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MURLEY,T.E. Document Control Branch (Document Control Desk)

SUBJECT: Application for amends to Licenses DPR-58 & DPR-74, requesting Tech Specs Tables 4.7-1 & 3.7-4 associated w/Tech Specs 3.7.1.1 re main steam safety valve tolerance.

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AEP:NRC:1169.

Donald C. Cook Nuclear Plant Units 1 and 2
Docket Nos. 50-315 and 50-316
License Nos. DPR-58 and DPR-74
TECHNICAL SPECIFICATIONS CHANGE TO INCREASE THE
ALLOWABLE TOLERANCE FOR MAIN STEAM SAFETY VALVES

U.S. Nuclear Regulatory Commission
Document Control Desk
Washington, D.C. 20555

Attn: T. E. Murley

November 11, 1992

Dear Dr. Murley:

This letter and its attachments constitute an application for amendment to the Technical Specifications (T/Ss) for Donald C. Cook Nuclear Plant Units 1 and 2. Specifically, we request that T/Ss Tables 4.7-1 (Unit 1) and 3.7-4 (Unit 2) associated with T/S 3.7.1.1 be amended to reflect an increased main steam safety valve tolerance of ± 3%. In addition, we request that Unit 2 T/S 3.5.2 be amended to reflect a thermal power limitation resulting from the small break LOCA analysis when a safety injection cross-tie valve is closed.

The lift setpoints of the main steam safety valves frequently drift outside of the originally intended ± 1% allowance over a fuel cycle. In attempting to minimize the setpoint drift problem and determine the root cause, several valves have been inspected and refurbished. These actions have been unsuccessful in keeping the setpoints within specification over the fuel cycle. The manufacturer of these valves has recommended an increase in the allowable tolerance to ± 3%. This tolerance is consistent with recent ASME code requirements. Consequently, we are making this submittal to implement the changes in the T/Ss identified above.

In 1986, a Notice of Violation was issued due to concerns noted in Inspection Report Numbers 50-315/86030 and 50-316/86030 (reference AEP:NRC:1013) regarding the drift in the setpoint for the subject valves. Although this was not found to be a significant safety concern, we committed to submit a licensee event report (LER) when any of the valves were found outside of the ± 1% range. In addition to requesting your approval of this proposed T/Ss change, it is also requested that this commitment be cancelled. This request is based on the operating characteristics of these valves, that the valves operate as a bank, not individually, and are analyzed as such. In the future, therefore, it is considered more appropriate to submit

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an LER only if the "as-found" condition of this bank of valves does not support the Chapter 14 safety analysis of record. Although it is possible, based on historical trends, that some valves may exceed the 3% drift limit, sufficient capacity from the remaining valves in the bank would typically be available to ensure that the plant would have responded within the analyzed limits.

This T/S change is being requested for implementation before the next regularly scheduled Unit 2 refueling outage and associated valve testing. To support the schedule, we request that the amendment be approved for both units by the end of the third quarter of 1993. We will keep NRC project management informed of any schedule change through routine project review meetings.

A detailed description of the proposed changes and our analyses concerning significant hazards considerations are included in Attachment 1 to this letter. Attachment 2 contains the proposed revised T/Ss pages. Attachment 3 contains marked-up copies of the existing T/Ss. Westinghouse Report SECL-91-429, "Donald C. Cook Units 1 and 2, Main Steam Safety Valve Lift Setpoint Tolerance Relaxation," is found in Attachment 4.

We believe that the proposed changes will not result in (1) a significant change in the types of effluents or a significant increase in the amount of any effluent that may be released offsite, or (2) a significant increase in individual or cumulative occupational radiation exposure.

These proposed changes have been reviewed by the Plant Nuclear Safety Review Committee and by the Nuclear Safety and Design Review Committee.

In compliance with the requirements of 10CFR50.91(b)(1), copies of this letter and its attachments have been transmitted to the Michigan Public Service Commission and the NFEM Section Chief.

This letter is submitted pursuant to 10 CFR 50.54(f) and, as such, an oath statement is enclosed.

