



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

June 29, 2010

Mr. Adam C. Heflin
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: ELIMINATION OF TECHNICAL SPECIFICATION REQUIREMENTS FOR HYDROGEN RECOMBINERS AND MONITORS USING THE CONSOLIDATED LINE ITEM IMPROVEMENT PROCESS (TAC NO. ME1720)

Dear Mr. Heflin:

The U.S. Nuclear Regulatory Commission (NRC) has issued the enclosed Amendment No. 199 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 July 10, 2009 (ULNRC-05627).

The amendment deletes the TS requirements for the containment hydrogen recombiners and relaxed the requirements for hydrogen and oxygen monitoring. The TS changes would support implementation of the revisions to Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.44, "Combustible gas control for nuclear power reactors," that became effective on October 16, 2003. The changes are consistent with Revision 1 of the NRC-approved Industry/Technical Specification Task Force (TSTF) Standard Technical Specification Change Traveler, TSTF-447, "Elimination of Hydrogen Recombiners and Change to Hydrogen and Oxygen Monitors." This operating license improvement was made available by the NRC on September 25, 2003 (68 FR 55416), as part of the consolidated line item improvement process. In addition, the amendment corrected four typographical errors in the TSs.

A. Heflin

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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,



Mohan C. Thadani, Senior Project Manager
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-483

Enclosures:

1. Amendment No. 199 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. 199
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 July 10, 2009, 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.

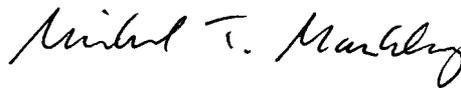
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and Paragraph 2.C.(2) of Facility Operating License No. NPF-30 is hereby amended to read as follows:

- (2) Technical Specifications and Environmental Protection Plan*

The Technical Specifications contained in Appendix A, as revised through Amendment No. 199 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
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: June 29, 2010

ATTACHMENT TO LICENSE AMENDMENT NO. 199

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

-3-

INSERT

-3-

Technical Specifications

REMOVE

3 (Table of Contents)

3.3-50

3.3-51

3.3-53

3.6-22

3.6-23

3.7-13

3.8-1

3.8-4

5.0-19

5.0-22

5.0-25

INSERT

3 (Table of Contents)

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3.3-51

3.3.53

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3.7-13

3.8-1

3.8-4

5.0-19

5.0-22

5.0-25

- (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. 199 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.

* 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.

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ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. One or more Functions with two or more required channels inoperable.	C.1 Restore all but one channel to OPERABLE status.	7 days
D. Required Action and associated Completion Time of Condition C not met.	D.1 Enter the Condition referenced in Table 3.3.3-1 for the channel.	Immediately
E. As required by Required Action D.1 and referenced in Table 3.3.3-1.	E.1 Be in MODE 3.	6 hours
	E.2 Be in MODE 4.	12 hours
F. As required by Required Action D.1 and referenced in Table 3.3.3-1.	F.1 Initiate action in accordance with Specification 5.6.8.	Immediately

SURVEILLANCE REQUIREMENTS

----- NOTE -----
 SR 3.3.3.1 and SR 3.3.3.2 apply to each PAM instrumentation Function in Table 3.3.3-1.

SURVEILLANCE		FREQUENCY
SR 3.3.3.1	Perform CHANNEL CHECK.	31 days
SR 3.3.3.2	----- NOTE ----- Neutron detectors are excluded from CHANNEL CALIBRATION. ----- Perform CHANNEL CALIBRATION.	18 months

