UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

July 1, 2014

Mr. Fadi Diya
Senior Vice President and
Chief Nuclear Officer
Union Electric Company
P.O. Box 620
Fulton, MO 65251

SUBJECT: CALLAWAY PLANT, UNIT 1 - ISSUANCE OF AMENDMENT RE: ADOPT TECHNICAL SPECIFICATIONS TASK FORCE (TSTF) TRAVELER TSTF-522, REVISION 0, "REVISE VENTILATION SYSTEM SURVEILLANCE REQUIREMENTS TO OPERATE FOR 10 HOURS PER MONTH" (TAC NO. MF2806)

Dear Mr. Diya:

The U.S. Nuclear Regulatory Commission (the Commission) has issued the enclosed Amendment No. 209 to Facility Operating License No. NPF-30 for the Callaway Plant, Unit 1. The amendment consists of changes to the Technical Specifications (TSs) in response to your application dated September 26, 2013.

The amendment revises TS Surveillance Requirement (SR) 3.7.10.1 and SR 3.7.13.1 to reduce the required run time for periodic operation of the control room pressurization system filter trains and emergency exhaust system filter trains, with heaters on, from 10 hours to 15 minutes. The amendment is consistent with plant-specific options provided in the NRC's model safety evaluation in Technical Specifications Task Force (TSTF) Traveler TSTF-522, Revision 0, "Revise Ventilation System Surveillance Requirements to Operate for 10 hours per Month," as part of the consolidated line item improvement process.

A copy of the related Safety Evaluation is also enclosed. The Notice of Issuance will be included in the Commission's next biweekly *Federal Register* notice.

Sincerely,

CFLyon

Carl F. Lyon, Project Manager
Plant Licensing Branch IV-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-483

Enclosures:
1. Amendment No. 209 to NPF-30
2. Safety Evaluation

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

UNION ELECTRIC COMPANY

CALLAWAY PLANT, UNIT 1

DOCKET NO. 50-483

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 209
License No. NPF-30

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment by Union Electric Company (UE, the licensee), dated September 26, 2013, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's regulations set forth in 10 CFR Chapter I;

   B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;

   C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;

   D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and

   E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and Paragraph 2.C.(2) of Facility Operating License No. NPF-30 is hereby amended to read as follows:

(2) Technical Specifications and Environmental Protection Plan*

The Technical Specifications contained in Appendix A, as revised through Amendment No. 209, and the Environmental Protection Plan contained in Appendix B, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. This amendment is effective as of its date of issuance, and shall be implemented within 90 days of the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Michael T. Markley, Chief
Plant Licensing Branch IV-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Facility Operating
License No. NPF-30 and
Technical Specifications

Date of Issuance: July 1, 2014

ATTACHMENT TO LICENSE AMENDMENT NO. 209

FACILITY OPERATING LICENSE NO. NPF-30

DOCKET NO. 50-483

Replace the following pages of the Facility Operating License No. NPF-30 and Appendix A, Technical Specifications, with the attached revised pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

Facility Operating License

REMOVE	INSERT
-3-	-3-

Technical Specifications

REMOVE	INSERT
3.7-31	3.7-31
3.7-38	3.7-38

(4) UE, pursuant to the Act and 10 CFR Parts 30, 40 and 70, to receive, possess, and use in amounts as required any byproduct, source of special nuclear material without restriction to chemical or physical form, for sample analysis or instrument calibration or associated with radioactive apparatus or components; and

(5) UE, pursuant to the Act and 10 CFR Parts 30, 40 and 70, to possess, but not separate, such byproduct and special nuclear materials as may be produced by the operation of the facility.

C. This license shall be deemed to contain and is subject to the conditions specified in the Commission's regulations set forth in 10 CFR Chapter I and is subject to all applicable provisions of the Act and to the rules, regulations, and orders of the Commission now or hereafter in effect; and is subject to the additional conditions specified or incorporated below:

(1) Maximum Power Level

UE is authorized to operate the facility at reactor core power levels not in excess of 3565 megawatts thermal (100% power) in accordance with the conditions specified herein.

(2) Technical Specifications and Environmental Protection Plan*

The Technical Specifications contained in Appendix A, as revised through Amendment No. 209 and the Environmental Protection Plan contained in Appendix B, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

(3) Environmental Qualification (Section 3.11, SSER #3)**

Deleted per Amendment No. 169.

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* Amendments 133, 134, & 135 were effective as of April 30, 2000 however these amendments were implemented on April 1, 2000.

