

STATE OF MISSOURI
DEPARTMENT OF NATURAL RESOURCES
MISSOURI CLEAN WATER COMMISSION



CONSTRUCTION PERMIT

The Missouri Department of Natural Resources hereby issues a permit to:

Ameren Missouri-Sioux Energy Center
8501 North State Route 94
West Alton, MO 63386

for the construction of (described facilities):

See attached.

Permit Conditions:

See attached.

Construction of such proposed facilities shall be in accordance with the provisions of the Missouri Clean Water Law, Chapter 644, RSMo, and regulation promulgated thereunder, or this permit may be revoked by the Department of Natural Resources (Department).

As the Department does not examine structural features of design or the efficiency of mechanical equipment, the issuance of this permit does not include approval of these features.

A representative of the Department may inspect the work covered by this permit during construction. Issuance of a permit to operate by the Department will be contingent on the work substantially adhering to the approved plans and specifications.

This permit applies only to the construction of water pollution control components; it does not apply to other environmentally regulated areas.

May 7, 2018
Effective Date

Edward B. Galbraith
Edward B. Galbraith, Director, Division of Environmental Quality

May 6, 2020
Expiration Date

Chris Wieberg
Chris Wieberg, Director, Water Protection Program

CONSTRUCTION PERMIT

I. CONSTRUCTION DESCRIPTION

Ameren-Sioux Energy Center is constructing an ultraviolet disinfection system for the domestic wastewater plant to meet final *E. Coli* effluent limits. The UV system will be a Trojan UV 3000 PTP capable of treating a peak flow of 74,000 gpd while delivering a minimum UV intensity of 30 mJ/cm² with an expected transmissivity of 65% or greater. The UV system consists of one bank with two modules per bank and two lamps per module. This project will also include general site work appropriate to the scope and purpose of the project and all necessary appurtenances to make a complete and usable wastewater treatment facility.

II. COST ANALYSIS FOR COMPLIANCE

Pursuant to Section 644.145, RSMo, when issuing permits under this chapter that incorporate a new requirement for discharges from publicly owned combined or separate sanitary or storm sewer systems or publicly owned treatment works, or when enforcing provisions of this chapter or the Federal Water Pollution Control Act, 33 U.S.C. 1251 et seq., pertaining to any portion of a publicly owned combined or separate sanitary or storm sewer system or [publicly owned] treatment works, the Department of Natural Resources shall make a “finding of affordability” on the costs to be incurred and the impact of any rate changes on ratepayers upon which to base such permits and decisions, to the extent allowable under this chapter and the Federal Water Pollution Control Act. This process is completed through a cost analysis for compliance. Permits that do not include new requirements may be deemed affordable.

The Department is not required to complete a cost analysis for compliance because the facility is not a combined or separate sanitary sewer system for a publically-owned treatment works.

III. CONSTRUCTION PERMIT CONDITIONS

The permittee is authorized to construct subject to the following conditions:

1. This construction permit does not authorize discharge.
2. All construction shall be in accordance with the plans and specifications submitted by Orbital Engineering, Inc. on April 20, 2018 and April 27, 2018.
3. The Department must be contacted in writing prior to making any changes to the approved plans and specifications that would directly or indirectly have an impact on the capacity, flow, system layout, or reliability of the proposed wastewater treatment facilities or any design parameter that is addressed by 10 CSR 20-8, in accordance with 10 CSR 20-8.110(8).

4. State and federal law does not permit bypassing of raw wastewater, therefore steps must be taken to ensure that raw wastewater does not discharge during construction. If a sanitary sewer overflow or bypass occurs, report the appropriate information to the Department's St. Louis Regional Office per 10 CSR 20-7.015(9)(E)2.
5. In addition to the requirements for a construction permit, 10 CSR 20-6.200 requires land disturbance activities of 1 acre or more to obtain a Missouri state operating permit to discharge stormwater. The permit requires best management practices sufficient to control runoff and sedimentation to protect waters of the state. Land disturbance permits will only be obtained by means of the Department's ePermitting system available online at dnr.mo.gov/env/wpp/epermit/help.htm. See dnr.mo.gov/env/wpp/stormwater/sw-land-disturb-permits.htm for more information.
6. A United States (U.S.) Army Corps of Engineers (COE) permit (404) and a Water Quality Certification (401) issued by the Department or permit waiver may be required for the activities described in this permit. This permit is not valid until these requirements are satisfied. If construction activity will disturb any land below the ordinary high water mark of jurisdictional waters of the U.S. then a 404/401 will be required. Since the COE makes determinations on what is jurisdictional, you must contact the COE to determine permitting requirements. You may call the Department's Water Protection Program at 573-751-1300 for more information. See dnr.mo.gov/env/wpp/401/ for more information.
7. Upon completion of construction:
 - A. Ameren will become the continuing authority for operation, maintenance, and modernization of these facilities;
 - B. Submit an electronic copy of the as built's if the project was not constructed in accordance with previously submitted plans and specifications; and
 - C. Submit the enclosed form Statement of Work Completed to the Department in accordance with 10 CSR 20-6.010(5)(D). When the facility applies for their next operating permit renewal, they will be expected to include an updated facility description on their application.

