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NLS2011086
October 6, 2011

U.S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D.C. 20555-0001

Subject: Supplement to License Amendment Request for Reducing the Number of Technical Specification 3.4.3 Required Safety Relief Valves
Cooper Nuclear Station; Docket No. 50-298, License No. DPR-46

Reference: Letter from Brian J. O'Grady, Nebraska Public Power District, to the U.S. Nuclear Regulatory Commission, dated January 5, 2011, "License Amendment Request for Reducing the Number of Technical Specification 3.4.3 Required Safety Relief Valves"

Dear Sir or Madam:

The purpose of this letter is for Nebraska Public Power District (NPPD) to supplement and revise our request for amendment to Facility Operating License DPR-46 under the provisions of 10 CFR 50.4 and 10 CFR 50.90. The license amendment request (LAR) in the Reference letter was to revise the Cooper Nuclear Station (CNS) Technical Specification (TS) 3.4.3, Safety/Relief Valves (SRVs) and Safety Valves. This supplement to the LAR reduces the number of SRVs required to be operable for over-pressure protection from eight to seven instead of from eight to five as originally requested. NPPD has revised the No Significant Hazards Consideration evaluation to show that this change continues to not involve a significant hazard.

NPPD requests approval of the proposed amendment by January 8, 2012, as originally requested in the Reference letter, allowing for an approximate one year review by the Nuclear Regulatory Commission (NRC). Once approved, the amendment will be implemented within 60 days.

Attachment 1 provides a description of the revised TS changes, the basis for the changes, and revised No Significant Hazards Consideration evaluation pursuant to 10 CFR 50.91(a)(1). The Environmental Consideration pursuant to 10 CFR 51.22 in the original LAR remains valid. Attachment 2 provides the revised proposed changes to the current CNS TS in marked up format. Attachment 3 provides the revised final typed TS pages to be issued with the amendment. Attachment 4 provides conforming changes to the TS Bases for information. Enclosures to the original LAR remain valid. No regulatory commitments are being made by this request.

COOPER NUCLEAR STATION
P.O. Box 98 / Brownville, NE 68321-0098
***Telephone:** (402) 825-3811 / **Fax:** (402) 825-5211*
www.nppd.com

A001
NRR

This proposed TS revision has been reviewed by the necessary safety review committees (Station Operations Review Committee and Safety Review and Audit Board). Amendments to the CNS Facility Operating License through Amendment 238 issued July 27, 2011, have been incorporated into this request. This request is submitted under affirmation pursuant to 10 CFR 50.30(b).

By copy of this letter and its attachments, the appropriate State of Nebraska official is notified in accordance with 10 CFR 50.91(b)(1). Copies are also being provided to the NRC Region IV office and the CNS Senior Resident Inspector in accordance with 10 CFR 50.4(b)(1).

Should you have any questions concerning this matter, please contact David Van Der Kamp, Licensing Manager, at (402) 825-2904.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on: 10/6/11
(Date)

Sincerely,

Brian J. O'Grady
Vice President – Nuclear
and Chief Nuclear Officer

/em

Attachments

cc: Regional Administrator w/Attachments
USNRC - Region IV

Cooper Project Manager w/Attachments
USNRC - NRR Project Directorate IV-1

Senior Resident Inspector w/Attachments
USNRC - CNS

Nebraska Health and Human Services w/ Attachments
Department of Regulation and Licensure

NPG Distribution w/ Attachments

CNS Records w/Attachments

Attachment 1

**Supplement to License Amendment Request for
Reducing the Number of Technical Specification 3.4.3 Required Safety Relief Valves**

Cooper Nuclear Station; Docket No. 50-298, DPR-46

Revised Technical Specification Page

3.4-6

1.0 SUMMARY DESCRIPTION

This letter is a supplement to the license amendment request (LAR) to amend Facility Operating License DPR-46 for Cooper Nuclear Station (CNS) originally submitted on January 5, 2011 (Reference.) This supplement revises the LAR to propose a change to Technical Specification (TS) 3.4.3 to reduce the number of Safety Relief Valves (SRVs) required to be operable for over-pressure protection (OPP) and Anticipated Transient Without Scram (ATWS) from eight to seven instead of from eight to five to resolve Nuclear Regulatory Commission (NRC) concerns over safety margin reduction.

