CALLAWAY PLANT
FINAL ENVIRONMENTAL EVALUATION

1) Evaluation Applicable To: MP 07-0012 Rev. 0

2) **Description of Modification or Activity:**

Plant Modification 07-0012 will replace the existing cooling tower blowdown/discharge pipe between the Callaway Plant Circ and Service Water Pump House and the Missouri River. The design for the new discharge pipe was completed by MACTEC Engineering and Consulting, Inc. The existing pipe is primarily 24 to 27 inch reinforced plastic mortar pipe (techite) with some sections replaced with carbon steel due to past pipe breaks. The existing pipe has reached its service life expectancy. The new manufactured pipe will be seamless high density polyethylene pipe (HDPE DR 17) and will be approximately 36 inches in diameter to accommodate additional capacity for future generation. This 2-inch thick walled pipe will be installed to a general depth of 7 to 9 feet from bottom of pipe (although some sections will be at a depth of up to 28'). The intention is to provide 6' of cover for river bottom land and 4' of cover coming up the hill. The depth will increase significantly between the top of the hill and the plant.

HDPE pipe sections will be joined by a fusion process in which the ends of the pipe are melted and pressed together under pressure. This process ensures a leak-tight joint. The new pipe will also be hydrostatically tested to insure and verify a leak-tight system.

The pipe will be routed from the Circ and Service Water Pumphouse to the tie in point at the first valve pit approximately 450 feet from the Missouri River (approximately 5.8 miles long). The new piping will generally follow the existing discharge line with a 20-foot offset and be located approximately 5-30 feet from the existing pipe. Routing of the new line will include crossing both Logan Creek and Mud Creek. In order to eliminate the need for open trenching of the creeks, these crossings will be made utilizing directional drilling. Crossings of the Katy Trail, Highway 94 and the existing intake structure access road will be made by directional or straight boring to prevent surface disturbance. All work will be located on Ameren property with exception of a section 0.8 miles south of Route 94 in the Missouri River alluvial plain.

The new design will eliminate the air release valves used in the old piping design that resulted in some minor leakage of radioactive water into the manholes. The new design uses a single pressure release valve located near the highest elevation of the pipe that will be equipped with a self contained catch type basin that drains back into the discharge pipe.

The existing discharge pipe will remain in place until decommissioning of the Callaway Plant Site. A separate evaluation will be completed to address leaving the entire existing plant discharge pipe in place until site decommissioning (this will include the 300 feet of 24 inch pipe left in place near the Missouri River for MP 06-0061).

The US Army Corps of Engineers has been contacted for issuing the required Section 404 certification and Nationwide Permit 12 for dredge and fill activities within waters of the United States for this project (includes jurisdictional streams and jurisdictional wetlands). The Permit Application was submitted to the Army Corps of Engineers on 5/18/07 along with the Preliminary Jurisdictional Wetland and Stream Determination Report for the Callaway Nuclear Plant Discharge Pipeline Replacement prepared by MACTEC Engineering and Consulting, Inc, dated May 2007 (MACTEC Project No. 3250075219). Figures 1-1, 1-2 and 2-1 of this report provide the proposed new pipe routing. Nine jurisdictional wetlands (a total of 0.86 acres) will be temporarily impacted along with 13 jurisdictional streams crossings totaling 4,847 sq. feet (0.11 acres impacted) as described in the MACTEC Report and shown on Figure 4-1. Temporary side casings of the excavated material will not remain in waters of the United States for more than one month.

On June 14, 2007, the Department of the Army Corps of Engineers issued a letter (2007-353-JC) allowing the installation of the new discharge pipe by trenching excavation within waters of the US for individual crossings in 19 locations under nationwide permit (NWP) No.12 provided that all conditions of Notice 72 FR 11092 are met. (NWP is valid for two years from the date of this letter, i.e. June 14, 2009.) In addition, General Condition 26 requires AmerenUE to sign and submit a Compliance Certification upon completion of the project. Additional requirements include, *"Wetland sites temporarily impacted by the authorized work must be allowed to naturally revegetate. No maintenance clearing or herbicide sprays are authorized in any waters of the United States by this verification. Temporary fills must be removed by completion of the work."* Should any project plans change, the US Army Corps of Engineers Office must be contacted for another permit determination.

The Missouri Department of Natural Resources, - Historic Preservation Program Office (Judith Deel) has been notified in writing of the proposed discharge line replacement. Concurrence has been requested (Ameren ES&H Letter dated 5/3/07). A response has been received which indicates a resurvey is required for the lower portion of the project area where Logan Creek enters the river valley (letter from the Missouri DNR dated May 17, 2007). The need for this survey arises from questions concerning the reliability of the studies conducted during the 1970's and 1980's. It is estimated that approximately 2 miles will need to be surveyed with some deep trenching via backhoe to verify no cultural resources exist in this area. A meeting with Missouri DNR was also conducted on June 13, 2007 where it was agreed that work could begin on other portions of the discharge line from the plant down to Logan Creek while an additional survey is being completed of the 2-mile section.

