

Mr. Garry L. Randolph
Vice President and Chief Nuclear Officer
Union Electric Company
Post Office Box 620
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May 26, 2000

SUBJECT: CALLAWAY PLANT, UNIT 1 - ISSUANCE OF AMENDMENT RE: MAIN STEAM SAFETY VALVES (MSSVs) (TAC NO. MA8430)

Dear Mr. Randolph:

The Commission has issued the enclosed Amendment No. 136 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 March 6, 2000 (ULNRC-04197).

The amendment revises Limiting Condition for Operation (LCO) 3.7.1, "Main Steam Safety Valves (MSSVs)," in that the maximum allowable reactor power for a given number of operable MSSVs per steam generator is reduced in Table 3.7.1-1, "Operable Main Steam Safety Valves [MSSVs] versus Maximum Allowable Power," and in Required Action A.1 of the TSs. These changes will result in decreasing the setpoint values for the power range neutron flux high channels, which are part of the reactor trip system (RTS) instrumentation in Table 3.3.1-1, "Reactor Trip System Instrumentation," and will result in the reactor operating at a lower power for a given number of operable MSSVs per steam generator. In addition, two format errors in the actions for LCO 3.7.1 are corrected.

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/

Jack Donohew, Senior Project Manager, Section 2
Project Directorate IV & Decommissioning
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-483

Enclosures: 1. Amendment No. 136 to NPF-30
2. Safety Evaluation

cc w/encls: See next page

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Callaway Plant, Unit 1

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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. 136
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 March 6, 2000, 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. 136 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 30 days of the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Stephen Dembek, Chief, Section 2
Project Directorate IV & Decommissioning
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical
Specifications

Date of Issuance: May 26, 2000

ATTACHMENT TO LICENSE AMENDMENT NO. 136

FACILITY OPERATING LICENSE NO. NPF-30

DOCKET NO. 50-483

Replace the following pages of the Appendix A Technical Specifications with the attached revised pages. The revised pages are identified by amendment number and contain vertical lines indicating the areas of change.

REMOVE

3.7-1
3.7-3

INSERT

3.7-1
3.7-3

3.7 PLANT SYSTEMS

3.7.1 Main Steam Safety Valves (MSSVs)

LCO 3.7.1 Five MSSVs per steam generator shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

-----NOTE-----
Separate Condition entry is allowed for each MSSV.

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>A. One or more steam generators with one MSSV inoperable and the Moderator Temperature Coefficient (MTC) zero or negative at all power levels.</p>	<p>A.1 Reduce THERMAL POWER to $\leq 85\%$ RTP.</p>	<p>4 hours</p>
<p>B. One or more steam generators with two or more MSSV's inoperable.</p> <p><u>OR</u></p> <p>One or more steam generators with one MSSV inoperable and the MTC positive at any power level.</p>	<p>B.1 Reduce THERMAL POWER to less than or equal to the Maximum Allowable % RTP specified in Table 3.7.1-1 for the number of OPERABLE MSSVs.</p> <p><u>AND</u></p>	<p>4 hours</p> <p style="text-align: right;">(continued)</p>

Table 3.7.1-1 (page 1 of 1)
OPERABLE Main Steam Safety Valves versus
Maximum Allowable Power

NUMBER OF OPERABLE MSSVs PER STEAM GENERATOR	MAXIMUM ALLOWABLE POWER (% RTP)
4	≤ 85
3	≤ 49
2	≤ 27



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 136 TO FACILITY OPERATING LICENSE NO. NPF-30

UNION ELECTRIC COMPANY

CALLAWAY PLANT, UNIT 1

DOCKET NO. 50-483

1.0 INTRODUCTION

By application dated March 6, 2000, Union Electric Company (the licensee) requested changes to the Technical Specifications (Appendix A to Facility Operating License No. NPF-42) for Callaway Plant, Unit 1 (Callaway). The proposed changes would revise Limiting Condition for Operation (LCO) 3.7.1, "Main Steam Safety Valves (MSSVs)," in that the maximum allowable reactor power for a given number of operable MSSVs per steam generator would be reduced in Table 3.7.1-1, "Operable Main Steam Safety Valves [MSSVs] versus Maximum Allowable Power," and in Required Action A.1 of the TSs. In addition, two format errors in the actions for LCO 3.7.1 are corrected.

2.0 EVALUATION

2.1 Inoperable Main Steam Safety Valves

Table 3.7.1-1 in LCO 3.7.1 specifies the maximum allowable power level for number of inoperable MSSVs per steam generator. The MSSVs provide the overpressure protection for the steam generators in that they will open to relieve pressure in a steam generator if it is too close to the design pressure. The design basis of the MSSVs is to limit the secondary side pressure to ≤ 110 percent of design pressure for any design basis accident or abnormal occurrence.

Because there are five MSSVs on each of the four steam generators for Callaway, if one MSSV on one or more steam generators is inoperable (i.e., five minus one or four operable MSSVs per steam generator for Table 3.7.1-1), the plant is not allowed to be operated at 100 percent of rated thermal power (RTP). The current Table 3.7.1-1 requires that the plant must be operated at $\leq 87\%$ RTP to meet its license and the completion time for the required action of reducing power is that the power must be reduced within 4 hours. If the moderator temperature coefficient (MTC) is zero or negative at all power levels, the trip setpoint for the power range neutron flux high instrumentation channels does not need to be reduced.