IV. REVIEW SUMMARY

1. CONSTRUCTION PURPOSE

Construction is to meet the E. Coli effluent limits that become effective April 1, 2019. The final effluent limits for *E. Coli* are a daily maximum effluent limit of 630 per 100 mL and a monthly average limit of 126 per 100 mL.

2. FACILITY DESCRIPTION

The Ameren Missouri – Sioux Energy Center is located at 8501 North State Route 94, West Alton in St. Charles County in the confluence area of the Mississippi and Missouri Rivers. Sioux is an electrical generating establishment primarily engaged in the generation of electricity for distribution and sale which results primarily from the processing of a fossil fuel (coal). The facility commenced operations in 1968 and the two coal-fired boilers produce steam for the generation of approximately 1,000 MWe.

Outfall #02A is the discharger from the domestic package plant with a design average flow of 39,000 gpd and an average flow of 7,500 gpd. The domestic treatment plant includes flow equalization, extended aeration, and a sludge holding tank. The sludge is removed by contract hauler. Currently Outfall #02A is discharged in the ash pond, Outfall #002; however with the other changes at the facility, in the future Outfall #02A will become Outfall #09A and be discharged through Outfall #009 with the closure of the ash pond. That change was previously public noticed February 16, 2018-March 19, 2018 and covered in construction permit CP0001942 issued April 18, 2018.

3. COMPLIANCE PARAMETERS

The final effluent limits the project is required to meet are established in Ameren-Sioux Energy Center's operating permit for Outfall #02A, Table A-6. Ameren is required to meet final *E. Coli* effluent limits by April 1, 2019. The final effluent limits for *E. Coli* are a daily maximum effluent limit of 630 per 100 mL and a monthly average limit of 126 per 100 mL.

4. REVIEW of MAJOR TREATMENT DESIGN CRITERIA

The current design guides, 10 CSR 20-8, do not contain design parameters for this configuration of technology or for ultraviolet disinfection.

Existing major components which will remain in use include the following and were not reviewed as part of this construction permit action:

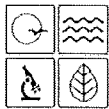
- Extended Aeration Package Plant is a Clarator Model #20102 that was installed in 1993 and has a rated capacity of 39,000 gpd. The package plant includes flow equalization, extended aeration basin, and a sludge holding tank.

Construction will cover the following items:

- Ultraviolet Disinfection – Disinfection is the process of removal, deactivation, or killing of pathogenic microorganisms.
 - A Trojan UV3000PTP will be installed capable of treating a peak flow of 74,000 gpd while delivering a minimum UV intensity of 30 mJ/cm² with an expected ultraviolet transmissivity of 65% or greater.
 - A peak flow of 74,000 gpd is a peaking factor of 1.8 from the design average flow and a peaking factor of 10.1 from the average discharge flows.
 - The UV system consists of one bank with two modules per bank and two lamps per module.
 - Spare parts for the UV system include 4 lamps, 4 sleeves, and 4 lamp holders.
 - The disinfected effluent will flow to Outfall #002 or Outfall #009.
- The Ameren-Sioux Energy Center is located in FEMA Zone X as an area with minimal flood hazard and the equipment will be protected the 100 year and 25 year floods.
- Backup power will be provided from redundant electrical buses in the water treatment plant, which has battery back-up.
- The UV system will be housed in a concrete enclosure
- Replacement of an existing twenty-five year old 90° tee in the effluent pipe with new 45° elbows.