Nebraska Public Power District (NPPD) requests approval of the proposed amendment by January 8, 2012, as requested in the original LAR, allowing an approximate one year review by the NRC. Once approved, CNS will implement the amendment within 60 days.

2.0 DETAILED DESCRIPTION

The following revisions are proposed to TS Section 3.4.3.

2.1 Proposed Change

Limiting Condition for Operation (LCO) 3.4.3 currently states, "The safety function of 8 SRVs and 3 SVs shall be OPERABLE." This revised request would replace the number "8" with "7 of 8" in LCO 3.4.3 for the number of SRVs required to be operable for OPP. The condition statement is also changed to "One or more required SRVs or SVs inoperable."

2.2 Need for Change

This change is being proposed because LCO 3.4.3 is more restrictive than needed to meet the SRV safety function of Reactor Coolant Pressure Boundary OPP or the ATWS support function. NRC had expressed concerns in a public telephone call on July 12, 2011, about the No Significant Hazards Consideration (NSHC) evaluation of the original LAR. Specifically, they could not see how reducing the number of required SRVs from eight to five was not considered a significant reduction in safety margin. After the telephone call, NPPD determined that a more conservative number of seven (rather than five) SRVs required to be operable will provide the needed relief from the more restrictive current requirement and requested to supplement the LAR with a revised number and NSHC evaluation.

2.3 Technical Specification Bases Changes

Revised TS Bases pages are provided in Attachment 4 for NRC information. These Bases revisions will be made as an implementing action pursuant to TS 5.5.10, TS

Bases Control Program, following issuance of the amendment. The TS Bases for pages B 3.4-15, B 3.4-16 and B 3.4-18 are revised to conform to the changes proposed for TS 3.4.3.

3.0 TECHNICAL EVALUATION

The Technical Evaluation of the original LAR and the General Electric Hitachi analysis documented in Enclosures 1 and 2 of the original LAR remain valid. This revision to the original LAR sets a more conservative limit on number of SRVs required to be operable so that more of the margin to OPP and ATWS limits is retained.

4.0 REGULATORY SAFETY ANALYSIS

4.1 Applicable Regulatory Requirements/Criteria

The Applicable Regulatory Requirements/Criteria discussions of the original LAR remain valid.

4.2 Precedent

Sufficiently similar precedent was not found. NPPD requests this amendment request be evaluated on its own merit. This is unchanged from the original LAR.

4.3 No Significant Hazards Consideration

This supplement to the LAR revises and replaces the No Significant Hazards Consideration evaluation originally submitted.

10 CFR 50.91(a)(1) requires that licensee requests for operating license amendments be accompanied by an evaluation of no significant hazard posed by issuance of the amendment. Nebraska Public Power District (NPPD) has evaluated this proposed amendment with respect to the criteria given in 10 CFR 50.92(c). The following is the evaluation required by 10 CFR 50.91(a)(1).

NPPD is requesting an amendment of the Operating License for the Cooper Nuclear Station to revise Technical Specification (TS) 3.4.3, Safety/Relief Valves (SRVs) and Safety Valves (SVs). The proposed amendment reduces the number of SRVs required to be operable from eight of eight to seven of eight, based on an analysis of over-pressure protection (OPP) events and anticipated transient without scram (ATWS) events that showed acceptable results with more than one SRV out of service.

1. **Do the proposed changes involve a significant increase in the probability or consequences of an accident previously evaluated?**

   Response: No.

   The number of SRVs installed in the plant and their configuration are not being changed by this amendment. Since there are no changes to any physical configuration of the SRVs nor to their lift setpoints, no new accident initiators are introduced. The plant will continue to be operated in the same manner as before and will respond to accidents in the same manner as before. Only the number of SRVs required to be operable is being changed. Therefore, the proposed change does not result in a significant increase in the probability of an accident previously evaluated.