** The parenthetical notation following the title of many license conditions denotes the section of the Safety Evaluation Report and/or its supplements wherein the license condition is discussed.

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.7.10.1	Operate each CREVS train pressurization filter unit for ≥ 15 continuous minutes with the heaters operating and each CREVS train filtration filter unit for ≥ 15 continuous minutes.	In accordance with the Surveillance Frequency Control Program
SR 3.7.10.2	Perform required CREVS filter testing in accordance with the Ventilation Filter Testing Program (VFTP).	In accordance with the VFTP
SR 3.7.10.3	Verify each CREVS train actuates on an actual or simulated actuation signal.	In accordance with the Surveillance Frequency Control Program
SR 3.7.10.4	Perform required unfiltered air inleakage testing of the CRE and CBE boundaries in accordance with the Control Room Envelope Habitability Program.	In accordance with the Control Room Envelope Habitability Program

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.7.13.1	Operate each EES train for ≥ 15 continuous minutes with the heaters operating.	In accordance with the Surveillance Frequency Control Program
SR 3.7.13.2	Perform required EES filter testing in accordance with the Ventilation Filter Testing Program (VFTP).	In accordance with the VFTP
SR 3.7.13.3	Verify each EES train actuates on an actual or simulated actuation signal.	In accordance with the Surveillance Frequency Control Program
SR 3.7.13.4	Verify one EES train can maintain a negative pressure ≥ 0.25 inches water gauge with respect to atmospheric pressure in the auxiliary building during the SIS mode of operation.	In accordance with the Surveillance Frequency Control Program
SR 3.7.13.5	Verify one EES train can maintain a negative pressure ≥ 0.25 inches water gauge with respect to atmospheric pressure in the fuel building during the FBVIS mode of operation.	In accordance with the Surveillance Frequency Control Program

UNITED STATES
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WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 209 TO

FACILITY OPERATING LICENSE NO. NPF-30

UNION ELECTRIC COMPANY

CALLAWAY PLANT, UNIT 1

DOCKET NO. 50-483

1.0 INTRODUCTION

By letter dated September 26, 2013 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML13270A043), Union Electric Company (dba Ameren Missouri, the licensee), submitted a request to revise the Technical Specifications (TSs) for the Callaway Plant, Unit 1 (Callaway). Specifically, the licensee requested to adopt U.S. Nuclear Regulatory Commission (NRC)-approved Technical Specifications Task Force (TSTF) Traveler TSTF-522, Revision 0, "Revise Ventilation System Surveillance Requirements to Operate for 10 hours per Month" (ADAMS Accession No. ML100890316), dated March 30, 2010.

The proposed change would revise TS Surveillance Requirements (SRs), which currently require operating each of the pressurization filter units of the Control Room Emergency Ventilation System (CREVS) trains and each Emergency Exhaust System (EES) train for at least 10 continuous hours, with the heaters operating at a frequency of 31 days. The SRs would be changed to require at least 15 continuous minutes of system operation, with the heaters operating at a frequency of 31 days.

Specifically, the licensee proposes to change TS 3.7.10, "Control Room Emergency Ventilation System (CREVS)," and TS 3.7.13, "Emergency Exhaust System (EES)." In particular, SR 3.7.10.1 and SR 3.7.13.1, which currently require operating the respective systems for at least 10 continuous hours with heaters operating at a frequency of 31 days, would be changed to require at least 15 continuous minutes of ventilation system operation at a frequency of 31 days.

The licensee stated that the license amendment request is consistent with NRC-approved TSTF-522. The availability of this TS improvement was announced in the *Federal Register* on September 20, 2012 (77 FR 58421), as part of the consolidated line item improvement process.

2.0 REGULATORY EVALUATION

One of the reasons air filtration and adsorption systems are required at nuclear power plants is to lower the concentration of airborne radioactive material that may be released from the site to the environment due to a design basis event. Lowering the concentration of airborne radioactive materials can mitigate doses to plant operators and members of the public in the event of a design basis event. A typical system consists of ventilation ductwork, fans, dampers, valves, instrumentation, prefilters or demisters, high-efficiency particulate air (HEPA) filters, heaters, and activated charcoal adsorbers. These systems are tested by operating the systems and monitoring the response of the overall system as well as individual components. Laboratory tests of charcoal adsorbers are also performed to ensure the charcoal adsorbs an acceptable amount of radioactive gasses.

