

July 25, 2003

Mr. R. T. Ridenoure
Division Manager - Nuclear Operations
Omaha Public Power District
Fort Calhoun Station, FC-2-4 Adm.
P.O. Box 550
Fort Calhoun, NE 68023-0550

SUBJECT: FORT CALHOUN STATION, UNIT NO. 1 - ISSUANCE OF AMENDMENT
(TAC NO. MB7497)

Dear Mr. Ridenoure:

The Commission has issued the enclosed Amendment No. 219 to Facility Operating License No. DPR-40 for the Fort Calhoun Station, Unit No. 1. The amendment consists of changes to the Technical Specifications (TS) in response to your application dated January 27, 2003.

The amendment modifies Technical Specification (TS) 2.1.6, "Pressurizer and Main Steam Safety Valves," to increase the "as found" pressurizer safety valve (PSV) lift setting tolerances and TS 3.2 (Table 3-5, "Minimum Requirements for Equipment Test") to specify the "as left" PSV setpoint tolerances. The amendment also modifies TS 5.9.1c to remove the requirement to provide a statement in the Monthly Operating Report concerning failures or challenges to power operated relief valves or safety valves.

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/

Alan B. Wang, Project Manager, Section 2
Project Directorate IV
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-285

Enclosures: 1. Amendment No. 219 to DPR-40
2. Safety Evaluation

cc w/encls: See next page

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TS: ML032100454

NRR-100

*** See previous concurrence**

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OMAHA PUBLIC POWER DISTRICT

DOCKET NO. 50-285

FORT CALHOUN STATION, UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 219

License No. DPR-40

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by the Omaha Public Power District (the licensee) dated January 27, 2003, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and 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 license 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, Facility Operating License No. DPR-40 is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 3.B. of Facility Operating License No. DPR-40 is hereby amended to read as follows:

B. Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 219, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. The license amendment is effective as of its date of issuance and shall be implemented within 30 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

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

Attachment: Changes to the Technical
Specifications

Date of Issuance: July 25, 2003

ATTACHMENT TO LICENSE AMENDMENT NO. 219

FACILITY OPERATING LICENSE NO. DPR-40

DOCKET NO. 50-285

Replace the following pages of 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

2-15
2-15a
3-20
5-7

INSERT

2-15
2-15a
3-20
5-7

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 219 TO FACILITY OPERATING LICENSE NO. DPR-40
OMAHA PUBLIC POWER DISTRICT
FORT CALHOUN STATION, UNIT NO. 1
DOCKET NO. 50-285

1.0 INTRODUCTION

The current Fort Calhoun Station, Unit 1(FCS) Technical Specification (TS) 2.1.6(1), "Pressurizer and Main Steam Safety Valves," specifies that "[t]he reactor shall not be made critical unless two pressurizer safety valves are operable with their settings adjusted to ensure valve opening at 2485 psig $\pm 1\%$ and 2530 psig $\pm 1\%$." By letter dated January 27, 2003, Omaha Public Power District, (OPPD/licensee), submitted a license amendment request to change TS 2.6.1(1) to "[t]wo pressurizer safety valves shall be OPERABLE in MODES 1 and 2, with lift settings of 2485 psig $+1\%/-3\%$ and 2530 psig $+1\%/-3\%$ respectively." The proposed TS amendment would change the lift setting tolerance band for operability of the pressurizer safety valve (PSV) from ± 1 percent to $+1$ percent -3 percent for Modes 1 and 2 to allow for normal setpoint variance. The licensee also proposed to change TS 3.2 (Table 3-5) to specify that following testing of the PSVs, the "as-left" PSV lift setting tolerance band of ± 1 percent of their specified setpoint must be met. In addition, the licensee proposed to remove the requirement for a statement in the Monthly Operating Report (MOR) concerning failures and challenges to power-operated relief valves (PORVs) or PSVs.

The licensee stated that the changes to the PSV lift setting tolerances are necessary to minimize TS violations caused by setpoint drift.

2.0 REGULATORY EVALUATION

The requirement of General Design Criterion (GDC) 15 of Appendix A to 10 CFR Part 50 specifies that "[t]he reactor coolant system and associated auxiliary, control, and protection systems shall be designed with sufficient margin to assure that the design conditions of the reactor coolant pressure boundary are not exceeded during any condition of normal operation, including anticipated operational occurrences."