Table 3.3.3-1 (page 1 of 2)
Post Accident Monitoring Instrumentation

	FUNCTION	REQUIRED CHANNELS	CONDITION REFERENCED FROM REQUIRED ACTION D.1	
1.	Neutron Flux	2	E	
2.	Reactor Coolant System (RCS) Hot Leg Temperature (Wide Range)	2	E	
3.	RCS Cold Leg Temperature (Wide Range)	2	E	
4.	RCS Pressure (Wide Range)	2	E	
5.	Reactor Vessel Level Indicating System (RVLIS)	2	F	
6.	Containment Normal Sump Water Level	2	E	
7.	Containment Pressure (Normal Range)	2	E	
8.	Steam Line Pressure	2 per steam generator	E	
9.	Containment Radiation Level (High Range)	2	F	
10.	Not Used			
11.	Pressurizer Water Level	2	E	
12.	Steam Generator Water Level (Wide Range)	4	E	
13.	Steam Generator Water Level (Narrow Range)	2 per steam generator	E	

(continued)

Table 3.3.3-1 (page 2 of 2)
Post Accident Monitoring Instrumentation

	FUNCTION	REQUIRED CHANNELS	CONDITION REFERENCED FROM REQUIRED ACTION D.1
14.	Core Exit Temperature - Quadrant 1	2 ^(a)	E
15.	Core Exit Temperature - Quadrant 2	2 ^(a)	E
16.	Core Exit Temperature - Quadrant 3	2 ^(a)	E
17.	Core Exit Temperature - Quadrant 4	2 ^(a)	E
18.	Auxiliary Feedwater Flow Rate	4	E
19.	Refueling Water Storage Tank Level	2	E

(a) A channel consists of two core exit thermocouples (CETs).

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. One or more of the required ASD(s) inoperable because of excessive seat leakage.	D.1 Initiate action to close the associated manual isolation valve(s).	Immediately
	<u>AND</u> D.2 Restore ASD(s) to OPERABLE status.	30 days
E. Required Action and associated Completion Time not met.	E.1 Be in MODE 3.	6 hours
	<u>AND</u> E.2 Be in MODE 4.	12 hours

3.8 ELECTRICAL POWER SYSTEMS

3.8.1 AC Sources - Operating

LCO 3.8.1 The following AC electrical sources shall be OPERABLE:

- a. Two qualified circuits between the offsite transmission network and the onsite Class 1E AC Electrical Power Distribution System; and
- b. Two diesel generators (DGs) capable of supplying the onsite Class 1E power distribution subsystem(s); and
- c. Load Shedder and Emergency Load Sequencer (LSELS) for Train A and Train B.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

----- NOTE -----
LCO 3.0.4.b is not applicable to DGs.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One offsite circuit inoperable.	<p>A.1 Perform SR 3.8.1.1 for OPERABLE offsite circuit.</p> <p><u>AND</u></p> <p>A.2 ----- NOTE ----- In MODES 1, 2, and 3, the turbine driven auxiliary feedwater pump is considered a required redundant feature. -----</p>	<p>1 hour</p> <p><u>AND</u></p> <p>Once per 8 hours thereafter</p> <p style="text-align: right;">(continued)</p>

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>B. One DG inoperable. (continued)</p>	<p>B.4 Restore DG to OPERABLE status.</p>	<p>-----NOTE----- A one-time Completion Time of 14 days is allowed to support planned replacement of ESW 'B' train piping prior to April 30, 2009. ----- 72 hours <u>AND</u> 6 days from discovery of failure to meet LCO</p>
<p>C. Two offsite circuits inoperable.</p>	<p>C.1 ----- NOTE ----- In MODES 1, 2, and 3, the turbine driven auxiliary feedwater pump is considered a required redundant feature. ----- Declare required feature(s) inoperable when its redundant required feature(s) is inoperable. <u>AND</u></p>	<p>12 hours from discovery of Condition C concurrent with inoperability of redundant required features (continued)</p>

