



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 61 TO FACILITY OPERATING LICENSE NO. DPR-42
AND AMENDMENT NO. 55 TO FACILITY OPERATING LICENSE NO. DPR-60
NORTHERN STATES POWER COMPANY
PRAIRIE ISLAND NUCLEAR GENERATING PLANT, UNIT NOS. 1 AND 2
DOCKET NOS. 50-282 AND 50-306

Introduction

By letter dated September 14, 1982, Northern States Power Company (NSP or the licensee) requested amendments to Facility Operating License Nos. DPR-42 and DPR-60 for the Prairie Island Nuclear Generating Plant Unit Nos. 1 and 2 (PINGP). The requested amendments propose changes in the Technical Specifications (TS) in the following areas.

1. Table TS.4.2-1, Inservice Inspection Requirements
2. TS 4.12.B.4 (new), Steam Generator Tube Surveillance
3. Table TS.4.12-1, Steam Generator Tube Surveillance
4. Typographical corrections to TS pages TS 3.1-3, TS 4.5-2, TS 5.6-2 and TS 6.1-1
5. TS 6.0, Administrative Controls
6. TS 6.2.B.4.(b), Updated Safety Analysis Report
7. TS 6.5.A, Plant Operating Procedures
8. TS 6.7.A, Reporting Requirements
9. TS 6.7.B, Reporting Requirements
10. TS 3.3.A.1.(b) and 3.3.A.2.(e), Accumulator Isolation Valve Requirements
11. TS 3.3.D.2.a.(2), Operability of Diesel-driven Cooling Water Pumps

12. TS 3.4.A, Steam Exclusion System
13. TS 3.4.A.2, Auxiliary Feedwater System
14. Table TS.4.1-1, Instrumentation Surveillance

Discussion and Evaluation

1. Table TS.4.2-1, Inservice Inspection Requirements

The licensee has proposed a change to the TS that permits the use of either magnetic particle (M.T.) or liquid penetration (P.T.) surface examination methods for inspecting surfaces of the pump flywheels. M.T. examination, which would be added to the TS by this change, will permit the licensee an alternative to the P.T. method where accessibility in performing the examination appears to be a problem. We find that the M.T. examination method is equivalent to the P.T. method in determining the presence of surface cracks or discontinuities of ferrous materials and both methods of examination meet the requirements of the ASME Section XI Code (IWA2220). The use of the M.T. examination method will in no way reduce the level of safety and therefore we find this change acceptable.

2. TS 4.1.2.B.4 (new), Steam Generator Tube Surveillance

The licensee has proposed to change the method of selecting steam generator tubes for inspection when the inspection results are classified as category C-3. Specifically, the licensee proposes to include the following conditions when category C-3 inspection is required:

When the sample inspection results in a C-3 category, all tubes will be inspected, including all tubes under the template plugs and eddy current positioning fixture, with the following exceptions:

- (a) The defects in the tubes inspected are at specific locations on the tubes. For example, if all defects are located at anti-vibration bars, then only those tubes that come into contact with anti-vibration bars need be inspected.

- (b) The defects in the tubes inspected are related to a defined problem. For example, if all defects are located in the Row 1 or 2 short radius U-bend, then only the Row 1 and 2 tubes need be inspected.

The results of the first sample inspection are used to categorize results into C-1, C-2 or C-3 which forms the basis for subsequent sample inspections. The proposed change would influence the steam generator tube selection in category C-3 for subsequent sample inspections and thus affect the inspection results. Whether the affected results will be more or less conservative than the results obtained by the existing sampling methods cannot be established from the licensee's submittal. In addition, the licensee is proposing that the tube selection for subsequent inspections be concentrated in locations where the cause of the defects can be defined. However, the basis for such definitions has not been established. Based on the above evaluation and our review of the licensee's submittal, we find the proposed TS change is unacceptable.

3. Table TS.4.12-1, Steam Generator Surveillance

The existing TS defines S as follows:

$S = \frac{6\%}{n}$ where n is the number of steam generators inspected during an inspection period and S is the total number of tubes to be inspected.

The licensee has proposed to define "S" in an equivalent form, taking into consideration that each unit contains two steam generators. Thus the licensee proposes to define S as follows:

S = 3%, when two steam generators are inspected during that outage;

S = 6%, when one steam generator is inspected during that outage.

The proposed change will in no way reduce the minimum number of steam generator tubes per steam generator that the licensee is required to inspect during the refueling outages. Therefore, the intent of the TS is not compromised by this proposed change. We agree with the licensee that the proposed change minimizes any potential confusion in interpreting the TS. On this basis we have concluded that the proposed change to the TS is acceptable.

