

September 19, 2006

U.S. Nuclear Regulatory Commission  
Attn: Document Control Desk  
Mail Stop P1-137  
Washington, DC 20555-0001

Ladies and Gentlemen:

ULNRC-05332



**DOCKET NUMBER 50-483  
CALLAWAY PLANT UNIT 1  
UNION ELECTRIC CO.  
FACILITY OPERATING LICENSE NPF-30  
NPDES CONSTRUCTION PERMIT**


Enclosed is a copy of a construction permit application associated with our NPDES permit that Union Electric Company, d.b.a. AmerenUE recently submitted to the Missouri Department of Natural Resources (MDNR). The construction permit is required in order to relocate the discharge line for Callaway Plant approximately 450 feet downstream from the current location, along the Missouri river. This copy of construction permit is being submitted in accordance with Callaway Plant Operating License NPF-30, Appendix B, Section 3.2.

The enclosed includes the construction permit application cover letter to the MDNR, MDNR Form A - Application for Construction or Operating Permit, and the Engineering Report for Relocation of the Discharge Line.

This letter and its enclosures do not contain new commitments.

If there are any questions or additional information is needed, please contact Dave Shafer at 314-554-3104.

Very truly yours,

  
for Keith Young  
Manager, Regulatory Affairs

PMB/jdg

Enclosure

C001

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Page 2

cc: Mr. Bruce S. Mallett  
Regional Administrator  
U.S. Nuclear Regulatory Commission  
Region IV  
611 Ryan Plaza Drive, Suite 400  
Arlington, TX 76011-4005

Senior Resident Inspector  
Callaway Resident Office  
U.S. Nuclear Regulatory Commission  
8201 NRC Road  
Steedman, MO 65077

Mr. Jack N. Donohew (2 copies)  
Licensing Project Manager, Callaway Plant  
Office of Nuclear Reactor Regulation  
U. S. Nuclear Regulatory Commission  
Mail Stop O-7D1  
Washington, DC 20555-2738

Missouri Public Service Commission  
Governor Office Building  
200 Madison Street  
PO Box 360  
Jefferson City, MO 65102-0360

bcc: C. D. Naslund  
A. C. Heflin  
K. D. Young  
G. A. Hughes  
D. E. Shafer (470)  
S. L. Gallagher (100)  
L. M. Belsky (NSRB)  
K. A. Mills  
P. M. Bell  
A160.0761

Certrec Corporation  
4200 South Hulen, Suite 630  
Fort Worth, TX 76109

*(Certrec receives ALL attachments  
as long as they are non-safeguards  
and public disclosed).*

Send the following without attachments:

Ms. Diane M. Hooper  
Supervisor, Licensing  
WCNOC  
P.O. Box 411  
Burlington, KS 66839

Mr. Dennis Buschbaum  
TXU Power  
Comanche Peak SES  
P.O. Box 1002  
Glen Rose, TX 76043

Mr. Scott Bauer  
Regulatory Affairs  
Palo Verde NGS  
P.O. Box 52034,  
Mail Station 7636  
Phoenix, AZ 85072-2034

Mr. Stan Ketelsen  
Manager, Regulatory Services  
Pacific Gas & Electric  
Mail Stop 104/5/536  
P.O. Box 56  
Avila Beach, CA 93424

Mr. Scott Head  
Supervisor, Licensing  
South Texas Project NOC  
Mail Code N5014  
P.O. Box 289  
Wadsworth, TX 77483

Mr. John O'Neill  
Pillsbury Winthrop Shaw Pittman LLP  
2300 N. Street N.W.  
Washington, DC 20037

September 8, 2006

Mr. Refaat Mefrakis  
Chief NPDES Permits and Engineering Section  
DEQ Water Protection Program  
Missouri Department of Natural Resources  
P.O. Box 176  
Jefferson City, MO 65102



RE: AmerenUE's Callaway Plant Combined Discharge Line Outfall Relocation  
NPDES Permit No. MO-0098001  
Construction Permit Application

Dear Mr. Mefrakis:

On Tuesday, July 13, 2006 we met at the Callaway Plant intake to discuss the proposed Discharge Line Outfall Relocation project. Later that week I submitted a letter as a follow-up summarizing key discussion points. Recently you informed me that a construction permit application would be required for the project, notwithstanding DNR's earlier tentative position to the contrary.