5.5 Programs and Manuals

5.5.16 Containment Leakage Rate Testing Program (continued)

2. The visual examination of the steel liner plate inside containment intended to fulfill the requirements of 10 CFR 50, Appendix J, Option B testing, will be performed in accordance with the requirements of and frequency specified by ASME Section XI Code, Subsection IWE, except where relief has been authorized by the NRC.
 3. The unit is excepted from post-modification integrated leakage rate testing requirements associated with steam generator replacement during the Refuel 14 outage (fall of 2005).
 4. The first Type A test performed after the October 26, 1999 Type A test shall be performed no later than October 25, 2014.
- b. The peak calculated containment internal pressure for the design basis loss of coolant accident, P_a , is 48.1 psig.
 - c. The maximum allowable containment leakage rate, L_a , at P_a , shall be 0.20% of the containment air weight per day.
 - d. Leakage rate acceptance criteria are:
 1. Containment leakage rate acceptance criterion is $\leq 1.0 L_a$. During the first unit startup following testing in accordance with this program, the leakage rate acceptance criteria are $< 0.60 L_a$ for the Type B and C tests and $\leq 0.75 L_a$ for Type A tests;
 2. Air lock testing acceptance criteria are:
 - a) Overall air lock leakage rate is $\leq 0.05 L_a$ when tested at $\geq P_a$;
 - b) For each door, leakage rate is $\leq 0.005 L_a$ when pressurized to ≥ 10 psig.
 - e. The provisions of Technical Specification SR 3.0.2 do not apply to the test frequencies in the Containment Leakage Rate Testing Program.
 - f. The provisions of Technical Specification SR 3.0.3 are applicable to the Containment Leakage Rate Testing Program.

(continued)

5.0 ADMINISTRATIVE CONTROLS

5.6 Reporting Requirements

The following reports shall be submitted in accordance with 10 CFR 50.4.

5.6.1 Not Used.

5.6.2 Annual Radiological Environmental Operating Report

The Annual Radiological Environmental Operating Report covering the operation of the unit during the previous calendar year shall be submitted by May 1 of each year. The report shall include summaries, interpretations, and analyses of trends of the results of the radiological environmental monitoring program for the reporting period.

The material provided shall be consistent with the objectives outlined in the Offsite Dose Calculation Manual (ODCM), and in 10 CFR 50, Appendix I, Sections IV.B.2, IV.B.3, and IV.C.

The Annual Radiological Environmental Operating Report shall include the results of analyses of all radiological environmental samples and of all environmental radiation measurements taken during the period pursuant to the locations specified in the table and figures in the ODCM, as well as summarized and tabulated results of these analyses and measurements in a format similar to the table in the Radiological Assessment Branch Technical Position, Revision 1, November 1979. In the event that some individual results are not available for inclusion with the report, the report shall be submitted noting and explaining the reasons for the missing results. The missing data shall be submitted in a supplementary report as soon as possible.

5.6.3 Radioactive Effluent Release Report

The Radioactive Effluent Release Report covering the operation of the unit during the previous year shall be submitted prior to May 1 of each year in accordance with 10 CFR 50.36a. The report shall include a summary of the quantities of radioactive liquid and gaseous effluents and solid waste released from the unit. The material provided shall be consistent with the objectives outlined in the ODCM and Process Control Program and in conformance with 10 CFR 50.36a and 10 CFR Part 50, Appendix I, Section IV.B.1.

5.6.4 Not used.

(continued)

5.6 Reporting Requirements

5.6.6 Reactor Coolant System (RCS) PRESSURE AND TEMPERATURE LIMITS REPORT (PTLR)

- a. RCS pressure and temperature limits for heat up, cooldown, low temperature operation, criticality, hydrostatic testing and PORV lift setting as well as heatup and cooldown rates shall be established and documented in the PTLR for the following:
 - 1. Specification 3.4.3, "RCS Pressure and Temperature (P/T) Limits," and
 - 2. Specification 3.4.12, "Cold Overpressure Mitigation System (COMS)."
- b. The analytical methods used to determine the RCS pressure and temperature and COMS PORV limits shall be those previously reviewed and approved by the NRC, specifically those described in WCAP-14040-NP-A, "Methodology Used to Develop Cold Overpressure Mitigating System Setpoints and RCS Heatup and Cooldown Limit Curves".
- c. The PTLR shall be provided to the NRC upon issuance for each reactor vessel fluence period and for any revision or supplement thereto.