A Heritage Review Report was received from the Missouri Department of Conservation on 5/15/07 providing suggestions for species/habitats of the area relating to this modification. This document should be followed.

Approximately 150 acres of land will be disturbed during construction of the new plant discharge line. This requires that a Land Disturbance Permit be obtained prior to beginning construction as more than one acre of land will be disturbed. Construction is currently scheduled to begin on July 16. 2007 and should be completed within one year. A formal Storm Water Pollution Prevention Plan for the Construction Activities Associated with the Ameren Callaway Discharge Line Project, along with a Best Management Practices Plan, has been submitted to the Missouri DNR Northwest Regional Office (Burns & McDonnell Project Number 43749 dated May 2007). This plan was designed to control soil erosion, to prevent sedimentation to the maximum extent practical, and to limit on-site pollutants from leaving the site and/or entering waters of the State of Missouri during the construction period. A Land Disturbance Permit (#MO-R109AJ8) has been received from the Missouri DNR in a letter dated June 29, 2007. All construction activities must be completed in accordance with this Land Disturbance Permit. Following the installation of the new cooling tower blowdown/discharge line, the disturbed areas will be graded and stabilized by reseeding or coverings to return these areas to pre-construction conditions. Upon completion of the final stabilization work, a Form H will be completed and submitted to the Missouri Department of Natural Resources (DNR).

3) Environmental Evaluation

Does the procedure, procedure revision or change, or modification to which this evaluation is applicable represent:

(3.1) Yes ☒ No ☐ A change to the plant as described in the Environmental Report (ER) or the Final Environmental Statement-Operating License Stage (FES-OL)?

(3.2) Yes ☐ No ☒ A change to procedures as described in the ER or FES-OL?

(3.3) Yes ☐ No ☒ A test or experiment not evaluated in the ER or FES-OL?

(3.4) Yes ☒ No ☐ Additional construction not described in the ER or FES-OL?

(3.5) Yes ☐ No ☒ A change to the Environmental Protection Plan? **(OL 0025 5.03)**

(3.6) Yes ☐ No ☒ A modification of, addition to, or violation of the NPDES Permit?

(3.7) Yes ☐ No ☒ A change to the facility's potential for the discharge of oil into or upon the navigable waters of the U.S.?

(3.8) Yes ☐ No ☒ A modification of, addition to, or violation of the Part 70 Air Operating Permit?
(COMN 43426, COMN 43432)

(3.9) Yes ☐ No ☒ A process or activity that utilizes, produces or involves a substance(s) listed in 40 CFR 68.130 for Accidental Release Prevention?

If one or more of the above questions is answered "Yes", further evaluation is required (i.e. continue on to Section 4.0, etc.) If all of the questions above are answered "No," no further evaluation is required and the Responsible Engineer, Qualified Reviewer and Superintendent, Licensing may sign (on page 3) at this time.

4) Additional Evaluation

(4.1) Yes ☐ No ☒ Will there be a significant increase in any adverse environmental impact previously evaluated in the ER or FES-OL as modified by supplements to the FES-OL or environmental impact appraisals?

(4.2) Yes ☐ No ☒ Will there be a significant change in effluents or power level (in accordance with 10 CFR Parts 51.20, 51.21, and 51.22)?

(4.3) Yes ☐ No ☒ Will there be significant adverse environmental impact not previously reviewed and evaluated in the ER or FES-OL as modified by supplements to the FES-OL or environmental impact appraisals?

(4.4) Yes ☐ No ☒ Will the change involve a land altering activity which could adversely affect a cultural resource as identified in "A Cultural Resources Management Plan for Residual Lands at the Union Electric Company Nuclear Power Plant, Callaway County, Missouri"?

(4.5) Yes ☒ No ☐ Will this change involve an activity in which land is disturbed and stormwater runoff from the activity will be discharged through a point source to waters of the state?

(4.6) Yes ☐ No ☒ Will there be a discharge of any pollutant not authorized by the NPDES Permit or more frequently than or at a level in excess of that authorized by the Permit?

(4.7) Yes ☐ No ☒ Will there be any facility expansions, production increases, or process modifications which will result in new, different, or increased discharges of pollutants?

(4.8) Yes ☐ No ☒ Will there be any changes which could or will result in the discharge of oil into or upon the navigable waters of the U.S.?