Current testing requirements for the air filtration and adsorption systems state that the systems should be operated for at least 10 continuous hours with heaters operating at a frequency of 31 days. These requirements are based on original NRC staff guidance for testing air filtration and adsorption systems that has been superseded. The current NRC staff guidance states that at least 15 continuous minutes of ventilation system operation with heaters operating every 31 days is acceptable for those plants that test ventilation system adsorption at a relative humidity of less than 95 percent.

The licensee proposed revising its SRs, which currently require operating the ventilation systems for at least 10 continuous hours with the heaters operating at a frequency of 31 days, to require at least 15 continuous minutes of ventilation system operation at a frequency of 31 days.

The regulatory requirements for the design and testing of these systems are contained in Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.67, "Accident source term," and Part 100, "Reactor Site Criteria," as well as 10 CFR Part 50, Appendix A, "General Design Criteria for Nuclear Power Plants," General Design Criteria 19, 41, 42, 43, and 61.

NRC Regulatory Guide (RG) 1.52, Revision 2, "Design, Testing, and Maintenance Criteria for Post Accident Engineered-Safety-Feature Atmosphere Cleanup System Air Filtration and Adsorption Units of Light-Water-Cooled Nuclear Power Plants" (ADAMS Accession No. ML003740139) was published in March 1978. RG 1.52, Revision 2 provided guidance and criteria acceptable to the NRC staff for licensees to implement the regulations in 10 CFR related to air filtration and adsorption systems.

Regulatory Position 4.d of RG 1.52, Revision 2 states that

> Each ESF [engineered safety feature] atmosphere cleanup train should be operated at least 10 hours per month, with the heaters on (if so equipped), in order to reduce the buildup of moisture on the adsorbers and HEPA filters.

The purpose of this position is to minimize the moisture content in the system and thereby enhance efficiency in the event the system is called upon to perform its design basis function. Testing requirements for air filtration and adsorption systems currently require operating the heaters in the respective ventilation and filtering systems for at least 10 continuous hours every

31 days. The current Standard TS (STS) Bases explain that operation of heaters for 10 hours would eliminate moisture on the charcoal adsorbers and HEPA filters.

Following subsequent industry experience and testing, the NRC staff learned that 10 continuous hours of system operation would dry out the charcoal adsorber for a brief period of time but, following heater de-energization, the level of moisture accumulation in adsorbers would rapidly return to the pre-test level. The NRC staff found this information persuasive and subsequently issued NRC Generic Letter (GL) 99-02: "Laboratory Testing of Nuclear-Grade Activated Charcoal," dated June 3, 1999 (ADAMS Accession No. ML082350935 and errata sheet dated August 23, 1999, at ADAMS Accession No. ML031110094). GL 99-02 requested licensees to confirm that their charcoal testing protocols accurately reflected the adsorber gaseous activity capture capability. GL 99-02 also requested licensees to account for the effects of moisture accumulation in adsorbers.

As a result, the NRC staff updated RG 1.52 in June 2001 to include the new information (ADAMS Accession No. ML011710176). RG 1.52, Revision 3, Regulatory Position 6.1 states, that

> Each ESF atmosphere cleanup train should be operated continuously for at least 15 minutes each month, with the heaters on (if so equipped), to justify the operability of the system and all its components.

One of the reasons for the previous 10-hour requirement for ventilation system operation with heaters operating was to minimize the effects of moisture on the adsorber's ability to capture gaseous activity. However, these effects are already accounted for in the Ventilation Filter Testing Program (VFTP). Callaway TS 5.5.11, "Ventilation Filter Testing Program (VFTP)," requires testing charcoal adsorbers in a manner to account for the effects of moisture on the adsorber's ability to capture gaseous activity. Therefore, the licensee proposed to remove the 10-hour requirement for ventilation system operation with heaters operating from SR 3.7.10.1 and SR 3.7.13.1.

The NRC's regulatory requirements related to the content of the TS are contained in 10 CFR 50.36. The regulations at 10 CFR 50.36 require that the TS include items in the following categories: (1) safety limits, limiting safety system settings, and limiting control settings; (2) limiting conditions for operation (LCOs); (3) SRs; (4) design features; and (5) administrative controls. SRs are requirements relating to test, calibration, or inspection to assure that the necessary quality of systems and components is maintained, that facility operation will be within safety limits, and that the LCOs will be met.

The NRC's guidance for the format and content of the STS applicable to Callaway can be found in NUREG-1431, "Standard Technical Specifications - Westinghouse Plants."

3.0 TECHNICAL EVALUATION

3.1 Proposed TS Changes

Current SR 3.7.10.1 states:

> Operate each CREVS train pressurization filter unit for ≥ 10 continuous hours with the heaters operating and each CREVS train filtration filter unit for ≥ 15 minutes.