5.6.7 Not used.

5.6.8 PAM Report

When a report is required by Condition B or F of LCO 3.3.3, "Post Accident Monitoring (PAM) Instrumentation," a report shall be submitted within the following 14 days. The report shall outline the preplanned alternate method of monitoring, the cause of the inoperability, and the plans and schedule for restoring the instrumentation channels of the Function to OPERABLE status.

5.6.9 Not used.

(continued)



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 199 TO

FACILITY OPERATING LICENSE NO. NPF-30

UNION ELECTRIC COMPANY

CALLAWAY PLANT, UNIT 1

DOCKET NO. 50-483

1.0 INTRODUCTION

By letter dated July 10, 2009 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML091940542), Union Electric Company (the licensee) submitted a license amendment request regarding the Callaway Plant, Unit 1 Facility Operating License. The proposed amendment would delete the Technical Specification (TS) requirements related to the containment hydrogen recombiners and the hydrogen monitors. The amendment would also correct four typographical errors in the TSs.

The Nuclear Regulatory Commission (NRC) has revised Section 50.44, "Combustible gas control for nuclear power reactors," of Title 10 of the *Code of Federal Regulations* (10 CFR). The amended standards eliminated the requirements for hydrogen recombiners and relaxed the requirements for hydrogen and oxygen monitoring. In letters dated December 17, 2002 (ADAMS Accession No. ML023530110), and May 12, 2003 (ADAMS Accession No. ML031350006), the Nuclear Energy Institute (NEI) Technical Specification Task Force (TSTF) proposed to remove requirements for hydrogen recombiners and hydrogen and oxygen monitors from the standard technical specifications (STS) (NUREGs 1430-1434) on behalf of the industry to incorporate the amended standards. This proposed change is designated TSTF-447, "Elimination of Hydrogen Recombiners and Change to Hydrogen and Oxygen Monitors."

The NRC staff prepared a model safety evaluation (SE) for the elimination of requirements regarding containment hydrogen recombiners and the removal of requirements from the TSs for containment hydrogen and oxygen monitors and solicited public comment as published in the *Federal Register* on August 2, 2002 (67 FR 50374) in accordance with the consolidated line item improvement process (CLIIP). The use of the CLIIP in this matter is intended to help the NRC to efficiently process amendments that propose to remove the hydrogen recombiner and hydrogen and oxygen monitor requirements from the TSs. Licensees of nuclear power reactors to which this model SE applies were informed in the *Federal Register* (68 FR 55416) on

September 25, 2003, that they could request amendments conforming to the model, and, in such requests, should confirm the applicability of this SE to their reactors and provide the requested plant-specific verifications and commitments.

2.0 REGULATORY EVALUATION

Regulatory Issue Summary 2000-06, "Consolidated Line Item Improvement Process for Adopting Standard Technical Specification Changes for Power Reactors" (ADAMS Accession No. ML003693442), was issued on March 20, 2000. The CLIP is intended to improve the efficiency of NRC's licensing processes. This is accomplished by processing proposed changes to the STS in a manner that supports subsequent plant-specific license amendment applications. The CLIP includes an opportunity for the public to comment on proposed changes to the STS following a preliminary assessment by the NRC staff and determination that the change will likely be offered for adoption by licensees. The NRC staff evaluates any comments received for a proposed change to the STS and either reconsiders the change or proceeds with announcing the availability of the change for proposed adoption by licensees. Those licensees opting to apply for the subject change to the TSs are responsible for reviewing the NRC staff's evaluation, referencing the applicable technical justifications, and providing any necessary plant-specific information. Each amendment application made in response to the notice of availability would be processed and noticed with applicable rules and NRC procedures.