The power range neutron flux high instrumentation channel is part of the reactor trip system (RTS) instrumentation. The power range neutron flux high instrumentation is the measure of reactor power and provides the trip for the reactor power being too high. This instrumentation is listed in Table 3.3.1-1, "Reactor Trip System Instrumentation," of the TSs and required to be operable. Lowering the power range neutron flux high setpoint allows the plant to operate with one or more MSSVs inoperable per steam generator.

With only a single inoperable MSSV on one or more steam generators and the MTC is not positive, reducing the power level to the value specified in Action A.1 for LCO 3.7.1 is sufficient to limit the primary side heat generation such that overpressurization of the steam generators is precluded for any reactor coolant system heatup event. The same power level value is given in Table 3.7.1-1

With two or more MSSVs inoperable on one or more steam generators (i.e., less than 4 operable MSSVs per steam generator for Table 3.7.1-1), the current maximum allowed power is 65 percent RTP (for 3 operable MSSVs per steam generator) or 44 percent RTP (for 2 operable MSSVs per steam generator). The TSs do not allow plant operation with only one operable MSSV per steam generator.

There would still be the 4 hours to reduce the reactor power to the maximum allowed power per Table 3.7.1-1; however, the actions for LCO 3.7.1 require that the trip setpoint for power range neutron flux high instrumentation would be reduced to the value in Table 3.7.1-1 within 36 hours.

In its application, the licensee stated that the current values for the maximum allowable RTP in Table 3.7.1-1 of the TSs are not conservative. The licensee explained that Westinghouse in its nuclear safety advisory letter (NSAL) 94-001, "Operation at Reduce Power Levels with Inoperable MSSVs," dated January 20, 1994, identified a concern that the maximum allowable power setpoint values for the number of operable MSSVs per steam generator in the current Table 3.7.1-1 were inadequate. In its letter of July 7, 1999 (SCP-99-129), on revised high neutron flux setpoints with inoperable MSSVs for Callaway, Westinghouse provided the licensee with the proper setpoint values for Callaway based on plant-specific analyses. The setpoint values specified in the letter from Westinghouse are the values proposed by the licensee for Table 3.7.1-1. Westinghouse stated in its letter of July 7, 1999, that the uncertainty associated with the setpoint for the power range neutron flux high had been accounted for in the analyses for Callaway. The licensee referenced both Westinghouse letters in its application dated March 6, 2000.

The proposed allowable values for Table 3.7.1-1 were chosen to ensure that the loss-of-load/turbine trip analyses, that are addressed in Section 15.2 of the Callaway Final Safety Analysis Report (FSAR), are bounding for the cases when not all of the MSSVs are operable. The analyses were done with the LOFTRAN (computer program) transient methodology which is used in other FSAR non-loss-of-coolant accident (non-LOCA) transient analyses. The analyses demonstrate that the maximum RCS and main steam pressure do not exceed 110% of the design pressure.

Based on the proposed allowable values for Table 3.7.1-1 were calculated using plant-specific analyses for Callaway that (1) accounted for the uncertainty associated in the power range neutron flux high setpoint and (2) reduced the current values in the TSs to levels that would preclude SG overpressurization, the staff concludes that the proposed values are acceptable.

In addition to the changes to Table 3.7.1-1, the licensee also proposed reducing the 87 percent RTP to 85 percent RTP in Required Action A.1 of the actions for LCO 3.7.1. This value of RTP is the same value in Table 3.7.1-1 for four operable MSSVs per steam generator, or one inoperable MSSV for one or more steam generators, which is Condition A of the actions for LCO 3.7.1. The proposed 85 percent RTP is the same value that was proposed for Table 3.7.1-1. Therefore, the staff concludes that the proposed 85 percent RTP for required Action A.1 is acceptable.

The licensee also submitted its changes to the Bases of the TSs for LCO 3.7.1. The Westinghouse letter of July 7, 1999, replaced reference 6 as the documentation for the maximum allowable power specified in Table 3.7.1-1, and two incorrect spellings were corrected. The staff notes that the changes being made to the Bases for LCO 3.7.1 by the licensee were consistent with the proposed TS changes.

2.2 Two Format Errors

In its application, the licensee also identified two proposed corrections to the format of the actions for LCO 3.7.1. The proposed corrections are: (1) add a horizontal line to separate Condition A and its required action and completion time from that for Condition B, and (2) move the phrase "(continued)" from below the line to above the line on the lower right-hand side of TS page 3.7-1. Both proposed format changes are editorial in nature, do not alter any requirements in the TSs, and are needed to have the format of the actions for LCO 3.7.1 consistent with the format for the other actions in the TSs. Therefore, the staff concludes that the proposed format changes are acceptable.

3.0 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.

4.0 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 (65 FR 17920). 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.

5.0 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: Jack Donohew

Date: May 26, 2000