The current terminus of the Plant's combined discharge line is located immediately downstream of its Missouri River intake structure. As you may recall from the prior correspondence, the project involves relocating the discharge line to a point approximately 450 feet downstream (to place it against an existing wing dike, immediately upstream of where Logan Creek empties into the Missouri River). This modification is necessary to address the potential for recirculation of effluent from the combined discharge line into the intake during certain river conditions. The revised location will eliminate the potential recirculation and significantly improve mixing. Note that the project will not result in any change in effluent quality, discharge flows, or the receiving stream.

Callaway Plant's current NPDES permit expires on October 2, 2008. As described in the last permit application in detail (and reflected in the terms of the permit), cooling and process wastewater from various permitted outfalls at the Plant are combined in a pipeline and the mixed effluent is discharged to the Missouri River at a single location. These outfalls include the radwaste treatment system (#001), cooling tower blowdown (#002), treated sanitary wastewater (#007) and the cooling tower bypass (#016). {The permit also authorizes the discharge of water treatment plant wastes (#003) into this pipeline, although this effluent is normally recycled.}

The earlier correspondence contained a set of the preliminary construction drawings which have been revised and finalized. The following are included in this permit application package:

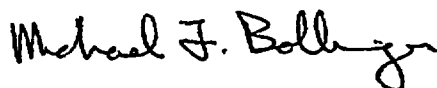
- Form A – Application for Construction or Operating Permit;
- An excerpt from Callaway Plant's existing NPDES permit (MO-0098001), pages 1 through 5 of 16 which includes descriptions of the outfalls;
- An Engineering Report for Relocation of the Combined Discharge Line; and
- A set of Specifications and Documents for Contract 16924, Cooling Tower Blowdown Discharge Relocation;

Note that a set of three drawings (Index, C001 and C002) will be emailed as they have recently been revised. Note that the prior letter contained a copy of the Corps of Engineers permit application which included a map detailing the project location. In a telephone conversation with Tim Stallman (and as later confirmed in a discussion with Rob Morrison), we agreed that the application package did not need to include Forms C or D. DNR should have records of these forms from our last NPDES operating permit application and this dataset continues to provide a valid description of the Plant's effluent quality. We can provide copies at DNR's request. Also, please note that as we discussed, at the time we were compiling this application DNR staff had not yet determined appropriate application fees for this project. Ameren will forward a check for the fees without delay, as soon as this matter is resolved.

Finally, although the area impacted by the construction is estimated to be less than one acre, you previously encouraged us to apply for a Land Disturbance Permit for the project. Please confirm whether this is still required. If so, we will compile a permit application (and a Storm Water Pollution Prevention Plan with appropriate Best Management Practices) and submit it directly to you or (at your request) to DNR's Northeast Regional Office.

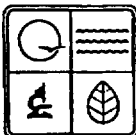
Please do not hesitate to call me at 314-554-3652 (or 314-550-2875) regarding this application or Mr. Tom Grothe, at 573-676-8506 regarding the construction details. We would very much appreciate your expeditious review, processing, and issuance of this permit, to minimize the delay in construction of this important modification.

Sincerely,



Michael Bollinger  
Consulting Environmental Scientist

Bcc: M. L. Menne / J. C. Pozzo / File WQ 3.1.1  
T. J. Grothe  
C. A. Riggs  
G. P. Gary



MISSOURI DEPARTMENT OF NATURAL RESOURCES  
WATER PROTECTION PROGRAM, WATER POLLUTION BRANCH  
(SEE MAP FOR APPROPRIATE REGIONAL OFFICE)  
**FORM A — APPLICATION FOR CONSTRUCTION OR  
OPERATING PERMIT UNDER MISSOURI CLEAN WATER LAW**

**FOR AGENCY USE ONLY**

CHECK NO.

DATE RECEIVED

FEE SUBMITTED

**NOTE**

PLEASE READ THE ACCOMPANYING INSTRUCTIONS BEFORE COMPLETING THIS FORM.

1.00 This application is for:

☒ a construction permit

☐ an operating permit for a new or unpermitted facility

(See instructions for appropriate fee to be submitted with application.)