The Commission's regulatory requirements related to the content of TS are set forth in 10 CFR 50.36. This regulation requires that the TSs include items in five specific categories. These categories include (1) safety limits, limiting safety system settings and limiting control settings, (2) limiting conditions for operation (LCOS), (3) surveillance requirements, (4) design features, and (5) administrative controls. However, the regulation does not specify the particular TSs to be included in a plant's license.

Additionally, 10 CFR 50.36(c)(2)(ii) sets forth four criteria to be used in determining whether an LCO is required to be included in the TS. These criteria are as follows:

- Criterion 1. Installed instrumentation that is used to detect, and indicate in the control room, a significant abnormal degradation of the reactor coolant pressure boundary.
- Criterion 2. A process variable, design feature, or operating restriction that is an initial condition of a design basis accident or transient analysis that assumes either the failure of or presents a challenge to the integrity of a fission product barrier.
- Criterion 3. A structure, system, or component that is part of the primary success path and which functions or actuates to mitigate a design basis accident or transient that either assumes the failure of or presents a challenge to the integrity of a fission product barrier.
- Criterion 4. A structure, system, or component which operating experience or probabilistic risk assessment has shown to be significant to public health and safety.

Existing LCOs and related surveillances included as TS requirements which satisfy any of the criteria stated above must be retained in the TSs. Those TS requirements which do not satisfy these criteria may be relocated to other licensee-controlled documents.

As part of the rulemaking that revised 10 CFR 50.44, the Commission retained requirements for ensuring a mixed atmosphere, inerting Mark I and II containments, and providing hydrogen control systems capable of accommodating an amount of hydrogen generated from a metal-water reaction involving 75 percent of the fuel cladding surrounding the active fuel region in Mark III and ice condenser containments. The Commission eliminated the design-basis loss-of-coolant accident (LOCA) hydrogen release from 10 CFR 50.44 and consolidated the requirements for hydrogen and oxygen monitoring to 10 CFR 50.44 while relaxing safety classifications and licensee commitments to certain design and qualification criteria. The Commission also relocated without change the hydrogen control requirements in 10 CFR 50.34(f) to 10 CFR 50.44 and the high point vent requirements from 10 CFR 50.44 to 10 CFR 50.46a.

3.0 TECHNICAL EVALUATION

The ways in which the requirements and recommendations for combustible gas control were incorporated into the licensing bases of commercial nuclear power plants varied as a function of when plants were licensed. Plants that were operating at the time of the Three Mile Island (TMI), Unit 2 accident are likely to have been the subject of confirmatory orders that imposed the combustible gas control functions described in NUREG-0737, "Clarification of TMI Action Plan Requirements," dated November 1980 (ADAMS Accession No. ML051400209), as obligations. The issuance of plant-specific amendments adopting the changes of TSTF-447 to remove hydrogen recombiner and hydrogen and oxygen monitoring controls from the TSs, supersede the combustible gas control specific requirements imposed by post-TMI confirmatory orders.

3.1 Hydrogen Recombiners

The revised 10 CFR 50.44 no longer defines a design-basis LOCA hydrogen release, and eliminates requirements for hydrogen control systems to mitigate such a release. The installation of hydrogen recombiners and/or vent and purge systems required by 10 CFR 50.44(b)(3) was intended to address the limited quantity and rate of hydrogen generation that was postulated from a design-basis LOCA. The Commission has found that this hydrogen release is not risk-significant because the design-basis LOCA hydrogen release does not contribute to the conditional probability of a large release up to approximately 24 hours after the onset of core damage. In addition, these systems were ineffective at mitigating hydrogen releases from risk-significant beyond design-basis accidents (DBAs). Therefore, the Commission eliminated the hydrogen release associated with a design-basis LOCA from 10 CFR 50.44 and the associated requirements that necessitated the need for the hydrogen recombiners and the backup hydrogen vent and purge systems. As a result, the NRC staff concludes that requirements related to hydrogen recombiners no longer meet any of the four criteria in 10 CFR 50.36(c)(2)(ii) for retention in the TSs and may be relocated to other licensee-controlled documents for all plants.

