



Jeremiah W. (Jay) Nixon, Governor

Sara Parker Pauley, Director

## DEPARTMENT OF NATURAL RESOURCES

dnr.mo.gov

Ms. Gail Geary  
Ameren Missouri  
1901 Chouteau Ave.  
PO Box 66149, MC 602  
St. Louis, MO 63166-6149

RE: Ameren Callaway Energy Center-Water Treatment Plant Sedimentation Basins #5 & #6,  
MO-0098001, Construction Permit No. CP0001707, Callaway County

Dear Ms. Geary:

The Missouri Department of Natural Resources, Water Protection Program, has reviewed the plans and specifications submitted by Ameren Missouri for Callaway Energy Center. Please find enclosed Construction Permit No. CP0001707.

This permit will terminate 24 months from the date of issuance. In accordance with 10 CSR 20-6.010(4)(G), the department may grant an extension only one time. If you believe that an extension is necessary, you must submit a request and a justification in writing for the extension at least 30 days prior to the permit expiration date.

This construction permit does not supersede any requirements of the operating permit or enforcement actions. Nothing in this permit removes any obligations to comply with county or other local ordinances or restrictions.

If you were adversely affected by this decision, you may be entitled to an appeal before the Administrative Hearing Commission (AHC) pursuant to 10 CSR 20-1.020 and Section 621.250, RSMo. To appeal, you must file a petition with the AHC within 30 days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If any such petition is sent by registered mail or certified mail, it will be deemed filed on the date it is mailed; if it is sent by any method other than registered mail or certified mail, it will be deemed filed on the date it is received by the AHC. Contact information for the AHC is: Administrative Hearing Commission, Truman State Office Building, Room 640, 301 W. High Street, P.O. Box 1557, Jefferson City, Missouri 65102, Phone: 573-751-2422, Fax: 573-751-5018, and Website: [www.oa.mo.gov/ahc](http://www.oa.mo.gov/ahc).



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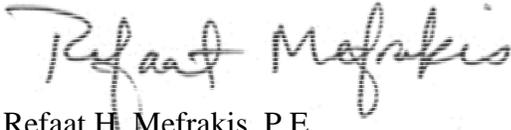
Ms. Geary  
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If you have any questions concerning this matter, please contact Ms. Leasue Meyers, of the Water Protection Program, at (573) 751-7906 or Missouri Department of Natural Resources, P.O. Box 176, Jefferson City, Missouri 65102.

Thank you for your efforts to help ensure clean water in Missouri.

Sincerely,

WATER PROTECTION PROGRAM

A handwritten signature in cursive script that reads "Refaat Mefrakis".

Refaat H. Mefrakis, P.E.  
Engineering Section Chief

RHM: lmk

Enclosures

c: Mr. Ross Kassman, PE, Engineering Survey and Services  
Northeast Regional Office

**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  
Callaway Energy Center  
Junction Highway CC & Route O  
Fulton, MO 65251

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.

06/03/2015  
Effective Date

*Sara Parker Pauley*  
Sara Parker Pauley, Director, Department of Natural Resources

06/02/2017  
Expiration Date

*John Madras*  
John Madras, Director, Water Protection Program

## **CONSTRUCTION PERMIT**

### **I. CONSTRUCTION DESCRIPTION**

Ameren Missouri-Callaway Energy Center is a steam electrical generation plant primarily engaged in the generation of electricity for distribution and sale. The plant consists of one generating unit with a capability of 1,190 megawatts (MW). The construction of the two additional sedimentation lagoons will provide continued sedimentation/collection of water treatment plant solids removed from the Missouri River water. Effluent from the existing sedimentation basins is permitted through Outfall #003, which is recycled back to the head of the water treatment plant. Lagoon #5 will have a design capacity of approximately 187,353 cubic yards and lagoon #6 will have a design capacity of approximately 228,082 cubic yards. The project will also include general site work appropriate to the scope and purpose of the project and all necessary appurtenances to make complete and usable sedimentation basins.