5. OPERATING PERMIT

These construction activities do not require a modification to the operating permit. It is expected that the facility owner will include a new facility description in their next operating permit renewal or modification application to reflect the installation of an ultraviolet disinfection system.



MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM

**APPLICATION FOR CONSTRUCTION PERMIT –
WASTEWATER FACILITY**

RECEIVED
APR 20 2018
Water Protection Program

FOR DEPARTMENT USE ONLY

APP NO.	CP NO.
FEE RECEIVED \$1000.00	CHECK NO. 1444597
DATE RECEIVED 4-20-18	

APPLICATION OVERVIEW

The Application for Construction Permit – Wastewater Facility form is for construction pertaining to domestic wastewater treatment facilities, agrichemical facilities, and components thereof. This form has been developed in a modular format and consists of Part A and B. **All applicants must complete Part A.** Part B should be completed for applicants who currently land-apply wastewater or propose land application for wastewater treatment. **Please read the accompanying instructions before completing this form. Submittal of an incomplete application may result in the application being returned.**

PART A – BASIC INFORMATION

1.0 APPLICATION INFORMATION (Note – If any of the questions in this section are answered NO, this application may be considered incomplete and returned.)

- 1.1 Is this a Federal/State funded project? ☐ YES ☒ N/A Funding Agency: _____ Project #: _____
- 1.2 Is this an application for an agrichemical? ☐ YES (See instructions.) ☐ N/A
- 1.3 Has the Missouri Department of Natural Resources approved the proposed project's antidegradation review?
☐ YES Date of Approval: _____
- 1.4 Has the department approved the proposed project's facility plan*?
☐ YES Date of Approval: _____ ☐ NO ☒ N/A (If Not Applicable, complete No. 1.5.)
- 1.5 [Complete only if answered Not Applicable on No. 1.4] Is a copy of the engineering report* for wastewater treatment facilities with a design flow less than 22,500 gpd included with this application?
☒ YES ☐ NO Note: Design flow = 39,000 gpd
- 1.6 Is a copy of the appropriate plans* and specifications* included with this application?
☒ YES Denote which form is submitted: ☐ Hard copy ☒ Electronic copy (See instructions.) ☐ NO
- 1.7 Is a summary of design* included with this application? ☒ YES ☐ NO
- 1.8 Is a general operating permit applicable?
☐ YES Submit the appropriate operating permit application to the Regional Office at least 60 days prior to operation.
☒ NO Enclose the appropriate operating permit application and fee submittal. Denote which form: ☐ B ☐ B2
- 1.9 Is the facility currently under enforcement with the department or the Environmental Protection Agency? ☐ YES ☒ NO
- 1.10 Is the appropriate fee included with this application? ☒ YES ☐ NO (See instructions for appropriate fee.)
- * Must be affixed with a Missouri registered professional engineer's seal, signature and date.

2.0 PROJECT INFORMATION

2.1 NAME OF PROJECT

Ameren Missouri Sioux Energy Center - Sewage Treatment Plant Disinfection System

2.2 PROJECT DESCRIPTION

Installation of ultraviolet disinfection system for on-site package sanitary wastewater treatment plant.

2.3 SLUDGE HANDLING, USE AND DISPOSAL DESCRIPTION

No change from existing hauling via permitted third party to St. Louis Metropolitan Sewer District facility for treatment.

2.4 DESIGN INFORMATION

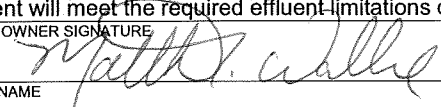
- A. Current population: _____; Design population: 170
- B. Actual Flow: 13,000 gpd; Design Average Flow: 39,000 gpd;
Actual Peak Daily Flow: _____ gpd; Design Maximum Daily Flow: _____ gpd;
Design Wet Weather Event: NA

2.5 ADDITIONAL INFORMATION

- A. Is a topographic map attached? ☒ YES ☐ NO
- B. Is a process flow diagram attached? ☒ YES ☐ NO