☐ an operating permit modification

Reason: \_\_\_\_\_

☐ an operating permit renewal: permit # \_\_\_\_\_

Expiration date: \_\_\_\_\_

☐ a site specific storm water permit

**2.00 FACILITY**

NAME

AmerenUE Callaway Plant

PHONE

573-676-8365

FAX

573-676-4484

ADDRESS (PHYSICAL)

P.O. Box 620

CITY

Fulton

STATE

MO

ZIP

65251

2.10 Is this a new facility constructed under a Missouri Construction Permit? ☐ YES ☒ NO

If yes, please provide Missouri Construction Permit Number: \_\_\_\_\_

**3.00 OWNER**

NAME

Union Electric Co. d/b/a AmerenUE

EMAIL ADDRESS

mlmenne@ameren.com

PHONE

314-554-2816

FAX

314-554-4182

ADDRESS (MAILING)

P.O. Box 66149 (MC-602)

CITY

St. Louis

STATE

MO

ZIP

63166-6149

3.10 Request review of draft permit prior to Public Notice? ☒ YES ☐ NO

**4.00 CONTINUING AUTHORITY**

NAME

Same as owner

PHONE

FAX

ADDRESS (MAILING)

CITY

STATE

ZIP

**5.00 OPERATOR**

NAME

Same as owner

CERTIFICATE NUMBER

PHONE

FAX

ADDRESS (PHYSICAL)

CITY

STATE

ZIP

**6.00 FACILITY CONTACT**

NAME

Dave Neterer

TITLE

Manager, Operations

PHONE

573-676-8410

FAX

573-676-4484

**7.00 ADDITIONAL FACILITY INFORMATION**

7.10 Legal Description of Outfalls. (Attach additional sheets if necessary) See attached

001	1/4	1/4	Sec	T	R	County
002	1/4	1/4	Sec	T	R	County
003	1/4	1/4	Sec	T	R	County
004	1/4	1/4	Sec	T	R	County

7.20 Primary Standard Industrial Classification (SIC) Code: \_\_\_\_\_

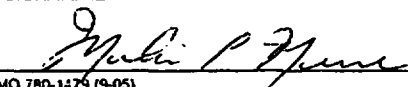
**8.00 ADDITIONAL FORMS AND MAPS NECESSARY TO COMPLETE THIS APPLICATION**  
(Complete all forms that are applicable)

- A. Is your facility a manufacturing, commercial, mining or silviculture waste treatment facility?  
If yes, complete Form C. ☒ YES ☐ NO
- B. Is your facility considered a "Primary Industry" under U.S. EPA guidelines?  
If yes, complete Forms C and D. ☒ YES ☐ NO
- C. Is application for storm water discharges only?  
If yes, complete U.S. EPA Form 2F. ☐ YES ☒ NO
- D. Attach a map showing all outfalls and the receiving stream at 1" = 2000' scale.
- E. Is wastewater land applied? ☐ YES ☒ NO
- F. Is sludge, biosolids, ash or residuals generated, treated, stored or land applied?  
If yes, complete Form R. ☐ YES ☒ NO

**9.00 DOWNSTREAM LANDOWNER(S)** Attach additional sheets as necessary. See Instructions. (PLEASE SHOW LOCATION ON MAP. SEE 8.00 D ABOVE.)

NAME Mary Austin Rochelle Rosenkoetter			
ADDRESS 4519 Holt Road 10248 State Road 94	CITY Wentzville Portland	STATE MO MO	ZIP 63385 65067

10.00 I certify that I am familiar with the information contained in the application, that 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 the Missouri Clean Water Law to the Missouri Clean Water Commission.

NAME AND OFFICIAL TITLE (TYPE OR PRINT) Michael L. Menne, Vice President - Environmental, Safety & Health	PHONE NO. (AREA CODE & NO.) 314-554-2816
SIGNATURE 	DATE SIGNED 9-6-06

MO 780-1479 (9-05)

**BEFORE MAILING, PLEASE ENSURE ALL SECTIONS ARE COMPLETED  
AND ADDITIONAL FORMS, IF APPLICABLE, ARE INCLUDED.**

**HAVE YOU INCLUDED:**

- ☐ Appropriate Fees?
- ☐ Map at 1" = 2000' scale?
- ☐ Signature?
- ☐ Form C, if applicable?
- ☐ Form D, if applicable?
- ☐ Form 2F, if applicable?
- ☐ Form I (Irrigation), if applicable?
- ☐ Form R (Sludge), if applicable?

**CALLAWAY NUCLEAR PLANT**  
**ENGINEERING REPORT FOR**  
**RELOCATION OF THE DISCHARGE LINE**

**INTRODUCTION:**

AmerenUE's Callaway Plant is an operating Nuclear Powered Electrical Generating Plant located on approximately 6,230 acres in eastern Callaway County. The plant site is approximately 12 miles southeast of Fulton, Missouri. While two nuclear power plant units were originally to be built on this site location, Unit 2 construction was cancelled in 1981 and the excavation was left in-place.