### **II. FINDING OF AFFORDABILITY**

The Finding of Affordability is not applicable. The permittee is not a combined or separate sanitary sewer system or a publicly 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 Ameren Missouri on December 16, 2014.
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 Northeast Regional Office per 10 CSR 20-7.015(9)(E)2.
5. This construction permit is invalid for projects required to comply with the requirements contained in 10 CSR 20-4, "Grants and Loans"
6. Protection of drinking water supplies shall be in accordance with 10 CSR 20-8.120(10). "There shall be no physical connections between a public or private potable water supply system and a sewer, or appurtenance thereto which would permit the passage of any wastewater or polluted water into the potable supply. No water pipe shall pass through or come in contact with any part of a sewer manhole."

7. Sewers in relation to water works structures shall meet the requirements of 10 CSR 23-3.010 with respect to minimum distances from public water supply wells or other water supply sources and structures.
  - A. Sewer mains shall be laid at least 10 feet horizontally from any existing or proposed water main. The distances shall be measured edge-to-edge. In cases where it is not practical to maintain a 10 foot separation, the department may allow a deviation on a case-by-case basis, if supported by data from the design engineer. Such a deviation may allow installation of the sewer closer to a water main, provided that the water main is in a separate trench or on an undisturbed earth shelf located on either side of the sewer and at an elevation so the bottom of the water main is at least 18 inches above the top of the sewer. If it is impossible to obtain proper horizontal and vertical separation as described above for sewers, the sewer must be constructed of slip-on or mechanical joint pipe or continuously encased and be pressure tested to 150 pounds per square inch to assure water tightness.
  - B. Manholes should be located at least 10 feet horizontally from any existing or proposed water main.
  - C. Manholes shall be located with the top access at or above grade level.
  - D. Sewers crossing water mains shall be laid to provide a minimum vertical distance of 18 inches between the outside of the water main and the outside of the sewer. This shall be the case where the water main is either above or below the sewer. The crossing shall be arranged so that the sewer joints will be equidistant and as far as possible from the water main joints. Where a water main crosses under a sewer, adequate structural support shall be provided for the sewer to maintain line and grade. When it is impossible to obtain proper vertical separation as stipulated above, one of the following methods must be specified:
    - a. The sewer shall be designed and constructed equal to the water pipe and shall be pressure tested to assure water tightness prior to backfilling; or
    - b. Either the water main or sewer line may be continuously encased or enclosed in a watertight carrier pipe which extends 10 feet on both sides of the crossing, measured perpendicular to the water main. The carrier pipe shall be of materials approved by the department for use in water main construction.
8. In addition to the requirements for a construction permit, 10 CSR 20-6.200 requires land disturbance activities of one 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 [www.dnr.mo.gov/env/wpp/epermit/help.htm](http://www.dnr.mo.gov/env/wpp/epermit/help.htm). See [www.dnr.mo.gov/env/wpp/stormwater/sw-land-disturb-permits.htm](http://www.dnr.mo.gov/env/wpp/stormwater/sw-land-disturb-permits.htm) for more information.

9. 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 [www.dnr.mo.gov/env/wpp/401/](http://www.dnr.mo.gov/env/wpp/401/) for more information.
10. Upon completion of construction;
  - A. Ameren Missouri will become the continuing authority for operation, maintenance, and modernization of these facilities;
  - B. Submit the enclosed form Statement of Work Completed to the department in accordance with 10 CSR 20-6.010(5)(D); and
  - C. Submit an electronic copy of the as built if the project was not constructed in accordance with previously submitted plans and specifications.

#### **IV. REVIEW SUMMARY**

##### **1. CONSTRUCTION PURPOSE**

The construction of the two additional sedimentation lagoons will provide continued sedimentation/collection of water treatment plant solids removed from the Missouri River water. Effluent from the existing sedimentation basins is permitted through Outfall #003, which is recycled back to the head of the water treatment plant.

##### **2. FACILITY DESCRIPTION**

Ameren Missouri-Callaway Energy Center is a steam electrical generation plant primarily engaged in the generation of electricity for distribution and sale. The plant consists of one generating unit with a capability of 1,190 megawatts (MW). This facility has 12 permitted features. The Callaway Power Plant combined discharge line (Outfalls #001, #002, #016) has a cumulative daily average flow of 7.74 MGD and a daily maximum flow of 14.4 MGD.