Sincerely,

E E Fitzpatrick

E. E. Fitzpatrick
Vice President

tjw

Attachments

cc: D. H. Williams, Jr.
A. A. Blind - Bridgman
J. R. Padgett
G. Charnoff
A. B. Davis - Region III
NRC Resident Inspector - Bridgman
NFEM Section Chief

bc: S. J. Brewer
D. H. Malin/K. J. Toth
M. L. Horvath - Bridgman
J. B. Kingseed
D. F. Powell
J. B. Shinnock
W. G. Smith, Jr.
W. M. Dean, NRC - Washington, D. C.
AEP:NRC:1169
DC-N-6015.1

STATE OF OHIO)
COUNTY OF FRANKLIN)

E. E. Fitzpatrick, being duly sworn, deposes and says that he is the Vice President of licensee Indiana Michigan Power Company, that he has read the foregoing Technical Specifications Change to Increase the Allowable Tolerance for Main Steam Safety Valves, and knows the contents thereof; and that said contents are true to the best of his knowledge and belief.

E E Fitzpatrick

Subscribed and sworn to before me this 11th

day of November, 19 92.

Rita D. Hill
NOTARY PUBLIC

RITA D. HILL
NOTARY PUBLIC. STATE OF OHIO
MY COMMISSION EXPIRES 6-28-94

ATTACHMENT 1 to AEP:NRC:1169

NO SIGNIFICANT HAZARDS CONSIDERATION EVALUATION

IN SUPPORT OF THE

INCREASED ALLOWABLE TOLERANCE ON MAIN STEAM SAFETY VALVES

I. INTRODUCTION

There are a total of twenty Dresser main steam safety valves (MSSV) installed on four main steam headers (five valves per header) in each unit at Cook Nuclear Plant. These valves are required to be setpoint tested per Section XI of the ASME Boiler and Pressure Vessel Code, 1974 Edition. The setpoints (lift settings) must be within the ±1% tolerance specified in the Technical Specifications.

Typically, one-third of the valves are tested each refueling outage. One failure to meet the ±1% T/S criteria causes additional valves to be tested. At Cook Nuclear Plant, we have had to test all twenty valves during every recent refueling outage. Since the 1987 "Trevi Test," an improved testing device has been employed to test the MSSVs. Even with the improved test methods, the test results do not show a definitive trend of valve degradation. The manufacturer (Dresser) believes that, if the valves were cycled more frequently than the 18-month test, the ±1% tolerance could be achieved. Cycling the valves more often than every 18 months, however, is not feasible due to plant operational constraints. Dresser recommends an increase in the tolerance range from ±1% to ±3% for MSSVs at Cook Nuclear Plant. Historical test results of MSSVs at Cook Nuclear Plant reveal that 90% of the setpoint drift has been within the ±3% band. The ±3% band is consistent with ANSI/ASME OM-1, 1981 Edition (Standard for Relief Devices), which specifies a ±3% testing tolerance for all ISI safety and relief valves. The testing requirements of this standard are applicable via 1986 and later editions of ASME Section XI.

II. DESCRIPTION OF PROPOSED TECHNICAL SPECIFICATION CHANGES

A. Unit 1

1. Table 4.7-1

Table 4.7-1 is being changed to reflect the ±3% tolerance rather than the ±1% tolerance on the MSSVs.

2. Bases page 3/4 7-1

The Bases are being changed to reflect the allowable tolerance and the requirement to reset the valves to their nominal setting. The description of the valve function in the first paragraph was clarified to be consistent with the equivalent description in the Unit 2 Bases.

B. Unit 2

1. T/S 3.5.2

Technical Specification 3.5.2 is being changed to limit the THERMAL POWER to $3250MW_t$ when a safety injection cross-tie valve(s) is closed. In analyzing a small break LOCA, the MSSV tolerance increase results in an increase in steam generator, and consequently primary system, pressure. This results in a lower safety injection flow. The additional lowering of the safety injection flow for the cross-tie valve closed configuration is compensated for by a lower thermal power to obtain acceptable small break LOCA results.