2.6 ESTIMATED PROJECT CONSTRUCTION COST

\$ 250,000.00

3.0 WASTEWATER TREATMENT FACILITY				
NAME Ameren Missouri Sioux Energy Center		TELEPHONE NUMBER WITH AREA CODE (314) 554-2955		EMAIL ADDRESS cgiesmann@ameren.com
ADDRESS (PHYSICAL) 8501 North State Route 94	CITY West Alton	STATE MO	ZIP CODE 63386	COUNTY St Charles
Wastewater Treatment Facility: Mo- 0000353 (Outfall 02A Of)				
3.1 Legal Description: NA ¼, NA ¼, NA ¼, Sec. NA , T 48N , R 6E (Use additional pages if construction of more than one outfall is proposed.)				
3.2 UTM Coordinates Easting (X): 735056 Northing (Y): 4310964 For Universal Transverse Mercator (UTM), Zone 15 North referenced to North American Datum 1983 (NAD83)				
3.3 Name of receiving streams: Mississippi River via Poeling Lake after additional treatment in the Bottom Ash Pond (Outfall 002)				
4.0 PROJECT OWNER				
NAME Union Electric Company d/b/a Ameren Missouri		TELEPHONE NUMBER WITH AREA CODE (314) 554-2955		EMAIL ADDRESS cgiesmann@ameren.com
ADDRESS 1901 Chouteau Avenue, PO Box 66149	CITY St Louis	STATE MO	ZIP CODE 63166	
5.0 CONTINUING AUTHORITY: Permanent organization that will serve as the continuing authority for the operation, maintenance and modernization of the wastewater collection system.				
NAME Same as Owner		TELEPHONE NUMBER WITH AREA CODE		EMAIL ADDRESS
ADDRESS	CITY	STATE	ZIP CODE	
5.1 A letter from the continuing authority, if different than the owner, is included with this application. <input type="checkbox"/> YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> N/A				
5.2 COMPLETE THE FOLLOWING IF THE CONTINUING AUTHORITY IS A MISSOURI PUBLIC SERVICE COMMISSION REGULATED ENTITY.				
A. Is a copy of the certificate of convenience and necessity included with this application? <input type="checkbox"/> YES <input type="checkbox"/> NO				
5.3 COMPLETE THE FOLLOWING IF THE CONTINUING AUTHORITY IS A PROPERTY OWNERS ASSOCIATION.				
A. Is a copy of the as-filed restrictions and covenants included with this application? <input type="checkbox"/> YES <input type="checkbox"/> NO				
B. Is a copy of the as-filed warranty deed, quitclaim deed or other legal instrument which transfers ownership of the land for the wastewater treatment facility to the association included with this application? <input type="checkbox"/> YES <input type="checkbox"/> NO				
C. Is a copy of the as-filed legal instrument (typically the plat) that provides the association with valid easements for all sewers included with this application? <input type="checkbox"/> YES <input type="checkbox"/> NO				
D. Is a copy of the Missouri Secretary of State's nonprofit corporation certificate included with this application? <input type="checkbox"/> YES <input type="checkbox"/> NO				
6.0 ENGINEER				
ENGINEER NAME / COMPANY NAME Orbital Engineering, Inc		TELEPHONE NUMBER WITH AREA CODE (314) 596-9399		EMAIL ADDRESS orbitalengr.com
ADDRESS 227 South Jefferson	CITY St Louis	STATE MO	ZIP CODE 63103	
7.0 PROJECT OWNER: I hereby certify that I am familiar with the information contained in this application and to the best of my knowledge and belief such information is true, complete, and accurate, and if granted this permit, I agree to abide by the Missouri Clean Water Law and all rules, regulations, orders, and decisions, subject to any legitimate appeal available to applicant under Missouri Clean Water Law. I also understand the issuance of the construction permit does not guarantee the proposed wastewater treatment will meet the required effluent limitations of the issued Missouri State Operating Permit for this facility.				
PROJECT OWNER SIGNATURE 				
PRINTED NAME Matthew T. Wallace			DATE 04/12/18	
TITLE OR CORPORATE POSITION Director, Sioux Energy Center		TELEPHONE NUMBER WITH AREA CODE (314) 992-6201		EMAIL ADDRESS
Mail completed copy to: MISSOURI DEPARTMENT OF NATURAL RESOURCES WATER PROTECTION PROGRAM P.O. BOX 176 JEFFERSON CITY, MO 65102-0176				
END OF PART A.				
REFER TO THE APPLICATION OVERVIEW TO DETERMINE WHETHER PART B NEEDS TO BE COMPLETE.				