(4.9) Yes ☐ No ☒ Will there be any substance(s) used in the process greater than the threshold quantity for Accidental Release Prevention listed in 40 CFR 68.130?

Based on the responses to the questions in Sections 3 and 4 above, complete Sections 5 or 6 and Section 7, as applicable. The basis for the Section 3 and 4 answers, as needed, should be provided below:

Basis for answers provided above:

Basis for response to 4.1 and 4.3
As part of this evaluation for MP 07-0012, both the Callaway Plant ER and FES-OL were reviewed for any previously evaluated adverse environmental impacts and any adverse environmental impacts not previously evaluated. This modification replaces the existing plant discharge line and does not change any plant liquid effluents or the concentration of effluents released. All NPDES Outfalls are sampled/analyzed for pollutants to meet the requirements prior to entering the combined plant discharge pipe. Although the estimated velocity may be somewhat reduced for the new larger discharge pipe to be installed (new pipe designed for two units), it will not significantly impact the mixing of plant effluents. The USACE and the Missouri DNR have reviewed and approved this new design. No issues were identified during this review. Installation of this new discharge pipe will not adversely impact the environment as the construction will be completed as agreed upon by Callaway Plant Engineering, the USACE and the Missouri DNR.

Basis for response to 4.2
This modification to replace the existing plant discharge piping has no effect on effluents or power level in accordance with 10 CFR 51.20, 51.21 and 51.22.

Basis for response to 4.4
The new discharge pipe will be located within approximately 20 feet of the existing discharge line. This modification will involve considerable land disturbance (approximately 150 acres) as the piping to be installed is approximately 6 miles in length beginning at the circ and service water pump house and connecting to the first valve pit near the Missouri River. The Cultural Resources Management Plan has been reviewed. Initial drawings have also been reviewed by Environmental Services and the Missouri DNR-Historic Preservation Program Office. Although much of this land to be disturbed has been previously surveyed and disturbed, the Missouri DNR (Missouri State Historic

Preservation Office) is requiring a re-survey of approximately 2 miles of the lower section of property in the Missouri River floodplain. The survey will include deep trenching along the discharge line in 12-15 locations. This resurvey must be completed prior to construction in this area below Logan Creek. The archaeological survey report for this area must be submitted to the Missouri State Historic Preservation Office when completed to allow DNR to complete their review. Construction in this area should not begin until approval is obtained from the Missouri DNR – Historic Preservation Program Office.

Basis for response to 4.5
As described above. the installation of the new plant discharge piping will require a considerable amount of excavation activities to be performed. Callaway Plant has applied for a Missouri Storm Water General Permit for this project. Burns & McDonnell Engineering, Inc. prepared a permit application and formal Storm Water Pollution Prevention Plan with appropriate Best Management Practices for submittal to the Missouri DNR Northwest Regional Office. The Land Disturbance Permit Application was completed and submitted to the Missouri DNR on 5/9/07. A letter transmitting the Missouri State Operating Permit (#MO-R109AJ8) and authorization for land disturbance activities for Callaway Plant was received from the Missouri DNR dated 7/2/07 allowing construction to begin. This Permit requires the Storm Water Pollution Prevention Plan and Best Management Practices document to be followed during all construction activities. Following the completion of all work and upon restoring all disturbed land to pre-construction conditions, a Form H must be completed and submitted to the Missouri DNR.

Basis for response to 4.6
Construction/installation of this new discharge pipe will not produce any pollutant discharges not authorized by the NPDES Permit or more frequently than, or at a level in excess of that authorized by the Permit. As with the existing discharge point, Callaway NPDES Permitted Outfalls are sampled individually and meet all permit requirements for impurities prior to entering the combined plant discharge/cooling tower blowdown pipe.

Basis for response to 4.7
Completion of Modification 07-0012 will not result in a new, different or increased discharge of pollutants. This modification replaces the current discharge piping with a new improved design discharge pipe that will accommodate a second unit should Ameren decide to proceed with construction of an additional unit.

Basis for response to 4.8
Installation of the new plant discharge pipe will not create an oil waste stream that could be released to the environment. Petroleum use by facility construction equipment will be controlled and contained to accepted equipment standards.

Basis for response to 4.9
Installation of this new discharge pipe will not employ any of the substances described in 40 CFR 68.130.

5) The implementation of this procedure, procedure change, or plant modification does not constitute an Unreviewed Environmental Question as explained below: **(OL O025 3.01)**

(5.1) An adverse environmental impact previously evaluated in the ER or FES-OL as modified by supplements to the FES-OL or environmental impact appraisals is not significantly increased due to this change because:

See the above Section 4 responses and bases.