Hydrogen recombiners are no longer required by 10 CFR 50.44 and no longer meet the criteria in 10 CFR 50.36(c)(2)(ii). Therefore, removal of the hydrogen recombiner requirements from the Callaway Plant, Unit 1, TSs and relocation to other licensee-controlled documents is acceptable.

3.2 Hydrogen Monitoring Equipment

The regulations in 10 CFR 50.44(b)(1), the STS, and the plant-specific TSs currently contain requirements for monitoring hydrogen. Licensees have also made commitments to design and qualification criteria for hydrogen monitors in Item II.F.1, Attachment 6 of NUREG-0737, "Containment Hydrogen Monitor," and NRC Regulatory Guide (RG) 1.97, Revision 4, "Criteria for Accident Monitoring Instrumentation for Nuclear Power Plants," dated June 2006 (ADAMS Accession No. ML061580448; prior to the issuance of Revision 1, RG 1.97 was entitled, "Instrumentation for Light-Water-Cooled Nuclear Power Plants to Assess Plant and Environs Conditions During and Following an Accident"). The hydrogen monitors are required to assess the degree of core damage during a beyond DBA and confirm that random or deliberate ignition has taken place. If an explosive mixture that could threaten containment integrity exists during a beyond DBA, then other severe accident management strategies, such as purging and/or venting, would be considered to mitigate the consequences. The hydrogen monitors are needed to implement severe accident management strategies.

With the elimination of the design-basis LOCA hydrogen release, hydrogen monitors are no longer required to mitigate DBAs and, therefore, the hydrogen monitors do not meet the definition of a safety-related component as defined in 10 CFR 50.2. RG 1.97 recommends classifying the hydrogen monitors as Category 1. In RG 1.97, Category 1 is intended for key variables that most directly indicate the accomplishment of a safety function for DBA events and, therefore, are items usually addressed within the TSs. As part of the rulemaking to revise 10 CFR 50.44, the Commission found that the hydrogen monitors no longer meet the definition of Category 1 as defined in RG 1.97. The Commission concluded that Category 3, as defined in RG 1.97, is a more appropriate categorization for the hydrogen monitors because the monitors are required to diagnose the course of beyond DBAs. Hydrogen monitoring is not the primary means of indicating a significant abnormal degradation of the reactor coolant pressure boundary. Section 4 of Attachment 2 to SECY-00-0198, "Status Report on Study of Risk-Informed Changes to the Technical Requirements of 10 CFR Part 50 (Option 3) and Recommendations on Risk-Informed Changes to 10 CFR 50.44 (Combustible Gas Control)," dated September 14, 2000 (ADAMS Accession No. ML003747713), found that the hydrogen monitors were not risk-significant. Therefore, the NRC staff concludes that hydrogen monitoring equipment requirements no longer meet any of the four criteria in 10 CFR 50.36(c)(2)(ii) for retention in Callaway's TSs and, therefore, may be relocated to other licensee-controlled documents. However, because the monitors are required to diagnose beyond DBAs, each licensee should verify that it has, and make regulatory commitment to maintain a hydrogen monitoring system, capable of diagnosing beyond DBAs.

The elimination of Post-Accident Sampling System requirements from some plant-specific TSs (and associated CLIIP notices) indicated that during the early phases of an accident, safety-grade hydrogen monitors provide an adequate capability for monitoring containment hydrogen concentration. The NRC staff has subsequently concluded that Category 3 hydrogen monitors also provide an adequate capability for monitoring containment hydrogen

concentration during the early phases of an accident. However, because the monitors are required to diagnose the course of beyond DBAs, each licensee should verify that it has, and make a regulatory commitment to maintain, a hydrogen monitoring system capable of diagnosing beyond DBAs.