Outfall #003 is the discharge from the water treatment plant, which is recycled back to the head of the water treatment plant and used as cooling water. The construction of the two new basins will provide continued collection of water treatment plant solids. The new sedimentation basins will be immediately west of the existing basins. Lagoon #5 will have a design capacity of approximately 187,353 cubic yards and lagoon #6 will have a design capacity of approximately 228,082 cubic yards.

### **3. REVIEW of MAJOR TREATMENT DESIGN CRITERIA**

The clarified water discharged from the lagoons drains to the Supernatant Pump Station, where it is recycled back to the water treatment plant raw water stilling basin. The construction of the two basins (lagoon #5 and lagoon #6) will be put in place alongside the existing basins (lagoon #3 and lagoon #4). The new basins will be a settlement pond for sludge generated in the water treatment plant process. The design flow rate is the existing flow rate into lagoons #3 and #4 of 860 gallons per minute daily average.

Two of the embankments for lagoon #5 already exist and one embankment exists for lagoon #6. The embankments will be constructed with 3:1 slopes, 20 foot wide berm top, and 2 feet of freeboard. Lagoon #5 will be 543' by 533' by 23' providing capacity of 187,353 cubic yards. Total surface area of 6.6 acres for lagoon #5. For lagoon #6, will be 558' by 548' by 28' providing capacity of 228,082 cubic yards. The surface area of 7 acres for lagoon #6. Based on the soils report, the soil compaction at the bottom of the lagoons is expected to be  $2.5 \times 10^{-8}$  cm/sec, which is more protective than the  $5.4 \times 10^{-7}$  cm/sec required in 10 CSR 20-8.200(6)(C)1.

The existing pump station and chamber has volume of 45,000 gallons to equalize water caused by storms. Precipitation is limited in impact by restriction plates on the lagoon decant structure overflow pipes.

### **4. OPERATING PERMIT**

As the water from the water treatment plant and into the sedimentation basins is recycled back in the facility, flows are not increasing and no new pollutants of concern are being introduced, only the facility description needs updated. The renewal of Callaway Energy Center's Operating permit MO-0098001 is planned for public noticed in the 2015. The facility description will be updated to reflect the planned construction of sedimentation basins.

# RECEIVED

AP2095  
CP0001707  
MO-0098001



MISSOURI DEPARTMENT OF NATURAL RESOURCES  
WATER PROTECTION PROGRAM  
DEC 16 2014  
APPLICATION FOR CONSTRUCTION PERMIT -  
WASTEWATER TREATMENT FACILITY

WATER PROTECTION PROGRAM

FOR DEPARTMENT USE ONLY	
APP NO.	CP NO.
DATE RECEIVED	CHECK NO.
DATE RECEIVED	

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1416284 #1  
12/16/14  
416285  
SB

### APPLICATION OVERVIEW

The Application for Construction Permit – Wastewater Treatment Facility 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 Has the Missouri Department of Natural Resources approved the proposed project's antidegradation review?  
 YES Date of Approval: \_\_\_\_\_ Not Required - no increase in waste water flow & a previously permitted Outfall  
 Attached is the No Degradation Evaluation Conclusion of Antidegradation Review form
- 1.3 Has the department approved the proposed project's facility plan\*? Not Required - Met/discussed with MODNR on 3/28/2013  
 YES Date of Approval: \_\_\_\_\_  NO  N/A (If Not Applicable, complete No. 1.4.)
- 1.4 [Complete only if answered Not Applicable on No. 1.3.] 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
- 1.5 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
- 1.6 Is a summary of design\* included with this application?  YES  NO
- 1.7 Has the appropriate operating permit application (A, B, or B2) been submitted to the department?  
 YES Date of submittal: 8/1/2013  
 Enclosed is the appropriate operating permit application submittal. Denote which form:  A  B  B2  
 N/A Please explain: \_\_\_\_\_
- 1.8 Is the facility currently under enforcement with the department or the Environmental Protection Agency?  YES  NO
- 1.9 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