Please note that all directional references in this report are based upon true (compass) reading rather than plant reference direction, which is different as annotated on Callaway Plant drawings.

This modification eliminates the recirculation of nuclides such as tritium by relocating part of the plant discharge piping and the discharge point into the Missouri River. This piping is often referred to as blowdown piping. (Other nuclides are affected but to a much lesser extent than tritium).

Currently the existing plant discharge outflow is located close to the Intake Structure and some recirculation is occurring in which tritium that is discharged to the river is entering the intake piping and ending up through leak paths along the discharge piping corridor and in the cooling tower basin. Tritium is being released from the cooling tower basin which is not an approved release point.

Relocating the discharge pipe farther downstream of the existing discharge point will eliminate the recirculation of tritium. Project scope includes abandoning approximately 300 feet of 24" discharge piping and installing approximately 580 feet of new 36" piping from the nearest upstream manhole to a point farther downstream on the river approximately 400 feet. The new high density polyethylene (HDPE) pipe is sized based on the existing Unit 1 and future generating units at the Callaway site. Work activities include piping excavation, clearing, grubbing, demolition, backfilling, & shoreline protection. Considerable coordination with outside agencies including the US Army Corps of Engineers (USACE), State of MO Department of Natural Resources (MoDNR), Burns & McDonnell Engineering (B&McD), and contractors underlies this design. This modification has not been mandated by the NRC and is therefore elective/discretionary.



## **SITE CONDITIONS:**

The Callaway Plant site is located on a plateau lying about 5 miles north of the Missouri River. The plateau has elevations varying from about 830 to 850 feet MSL. The elevation of the Missouri River flood plain near the site is about 525 feet MSL. The plant grade elevation is established at 840 feet MSL and the standard plant floor elevation of the safety-related facilities at 840.5 feet MSL.

The site was selected for reasons that include its stable subsurface conditions and its low population density. The proximity to the Missouri River also is very important, since river water is the source of water for the plant's main cooling systems.

## **DESIGN CONSIDERATIONS & OPERATION:**

Burns & McDonnell Engineering Co. was the overall design engineer for this project. Their technical analysis which includes the sizing of the pipe and material selection information is documented as a Callaway record calculation and copies can be made available at DNRs request.

A *Tideflex* check valve was added to the point of discharge to prevent backflow and any river sediment that may accumulate in the discharge line. This is an entirely rubber check valve which does not require maintenance and will protrude beyond the limits of the riprap slightly. Considerable dialogue ensued with the Engineer and plant System Engineers regarding the arrangement of the check valve extending beyond the end of the pipe somewhat unprotected. One could perceive the valve as being vulnerable to large items floating down the river. With the concurrence of the Ameren System Engineer, the advantages out-weigh the very slight risk of this actually occurring. This was further supported by the fact that the valve, by design, is extremely flexible and can withstand considerable impact without damage.

A comprehensive topographical survey was completed by Central MO Professional Services at the outset of this project. Additionally, B&McD reviewed and considered historical river flow & level data. Depth soundings of the area were taken in evaluating mixing effects of the new discharge point. The ultimate pipe location and elevation, including mixing effects, were confirmed through the CORMIX modeling program results.

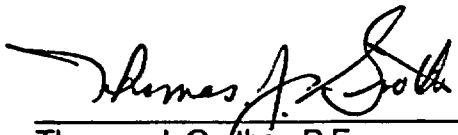
Walkdowns & meetings were held with the USACE and the MoDNR throughout this design development. In addition, AmerenUE Real Estate and Environmental Services departments were integral with this communication and development.

The USACE permitting approval was authorized under a letter to Ameren dated July 11, 2006 by cited nationwide permits (NWP). Additionally, a USACE follow-up letter dated August 7, 2006 authorized use of a government owned dike as required by the *Consent to Use Government-owned Revetment* policies.

### **CONCLUSION:**

The relocation of the plant discharge outfall at the Callaway Plant will comply with current licensing and design bases, and will support the elimination of the recirculation of nuclides into the plant Intake Structure. Further, the design of the new piping is considerably more robust than the existing design and significantly less vulnerable to leakage. The proposed discharge pipe relocation project will implement this change. This is otherwise know to Callaway Plant internal procedures as modification MP 06-0061.

Submitted by:

  
\_\_\_\_\_  
Thomas J. Grothe, P.E.  
State of MO E-19840