The licensee has verified that a hydrogen monitoring system capable of diagnosing beyond DBAs is installed at Callaway Plant, Unit 1, and is making a regulatory commitment to maintain that capability. The hydrogen monitors will be included in the Callaway Plant Final Safety Analysis Report (FSAR) upon implementation of the license amendment. Therefore, the proposed change removing the requirements for hydrogen monitoring equipment from the TSs and placement in the FSAR is acceptable.

The deletion of the requirements for the hydrogen recombiner and hydrogen monitors resulted in deletion of TS Bases content for hydrogen recombiners and monitors. The NRC staff has confirmed that the related changes are appropriate and do not affect the technical requirements.

3.3 Typographical Corrections

The licensee proposed the following typographical corrections:

- Changing CONDITION D of TS 3.7.4, "Atmospheric Steam Dump Valves (ASDs)" from "With one or more of the required ASD(s) inoperable because of excessive seat leakage" to "One or more of the required ASD(s) inoperable because of excessive seat leakage."
- Changing the word "Modes" to "MODES" in REQUIRED ACTIONS A.2 and C.1 of TS 3.8.1, "AC Sources - Operating."
- Changing the word "or" to "of" in paragraph e of TS 5.5.16, "Containment Leakage Rate Testing Program."
- Deleting the period that appears immediately after the phrase "prior to May 1 of each year" in TS 5.6.3, "Radioactive Effluent Release Report."

The NRC staff reviewed the proposed typographical corrections and concludes that they are acceptable because they do not materially change any TS requirements.

4.0 VERIFICATIONS AND COMMITMENTS

As requested by the NRC staff in the notice of availability for this TS improvement, the licensee has addressed the following plant-specific verifications and regulatory commitments.

- 4.1 Each licensee should verify that it has, and make a regulatory commitment to maintain, a hydrogen monitoring system capable of diagnosing beyond DBAs.

In its letter dated July 10, 2009, the licensee verified that it has a hydrogen monitoring system capable of diagnosing beyond DBAs. The licensee has committed in its application to maintain

the hydrogen monitors within its FSAR. The licensee will implement this commitment within 90 days as part of the implementation of the amendment.

- 4.2 For plant designs with an inerted containment, each licensee should verify that it has, and make a regulatory commitment to maintain, an oxygen monitoring system capable of verifying the status of the inert containment.

Commitment 2 is not applicable as Callaway Plant, Unit 1, does not have an inerted containment.

The NRC staff finds that reasonable controls for the implementation and for subsequent evaluation of proposed changes pertaining to the above regulatory commitments are provided by the licensee's administrative processes, including its commitment management program. Should the licensee choose to incorporate a regulatory commitment into the emergency plan, FSAR, or other document with established regulatory controls, the associated regulations would define the appropriate change-control and reporting requirements. The NRC staff has determined that the commitments do not warrant the creation of regulatory requirements which would require prior NRC approval of subsequent changes. The NRC staff has agreed that NEI 99-04, Revision 0, "Guidelines for Managing NRC Commitment Changes," dated July 1999 (ADAMS Accession No. ML003680088), provides reasonable guidance for the control of regulatory commitments made to the NRC staff (see Regulatory Issue Summary 2000-17, "Managing Regulatory Commitments Made by Power Reactor Licensees to the NRC Staff," dated September 21, 2000 (ADAMS Accession No. ML003741774)). The commitments should be controlled in accordance with the industry guidance or comparable criteria employed by a specific licensee. The NRC staff may choose to verify the implementation and maintenance of these commitments in a future inspection or audit.

5.0 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.

6.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. 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 as published in the *Federal Register* on August 25, 2009 (74 FR 42934). 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.

7.0 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) 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

Date: June 29, 2010

A. Heflin

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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/

Mohan C. Thadani, Senior Project Manager
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-483

Enclosures:

1. Amendment No. 199 to NPF-30
2. Safety Evaluation

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ADAMS Accession No. ML101170136

***SE memo dated**

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DATE	6/9/10	6/7/10	8/20/09	--	6/16/10	6/29/10

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