currently defined as 1 ug/l or 1 ppb.

5. Discharge of wastewater from this facility must not alone or in combination with other sources cause the receiving stream to violate the following:

   (a) Water temperatures and temperature differentials specified in Missouri Water Quality Standards shall be met.

6. Any pesticide discharge from any point source shall comply with the requirements of Federal Insecticide, Fungicide and Rodenticide Act, as amended (7 U.S.C. 136 et. seq.) and the use of such pesticides shall be in a manner consistent with its label.

7. Neither free available chlorine nor total residual chlorine may be discharged from any unit for more than two hours in any one day.

8. An upset provision, identical to the upset provision set forth at 10 CSR 122.41(n), is hereby incorporated in this permit.

9. Changes in Discharges of Toxic Substances

   The permittee shall notify the Director as soon as it knows or has reason to believe:

   a. That any activity has occurred or will occur which would result in the discharge of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels:"

      (1) One hundred micrograms per liter (100 ug/l);

      (2) Two hundred micrograms per liter (200 ug/l) for acrolein and acrylonitrile; five hundred micrograms per liter (500 ug/l) for 2,4 dinitrophenol and for 2-methyl-4, 6-dinitrophenol; and one milligram per liter (1 mg/l) for antimony;

      (3) Five (5) times the maximum concentration value reported for the pollutant in the permit application;

      (4) The level established in Part A of the permit by the Director.

   b. That they have begun or expect to begin to use or manufacture as an intermediate or final product or byproduct any toxic pollutant which was not reported in the permit application.

10. Permittee is to abandon the treatment facilities described herein and shall connect the tributary waste load to trunk sewers within 90 days of notice of availability if trunk sewers operated by one of the authorities outlined in Section (3)(B) 1 or 2 of Clean Water Commission Regulation 10 CSR 20-6.010 are made available to the site during the time a valid discharge permit exists.

C. SPECIAL CONDITIONS (continued)

11. The following criteria shall be applicable to all waters of the state at all times including mixing zones:

(A) Waters shall be free from substances in sufficient amounts to cause the formation of putrescent, unsightly or harmful bottom deposits or prevent full maintenance of beneficial uses;

(B) Waters shall be free from oil, scum and floating debris in sufficient amounts to be unsightly or prevent full maintenance of beneficial uses;

(C) Waters shall be free from substances in sufficient amounts to cause unsightly color or turbidity, offensive odor or prevent full maintenance of beneficial uses; and

(D) Waters shall be free from substances or conditions in sufficient amounts to have a harmful effect on human, animal or aquatic life.

12. Sludge and Biosolids Use For Domestic Wastewater Treatment Facilities

a. Permittee shall comply with the pollutant limitations, monitoring, reporting, and other requirements in accordance with the attached permit Standard Conditions.

13. Treatment or Storage of Ash from Power Plants

(a) Disposal of ash is not authorized by this permit.

(b) This permit does not pertain to permits for disposal of ash or exemptions for beneficial uses of ash under the Missouri Solid Waste Management Law and regulations.

(c) This permit does not authorize off-site storage, use or disposal of ash in regard to water pollution control permits required under 10 CSR 20-6.015 and 10 CSR 20-6.200.

(d) Subsurface discharges from wastewater treatment ponds or ash ponds shall, at the property boundary, meet the effluent limitations for subsurface waters of the state under 10 CSR 20-7.015(7), with appropriate consideration of up-gradient water quality.