   The change does, in fact, reduce the number of SRVs originally assumed to be operable in design basis accident mitigation calculations. The General Electric Hitachi (GEH) analysis has shown that reducing the number of SRVs required to be operable from eight to six continues to preserve substantial margin to OPP and ATWS limits. With one SRV inoperable, i.e. reducing the number of required operable SRVs from eight to seven, the reduction in margin is well within the safety design bases of the nuclear pressure relief system. Therefore, the functioning of fewer SRVs continues to accomplish the required pressure relief for the analyzed transients and events.

   Therefore, the proposed changes do not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. **Do the proposed changes create the possibility of a new or different kind of accident from any accident previously evaluated?**

   Response: No.

   The proposed amendment does not change the design function or operation of the SRVs. The change does not create the possibility of a new or different kind of accident since there is no credible new failure mechanism, malfunction, or accident initiator not considered in the design and licensing bases.

   Therefore, the proposed change does not create the possibility of a new or different kind of accident from any previously evaluated.

3. **Do the proposed changes involve a significant reduction in a margin of safety?**

Response: No.

The safety margins affected by this proposed change are the OPP pressure relief margin to Reactor Coolant System Pressure Boundary design pressure and the ATWS pressure relief margin to the American Society of Mechanical Engineers Level 'C' Service Limit. The GEH analysis performed to support this change demonstrates the margin between maximum pressure rise, upon SRV actuation, and the OPP limit continues to be substantial. For ATWS with one SRV inoperable, available remaining margin to the Level C Service limit is still sufficient to ensure maximum pressure and required steam flows are within analysis success criteria. The analysis success criteria are, in turn, below the accident and transient limits. The change does not exceed a design basis or safety limit, and it does not significantly reduce the margin of safety. Thus, the margin reduction for one SRV inoperable is not significant.

Therefore, the proposed change does not involve a significant reduction in a margin of safety.

Based on the responses to the above questions, NPPD concludes that the proposed amendment presents no significant hazards consideration under the standards set forth in 10 CFR 50.92(c) and, accordingly, a finding of "no significant hazards consideration" is justified.

4.4 Conclusion

In conclusion, based on the considerations discussed above, (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.

5.0 ENVIRONMENTAL CONSIDERATION

The Environmental Consideration submitted with the original LAR remains valid.

6.0 REFERENCE

6.1 Letter from Brian J. O'Grady, Nebraska Public Power District, to the U.S. Nuclear Regulatory Commission, dated January 5, 2011, "License Amendment Request for Reducing the Number of Technical Specification 3.4.3 Required Safety Relief Valves"

Attachment 2

**Proposed Technical Specification Revisions
(Markup)**

Cooper Nuclear Station, Docket No. 50-298, DPR-46

Revised Technical Specification Page

3.4-6

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.3 Safety/Relief Valves (SRVs) and Safety Valves (SVs)

LCO 3.4.3 The safety function of ~~8~~ 7 of 8 SRVs and 3 SVs shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more required SRVs or SVs inoperable.	A.1 Be in MODE 3. AND A.2 Be in MODE 4.	12 hours 36 hours

Attachment 3

Proposed Technical Specification Revisions
(Re-Typed)

Cooper Nuclear Station, Docket No. 50-298, DPR-46

Revised Technical Specification Pages

3.4-6

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.3 Safety/Relief Valves (SRVs) and Safety Valves (SVs)

LCO 3.4.3 The safety function of 7 of 8 SRVs and 3 SVs shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more required SRVs or SVs inoperable.	A.1 Be in MODE 3. AND A.2 Be in MODE 4.	12 hours 36 hours

Attachment 4

Proposed Technical Specification Bases Revisions
(Information Only)

Cooper Nuclear Station, Docket No. 50-298, DPR-46

Revised Technical Specification Bases Pages

B 3.4-15
B 3.4-16
B 3.4-18

BASES

APPLICABLE SAFETY ANALYSES (continued)

analysis was performed assuming a setpoint tolerance of ± 3% for the SRVs and SVs (Ref. 3). For the purpose of the setpoint tolerance analysis, ~~all 8~~ SRVs and 3 SVs are assumed to operate in the safety mode. The analysis results demonstrate that the design SRV and SV capacity, with a setpoint tolerance of ± 3%, is capable of maintaining reactor pressure below the ASME Code limit of 110% of vessel design pressure (110% x 1250 psig = 1375 psig). This LCO helps to ensure that the acceptance limit of 1375 psig is met during the most severe design basis pressure transient.