(5.2) There will be no significant adverse environmental impact not previously reviewed and evaluated in the ER or FES-OL as modified by supplements to the FES-OL or environmental impact appraisals because:

See the above Section 4 responses and bases.

(5.3) There is no possibility for the discharge of oil into or upon the navigable waters of the U.S. because:

This modification does not involve the use or discharge of oil. Petroleum use by facility construction equipment will be controlled and contained to accepted equipment standards.

6) Implementation of this procedure, procedure change, or plant modification does not constitute an Unreviewed Environmental Question nor requires a change to the EPP, and NRC approval SHALL not be obtained prior to implementation as explained below: **(OL O025 3.01 & OL O025 5.03)**

This modification to install a new plant discharge pipe within approximately 20 feet of the existing pipe does not constitute an Unreviewed Environmental Question as explained above; therefore NRC approval is not required. See Section 4 responses and bases.

7) The implementation of this procedure, procedure change, or modification does require notification of the Missouri Department of Natural Resources for a Land Disturbance Permit and other Permits and approvals as described below:

The USACE was contacted to obtain the required construction permits and approvals for construction of the new discharge line. Missouri DNR was also contacted in writing to apply for a Land Disturbance Permit. In addition Missouri DNR – Historical Preservation Program Office has been contacted to determine if additional surveys are required prior to construction. This office has required that a 2-mile section the flood plane area below Logan Creek be resurveyed to include deep testing due to the potential for deeply buried cultural resources. This resurvey will be completed and submitted to the Historical Preservation Program Office for approval prior to beginning construction in this river valley area. All other required permits and approvals have been obtained to allow construction for this modification to begin. See Section 4 above for complete details.

8) Gail P. Gary 2119 — Responsible Engineer — 7-13-07 — Date

9) [signature] 2740 — Qualified Reviewer — 7-13-2007 — Date

10) C. B. Elwood for S.A. Maglio — Superintendent, Licensing — 7-13-07 — Date

GUIDELINES FOR COMPLETION OF FINAL ENVIRONMENTAL EVALUATIONS - SECTION 3

Specific Guidelines

To aid in understanding the intent of some of the questions that must be answered when performing a FEE, the following guidelines are provided.

(3.1) Change to the plant as described in the ER or FES-OL

A change to the plant as described in the ER or FES-OL should be interpreted as any change to plant systems, structures, components, or site features that deviates from the ER or FES-OL description, or representation. This includes drawings, illustrations, schematic representations, environmental analysis assumptions, as well as test descriptions.
It is important to note that changes to site features may also be considered to be a change to the plant as described in the ER or FES-OL. If there is any doubt as to whether the change being evaluated represents a change to the plant as described in the ER or FES-OL, the answer to this question should be "Yes."

(3.2) Change to procedures as described in the ER or FES-OL

A change to the procedures as described in the ER or FES-OL should be interpreted as any change to a procedure that is specifically, as opposed to generically, referenced in the ER or FES-OL or which is implicitly referred to in the ER or FES-OL as an activity or administrative control that SHALL be followed. This includes emergency plan procedural-type commitments and modes and sequences of plant operation described in the ER or FES-OL. The following is a hypothetical example of a procedural change that should be considered to be a change to procedures as described in the ER or FES-OL:

> A change is proposed to a procedure that modifies calibration frequency of meteorological instrumentation. Although the procedure itself is not specifically referenced in the ER, it does modify a commitment made in the ER for calibration at 3-month intervals. This procedure change should be considered to be a change to procedures as described in the ER or FES-OL because it affects administrative controls described in the ER.

(3.3) Test or Experiment not Described in the ER or FES-OL

A test or experiment not described in the ER or FES-OL is any test or temporary procedure that directs tests or other activities of an experimental nature. This includes surveillance tests, calibration procedures, one time only trouble-shooting procedures, etc.

(3.4) Additional Construction not Described in the ER or FES-OL

This applies to any additional construction activities such as additional parking lots, buildings, holding ponds, etc., that were not described and evaluated in the ER or FES-OL.

(3.5) A Change to the Environmental Protection Plan (OL O025 5.03)

This applies to any change to the Environmental Protection Plan, regardless of the apparent effect of the change.

(3.6) A Modification of, Addition to, or Violation of the NPDES Permit

This applies to any changes that could affect the NPDES Permit including modifications to systems, setpoints, procedures, and chemistry limits.

(3.7) A Change to the Facility's Potential for Discharge of Oil on Navigable Waters (COMN 42427)

This question applies to 40 CFR 112.5 and to any change that could affect the Spill Prevention Control and Countermeasure Plan as detailed in **APA-ZZ-00811.**