Callaway Energy Center Water Treatment Sedimentation Lagoons #5 & #6

2.2 PROJECT DESCRIPTION

Construction of two additional sedimentation lagoons will provide continued sedimentation/collection of water treatment plant solids removed from Missouri River water. Effluent from existing sedimentation lagoons is permitted as Outfall #003 per the Callaway Energy Center NPDES Permit MO-0098001. This effluent is recycled to the head of the water treatment plant and used as cooling water before being discharged to the Missouri River. Lagoon #5 will have a design capacity of approximately 187,353 cubic yards with 2 feet of freeboard. Lagoon #6 will have a design capacity of approximately 228,082 cubic yards with 2 feet of freeboard.

2.3 SLUDGE HANDLING, USE AND DISPOSAL DESCRIPTION

River solids collected in the sedimentation lagoons will remain in place until permanent closure of the lagoons occurs.

2.4 DESIGN INFORMATION

- A. Current population: N/A; Design population: N/A
- B. Actual Flow: 680,000 gpd; Design Average Flow: \_\_\_\_\_ gpd;  
Actual Peak Daily Flow: 1,600,000 gpd; Design Maximum Daily Flow: \_\_\_\_\_ gpd

2.5 ADDITIONAL INFORMATION

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

3.0 WASTEWATER TREATMENT FACILITY				
NAME Callaway Energy Center, Ameren Missouri		TELEPHONE NUMBER WITH AREA CODE (314) 225-1101		E-MAIL ADDRESS rkempf@ameren.com
ADDRESS (PHYSICAL) Junction Highway CC & Route O	CITY Fulton	STATE MO	ZIP CODE 65251	COUNTY Callaway
Wastewater Treatment Facility: Mo- 0098001 (Outfall 003 Of )				
3.1 Legal Description: _____ ¼, SW _____ ¼, SW _____ ¼, Sec. 13, T 46N, R 8W (Use additional pages if construction of more than one outfall is proposed.)				
3.2 UTM Coordinates Easting (X): 606285 Northing (Y): 4289937 For Universal Transverse Mercator (UTM), Zone 15 North referenced to North American Datum 1983 (NAD83)				
3.3 Name of receiving streams: <u>Missouri River</u>				
4.0 PROJECT OWNER				
NAME Union Electric Company d/b/a Ameren Missouri		TELEPHONE NUMBER WITH AREA CODE (314) 554-2824		E-MAIL ADDRESS ggary@ameren.com
ADDRESS 1901 Chouteau Avenue	CITY St. Louis	STATE MO	ZIP CODE 63166-6149	
<b>5.0 CONTINUING AUTHORITY:</b> Permanent organization that will serve as the continuing authority for the operation, maintenance and modernization of the wastewater collection system.				
NAME Union Electric Company d/b/a Ameren Missouri		TELEPHONE NUMBER WITH AREA CODE (314) 554-2824		E-MAIL ADDRESS ggary@ameren.com
ADDRESS 1901 Chouteau Avenue	CITY St. Louis	STATE MO	ZIP CODE 63166-6149	
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 checked="" 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 Dennis F. Dickneite		TELEPHONE NUMBER WITH AREA CODE (573) 694-9059		E-MAIL ADDRESS ddickneite2@ameren.com
ADDRESS Junction Highway CC & Route O	CITY Fulton	STATE MO	ZIP CODE 65251	
<b>7.0 PROJECT OWNER:</b> 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 Barry L. Cox			DATE 12/9/14	
TITLE OR CORPORATE POSITION Senior Director Nuclear Operations		TELEPHONE NUMBER WITH AREA CODE (573) 676-8410		E-MAIL ADDRESS bcx3@ameren.com
Mail completed copy to: MISSOURI DEPARTMENT OF NATURAL RESOURCES WATER PROTECTION PROGRAM P.O. BOX 176 JEFFERSON CITY, MO 65102-0176				
<b>END OF PART A.</b>				
<b>REFER TO THE APPLICATION OVERVIEW TO DETERMINE WHETHER PART B NEEDS TO BE COMPLETE.</b>				