From an overpressure standpoint, the design basis events are bounded by the MSIV closure with flux scram event described above. Reference 4 discusses additional events that are expected to actuate the SRVs and SVs.

SRVs and SVs satisfy Criterion 3 of 10 CFR 50.36(c)(2)(ii) (Ref. 5).

LCO

The safety function of ~~11~~ SRVs and SVs ~~are~~ required to be OPERABLE to satisfy the assumptions of the safety analysis (Ref. 3). The requirements of this LCO, as they apply to the SRVs, are applicable only to the capability of the SRVs to mechanically open to relieve excess pressure when the lift setpoint is exceeded (safety function).

The SRV and SV setpoints are established to ensure that the ASME Code limit on peak reactor pressure is satisfied. The ASME Code specifications require the lowest safety valve setpoint to be at or below vessel design pressure (1250 psig) and the highest safety valve to be set so that the total accumulated pressure does not exceed 110% of the design pressure for overpressurization conditions. The transient evaluations in Reference 3 are based on these setpoints, but also include the additional uncertainties of ± 3% of the nominal setpoint to provide an added degree of conservatism.

Operation with fewer valves OPERABLE than specified, or with setpoints outside the ASME limits, could result in a more severe reactor response to a transient than predicted, possibly resulting in the ASME Code limit on reactor pressure being exceeded.

BASES

7 of 8

3

APPLICABILITY

In MODES 1, 2, and 3, ~~all~~ SRVs and SVs must be OPERABLE, since considerable energy may be in the reactor core and the limiting design basis transients are assumed to occur in these MODES. The SRVs and SVs may be required to provide pressure relief to limit peak reactor pressure.

In MODE 4, decay heat is low enough for the RHR System to provide adequate cooling, and reactor pressure is low enough that the overpressure limit is unlikely to be approached by assumed operational transients or accidents. In MODE 5, the reactor vessel head is unbolted or removed and the reactor is at atmospheric pressure. The SRV and SV function is not needed during these conditions.

ACTIONS

A.1 and A.2

of the required

With the safety function of one or more SRVs or SVs inoperable, a transient may result in the violation of the ASME Code limit on reactor pressure. If the safety function of one or more SRVs or SVs is inoperable, the plant must be brought to a MODE in which the LCO does not apply. To achieve this status, the plant must be brought to MODE 3 within 12 hours and to MODE 4 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach required plant conditions from full power conditions in an orderly manner and without challenging plant systems.

of the required

SURVEILLANCE REQUIREMENTS

SR 3.4.3.1

This Surveillance requires that the SRVs and SVs will open at the pressures assumed in the safety analysis of Reference 3. The demonstration of the SRV and SV safety function lift settings must be performed during shutdown, since this is a bench test, to be done in accordance with the Inservice Testing Program. The lift setting pressure shall correspond to ambient conditions of the valves at nominal operating temperatures and pressures. The SRV setpoint is ± 3% for OPERABILITY; however, the valves are reset to ± 1% during the Surveillance to allow for drift.

BASES

REFERENCES

1. ASME Boiler and Pressure Vessel Code, Section III.

2. USAR, Section IV-4.9.

3. NEDC-31628P, SRV Setpoint Tolerance Analysis for Cooper Nuclear Station, October 1988.

4. USAR, Section XIV.

5. 10 CFR 50.36(c)(2)(ii).

6. ASME Code for Operation and Maintenance of Nuclear Power Plants.

7. NEDC 10-032 Revision 1, Acceptance of GE SRV Out-of-Service Reports, October 29, 2010.

ATTACHMENT 3 LIST OF REGULATORY COMMITMENTS©[4]

Correspondence Number: NLS2011086

The following table identifies those actions committed to by Nebraska Public Power District (NPPD) in this document. Any other actions discussed in the submittal represent intended or planned actions by NPPD. They are described for information only and are not regulatory commitments. Please notify the Licensing Manager at Cooper Nuclear Station of any questions regarding this document or any associated regulatory commitments.

COMMITMENT	COMMITMENT NUMBER	COMMITTED DATE OR OUTAGE
None		