2. Table 3.7-4

Table 3.7-4 is being changed to reflect the ±3% tolerance rather than the ±1% tolerance on the MSSVs.

3. Bases page 5-1

The Bases are being changed to reflect the requirement to reduce power when a safety injection crosstie valve is closed.

4. Bases page 3/4 7-1

The Bases are being changed to reflect the allowable tolerance and the requirement to reset the valves to their nominal setting.

III. JUSTIFICATION FOR CHANGE

Westinghouse Report SECL-91-429, "Donald C. Cook Units 1 and 2, Main Steam Safety Valve Lift Setpoint Tolerance Relaxation," found in Attachment 4, summarizes the accident analyses affected by a relaxation in the allowable MSSV tolerance to ±3%. This Westinghouse report provides a justification for the T/Ss change.

IV. NO SIGNIFICANT HAZARDS ANALYSIS

We have evaluated the proposed T/Ss changes and have determined that they do not represent a significant hazards consideration based on the criteria established in 10 CFR 50.92(c). Operation of Cook Nuclear Plant in accordance with the proposed amendment will not:

1) Involve a significant increase in the probability or consequences of an accident previously evaluated

Based on the analyses presented in Attachment 4, all of the applicable LOCA and non-LOCA design basis acceptance criteria are satisfied. Although increasing the valve setpoint may

result in an increase in the steam release from the ruptured steam generator in the event of a steam generator tube rupture above the current UFSAR value found in Chapter 14.2.4 for both units by approximately 0.2%, the analysis indicates that the calculated doses are within a small fraction of the 10CFR100 dose guidelines. The evaluation also concludes that the existing mass releases used in the offsite dose calculations for the remaining transients (i.e., steam line break, rod ejection) are still applicable.

There are no hardware modifications to the valves and, therefore, there is no increase in the probability of a spurious opening of a MSSV. Sufficient margin exists between the normal steam system operating pressure and the valve setpoints with the increased tolerance to preclude an increase in the probability of actuating the valves.

Based on the above, there is no significant increase in the probability of an accident previously evaluated in the UFSAR or in the dose consequences.

2) <u>Create the possibility of a new or different kind of accident from any previously analyzed</u>

Increasing the lift setpoint tolerance on the MSSVs does not introduce a new accident initiator mechanism. No new failure modes have been defined for any system or component important to safety nor has any new limiting single failure been identified. No accident will be created that will increase the challenge to the MSSVs and result in increased actuation of the valves. Therefore, the possibility of a new or different kind of accident than any already evaluated in the UFSAR is not created.

3) <u>Involve a significant reduction in a margin of safety</u>

As discussed in the safety evaluation (Attachment 4), the proposed increase in the MSSV lift setpoint tolerance will invalidate neither the LOCA nor the non-LOCA conclusions presented in the UFSAR accident analyses of record. The new loss of load/turbine trip analysis concluded that all applicable acceptance criteria are still satisfied. For all the UFSAR non-LOCA transients, the DNB design basis, primary and secondary pressure limits, and dose limits continue to be met. Peak cladding temperatures remain below the limits specified in 10 CFR 50.46 for normal operation and when the thermal power is reduced to compensate for closure of the safety injection cross tie valves as required by the proposed Technical Specifications. The calculated doses resulting from a steam generator tube rupture event remain within a small fraction of the 10 CFR 100 permissible releases. Thus, there is no reduction in the margin to safety.

TABLE 4.7-1

STEAM LINE SAFETY VALVES PER LOOP

VALVE NUMBER	LIFT SETTING (±3%)*	ORIFICE SIZE
a. SV-1	1065 psig	16 in.^{2}
b. SV-1	1065 psig	16 in.^{2}
c. SV-2	1075 psig	16 in.^{2}
d. SV-2	1075 psig	16 in.^{2}
e. SV-3	1085 psig	16 in.^{2}

* The lift setting pressure shall correspond to ambient conditions of the valve at nominal operating temperature and pressure.