Revised SR 3.7.10.1 would state:

> Operate each CREVS train pressurization filter unit for ≥ 15 continuous minutes with the heaters operating and each CREVS train filtration filter unit for ≥ 15 continuous minutes.

Current SR 3.7.13.1 states:

> Operate each EES train for ≥ 10 continuous hours with the heaters operating.

Revised SR 3.7.13.1 would state:

> Operate each EES train for ≥ 15 continuous minutes with the heaters operating.

3.2 NRC Staff Evaluation

The NRC staff evaluated the licensee's proposed changes against the applicable regulatory guidance in RG 1.52, Revision 3, guidance in the STS as modified by TSTF-522, and the regulatory requirements of 10 CFR 50.36.

The NRC staff evaluated the licensee's proposed changes against the applicable regulatory guidance in RG 1.52, Revision 3, which states that each ESF atmosphere cleanup train should be operated continuously for at least 15 minutes with heaters on. The proposed change would require at least 15 minutes of CREVS and EES operation with the heaters operating. Therefore, the NRC staff concludes that the proposed changes are consistent with the guidance in RG 1.52, Revision 3.

The NRC staff evaluated the licensee's proposed changes against the applicable regulatory guidance in the STS, as modified by TSTF-522. The proposed changes adopt the TS format and content, to the extent practicable, contained in the changes made to NUREG-1431, "Standard Technical Specifications - Westinghouse Plants," by TSTF-522. Therefore, the NRC staff concludes that the proposed changes are consistent with guidance in the STS, as modified by TSTF-522.

The NRC staff compared the proposed changes to the existing SRs, as well as the regulatory requirements of 10 CFR 50.36. The existing SRs provide assurance that the necessary quality of ventilation systems and components will be maintained and that the LCOs will be met. The proposed changes reduce the amount of required system operational time from 10 hours to

15 minutes. The 10-hour operational requirement for heaters was based on using the SRs to eliminate moisture in the adsorbers and thus ensure that the adsorbers would capture gaseous activity. As discussed in Section 2.0 of this safety evaluation, the effects of moisture on the adsorber's ability to capture gaseous activity are now accounted for in the licensee's VFTP. Since the SRs are no longer relied upon to ensure that the effects of moisture on the adsorber's ability to capture gaseous activity are accounted for, the 10-hour heater operational requirement is unnecessary. The NRC staff found that reducing the required minimum system operation time to 15 minutes, consistent with RG 1.52, Revision 3, in conjunction with the VFTP, is sufficient to justify operability of the system and all its components. The NRC staff concludes that the proposed SRs meet the regulatory requirements of 10 CFR 50.36 because they provide assurance that the necessary quality of ventilation systems and components will be maintained and that the LCOs will be met. Therefore, the NRC staff concludes that the proposed changes are acceptable.

The regulation at 10 CFR 50.36 states: "A summary statement of the bases or reasons for such specifications ... shall also be included in the application, but shall not become part of the technical specifications." The licensee may make changes to the TS Bases without prior NRC staff review and approval in accordance with TS 5.5.14, "Technical Specifications (TS) Bases Control Program." Accordingly, along with the proposed TS changes, the licensee also submitted TS Bases changes corresponding to the proposed TS changes. The NRC staff determined that these TS Bases changes are consistent with the proposed TS changes and provide the purpose for each requirement in the specification consistent with the Commission's "Final Policy Statement on Technical Specifications Improvements for Nuclear Power Reactors," dated July 22, 1993 (58 FR 39132).

4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Missouri State official was notified of the proposed issuance of the amendment. The State official had no comments.

5.0 ENVIRONMENTAL CONSIDERATION

The amendment changes requirements with respect to the installation or use of facility components located within the restricted area as defined in 10 CFR Part 20 or changes to surveillance requirements. The NRC staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendment involves no significant hazards consideration, and there has been no public comment on such finding published in the *Federal Register* on January 21, 2014 (79 FR 3418). Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendment.

6.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) there is reasonable assurance that such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: M. Hamm, NRR/DSS/STSB

Date: July 1, 2014

A copy of the related Safety Evaluation is also enclosed. The Notice of Issuance will be included in the Commission's next biweekly *Federal Register* notice.

Sincerely,

/RA/

Carl F. Lyon, Project Manager
Plant Licensing Branch IV-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-483

Enclosures:
1. Amendment No. 209 to NPF-30
2. Safety Evaluation

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ADAMS Accession No.: ML14175A390 *memo dated June 4, 2014

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