Section 50.36 specifies the Commission's regulatory requirements related to the content of TSs. Specifically, 10 CFR 50.36(c)(2)(ii) sets forth four criteria to be used in determining whether a limiting condition for operation (LCO) is required to be included in TSs. These criteria are: (1) installed instrumentation that is used to detect, and indicate in the control room, a significant abnormal degradation of the reactor coolant system (RCS) pressure boundary; (2) initial plant conditions that are assumed in a design-basis transient and accident analysis; (3) a structure, system or component (SSC) that is used for mitigating consequences of the

design-basis transients and accidents; and (4) an SSC which probabilistic risk assessment has shown to be significant to public health and safety.

NUREG-1432, Revision 2, "Standard Technical Specifications - Combustion Engineering Plants," was developed based on the criteria in 10 CFR 50.36(c)(2)(ii). An SSC which satisfies any of the criteria specified in 10 CFR 50.36(c)(2)(ii) must include an LCO and associated surveillance requirements in the TS. FCS uses the pressurized water reactor of nuclear steam supply systems manufactured by Combustion Engineering Inc. (CE) (now, a part of the Westinghouse Electric Company). PSVs are part of the primary success path and credited in the FCS Updated Safety Analysis Report (USAR) for the transient and accident analysis to mitigate the effects of the design-basis events. In accordance with Criterion 3 of 10 CFR 50.36(c)(2)(ii) discussed above, a TS LCO is required for the PSVs.

The staff's review of the proposed TS changes is based on the compliance with the GDC-15 requirement and consistency with the guidance provided in the standard technical specifications (STS) for the CE-designed plants.

3.0 EVALUATION

The staff's review confirmed that the licensee's record of the design basis analysis remains valid and acceptable, and the proposed TS changes correctly reflect the results of the acceptable analysis and meet the intent of the applicable sections of the STS for CE-designed plants.

FCS has two spring-loaded PSVs, each installed to operate with a liquid loop seal in the upstream piping. In 1992, the licensee used test data, data from operating events, and an analytical model to evaluate the relationship between PSV lift pressures established with steam (no loop seal) versus expected lift pressure with the installed loop seals. It was found that with the loop seals, the PSVs would initially lift at up to one percent below the steam setting. These circumstances are further discussed in NRC Information Notice 93-02, "Malfunction of a Pressurizer Safety Valve," January 4, 1993. The effect of this setpoint shift due to the presence of the loop seals is discussed below.

The main design purpose of the PSVs is to provide overpressure protection for the RCS. Together with the reactor protection system, the PSVs ensure that the RCS pressure meets the GDC-15 requirement in terms of the RCS design pressure safety limit (2750 psia). The compliance with the GDC-15 requirement is demonstrated in the analysis of the design basis events. In assessing the effects of the TS changes on the design basis event analysis, the licensee evaluated the existing analysis in the USAR, and identified that the loss-of-load (LOL) event, which results in a highest peak pressurizer pressure, was the case whose consequences were most sensitive to the proposed changes in the PSV setpoint tolerances. The licensee indicated that the analysis of record for the LOL event assumed that the PSVs would open only when the calculated pressurizer pressure reaches the values corresponding to the PSV setpoints with the associated tolerance of +6 percent, which bounds the setpoint tolerance of +1 percent proposed for the PSVs in the TS. The assumed tolerance of +6 percent used in the analysis generates higher effective PSV opening pressures and results in a higher peak pressurizer pressure during an LOL event. Therefore, the staff concludes that the analysis of record for the LOL event remains valid and acceptable for supporting the proposed tolerance of +1 percent for the PSV setpoints. The licensee stated, and the staff agreed, that the negative

tolerance of -3 percent proposed for the PSV setpoints had no adverse effect on the limiting LOL analysis since the operating PSVs would provide heat sinks for removal of energy from the RCS and use of PSV setpoints with inclusion of negative tolerances (lower effective PSV opening pressures) would result in an earlier opening of the PSVs and decrease the peak pressurizer pressure during overpressurization events such as an LOL event.

In addition, the licensee indicated that the proposed changes do not violate the design basis that requires a reactor trip and power-operated-relief-valve (PORV) actuation before the opening of the PSVs during a pressurization event. The PSV setpoints are designed to be above the high pressurizer pressure reactor trip setpoint that also opens the PORVs. Specifically, the lowest nominal PSV setpoint is 2500 psia which is 4.1 percent above the TS 1.2 upper limit of 2400 psia for the reactor trip and PORV actuation setting. The margin of 4.1 percent is sufficient to accommodate the combination of the proposed tolerance of -3 percent for the PSV setpoint and the anticipated 1 percent reduction in actuation pressure due to the loop seal. Therefore, the staff determines that the opening pressures for the PSVs below the high pressurizer pressure setpoint for the reactor trip and PORV actuation are not a concern.

The staff also finds that the changes of the tolerance for the PSV setpoint are within the allowable range specified in NUREG-1432, Revision 2. Specifically, the Bases section of Surveillance Requirement 3.4.10.1 allows a tolerance range of ± 3 percent for the PSV setpoint.

Since (1) the proposed changes of the PSV setpoint tolerances are bounded by the analysis of record; (2) they do not violate the design basis that requires a reactor trip and PORV actuation before opening the PSVs during an event that results in an increase in the pressurizer pressure; and (3) the changes of the PSV setpoint tolerance are within the range allowed for the CE-designed plants, such as FCS, as specified in NUREG-1432, Revision 2, the staff concludes that the proposed changes of the PSV setpoint tolerances are acceptable.

The licensee also proposes to remove from TS 5.9.1c the requirement for a statement in the MOR concerning failures or challenges to PORVs or PSVs. The licensee states that when there is such a challenge or failure, this statement typically refers the reader to a Licensee Event Report (LER) for details of the event. The requirements for submitting LERs would not be affected by the proposed change to TS 5.9.1c. The staff also notes that NRC Generic Letter 97-02, "Revised Contents of the Monthly Operating Report," which was issued for the general purpose of requesting the submittal of less information in the MOR, does not require a statement in the MOR concerning failures or challenges to PORVs or PSVs. Further, the staff has not identified a reason, unique to FCS, for retaining this requirement; therefore, the staff concludes that the licensee's proposal to remove the requirement for a statement in the MOR regarding failures or challenges to PORVs or PSVs is acceptable.

The licensee proposed to revise TS 3.2, Table 3-5, Item 3 to require an "as-left" PSV setting tolerance of ± 1 percent. Setting the PSV to this tolerance helps reduce the overall setpoint drift over time, which is acceptable to the staff.

The licensee also proposed other changes to items (2), (3) and (4) of TS 2.1.6. They involve changes of the defined terms in TS 2.1.6. Currently the defined terms appear in lowercase text

and the licensee proposed to convert them to uppercase text for consistency with the STS. These are editorial changes and have no effect on the Limiting Conditions for Operation, Actions and Surveillance Requirements of the TS. Therefore, they are acceptable.

The staff has evaluated the licensee's request to amend the FCS TS to increase the tolerance band of the lift settings of the PSVs. The changes are intended to minimize TS violations caused by setpoint drift. Based on the evaluation discussed in Sections 2.0 and 3.0, the staff finds that the proposed changes of the PSV setpoint tolerances are bounded by the analysis of record, and are within the allowable range specified in the STS for the CE-designed plants. Therefore, the staff concludes that the licensee's amendment request is acceptable.

4.0 STATE CONSULTATION

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

5.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to 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 (68 FR 12956). Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). This amendment also involves changes in recordkeeping, reporting or administrative procedures or requirements. Accordingly, with respect to these items, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(10). 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) 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 Contributors: G. Hammer
S. Sun

Date: July 25, 2003

Ft. Calhoun Station, Unit 1

cc:

Winston & Strawn
ATTN: James R. Curtiss, Esq.
1400 L Street, N.W.
Washington, DC 20005-3502

Chairman
Washington County Board of Supervisors
P.O. Box 466
Blair, NE 68008

Mr. John Kramer, Resident Inspector
U.S. Nuclear Regulatory Commission
P.O. Box 310
Fort Calhoun, NE 68023

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

Ms. Sue Semerera, Section Administrator
Nebraska Health and Human Services
Systems
Division of Public Health Assurance
Consumer Services Section
301 Centennial Mall, South
P.O. Box 95007
Lincoln, NE 68509-5007

Mr. David J. Bannister, Manager
Fort Calhoun Station
Omaha Public Power District
Fort Calhoun Station FC-1-1 Plant
P.O. Box 550
Fort Calhoun, NE 68023-0550

Mr. John B. Herman
Manager - Nuclear Licensing
Omaha Public Power District
Fort Calhoun Station FC-2-4 Adm.
P.O. Box 550
Fort Calhoun, NE 68023-0550

Iowa Department of Public Health
401 SW 7th Street, Suite D
Des Moines, IA 50309

Mr. Richard P. Clemens
Division Manager - Nuclear Assessments
Omaha Public Power District
Fort Calhoun Station
P.O. Box 550
Fort Calhoun, NE 68023-0550

Mr. Daniel K. McGhee
Bureau of Radiological Health