4. Typographical correction to TS pages TS 3.1-3, TS 4.5-2, TS 5.6-2 and TS 6.1-1

Based on the licensee's review of the TS, the following typographical errors are proposed to be corrected.

- a. Remove the redundant reference on page TS.3.1-3 as noted in Exhibit B. Reference on page TS.3.1-3A.
- b. Correct typographical error in TS.4.5.B.1.a by changing the word "heat" to "head".

- c. Remove the redundant reference "(1) FSAR Section 9" which appears on page TS 5.6-2.
- d. Correct typographical error in TS 6.1.A.5 by changing "of Senior Reactor Operator" to "or Senior Reactor Operator".

We have reviewed these typographical corrections and find that the proposed corrections do not change any of the TS requirements nor the intent of the statement that are affected by these proposed corrections. Since these changes serve only to correct errors as described above, they do not involve significant new safety information of a type not considered by a previous Commission safety review of the facility. We therefore find these proposed changes to correct the typographical errors acceptable.

5. TS 6.0, Administrative Control

The licensee has proposed to update the NSP Corporate Organization Chart Figure TS 6.1-1 to reflect the recent organization changes. Other changes include position title changes on pages TS 6.2-1, TS 6.2-3 and TS 6.2-5 to reflect title changes of various positions. The licensee requested to replace Figure TS 6.1-2 with a redrawn figure.

Our review of these proposed changes indicates that the responsibilities and resources of the revised organization are essentially unchanged.

In addition the reporting functions of the Safety Audit Committee and the Directors for Quality Assurance, Maintenance and Nuclear Generation have not changed such that the level of plant safety is reduced, there is

not a significant increase in the probability or consequences of an accident and there is not a significant decrease in safety margin. On this basis we conclude that the proposed organization provides an adequate organization arrangement to manage and support the operational status of the Prairie Island Nuclear Generating Plant Unit Nos. 1 and 2 and therefore the proposed changes are acceptable.

6. TS 6.2.B.4.(b), Updated Safety Analysis Report

The licensee has proposed to revise the title of Final Safety Analysis Report (FSAR) as it appears in TS 6.2.B.4.(b) to the Updated Safety Analysis Report (USAR). The USAR is to be used as the reference document for determining modifications that will be required by Operation Committee Review. The USAR is a new document updating the information in the FSAR pursuant to 10 CFR 50.71(e). This change permits the licensee to use USAR which is an administrative change that does not involve a safety issue. On this basis we find this change acceptable.

7. TS 6.5.A, Plant Operation

The licensee has proposed to delete the semiannual drills on the emergency plan procedures, including checks of communications with the offsite support groups. Specifically, the licensee proposes to delete the following:

"Drills on the procedures specified in A.6 above shall be conducted at least semiannually including a check of communication with offsite support groups."

A.6 specified "implementing procedures of the emergency plan, including procedures for coping with emergency conditions involving potential or actual releases of radioactivity."

We agree with the licensee that Emergency Plan drill requirements are covered in detail in 10 CFR 50 Appendix E Part IV paragraphs E and F. These parts of the Code of Federal Regulations require licensees to perform the Emergency Plan Drills including a check of the communication system annually. The existing requirement in TS is inconsistent and confusing when compared with 10 CFR 50 Appendix E. In addition, we find that there is no basis for conducting these exercises more often than annually. We therefore conclude that deleting the drill requirement statement in the TS is acceptable.

8. TS 6.7.A, Reporting Requirement

By our letter dated March 2, 1982 we accepted the licensee's commitment to report relief valve and safety valve challenges. We also requested the licensee to formalize the reporting requirements of these valves. The licensee, in response to our request has proposed this TS change which will require the licensee to submit an annual report on the safety and relief valve failures and challenges prior to March 1 of each year. We find that the licensee has fulfilled our request in formalizing this reporting requirement and therefore this change is acceptable.

9. TS 6.7.B, Reporting Requirement

The licensee proposed a change to clarify the reporting requirement related to fire protection events. The fire protection system reporting requirements are addressed separately in TS Sections 3.14 and 4.16. The proposed clarification merely states that the established reporting procedures for

reportable occurrences in TS Section 6.7.B does not apply for fire protection systems. Similar clarification wording has been found acceptable by the staff for the Monticello plant pursuant to the amendment issued by letter dated June 30, 1981. We have reviewed the proposed clarification and find that the clarification separates the reporting requirements for fire protection from other reporting requirements called for under the administrative section of the TS which is also the purpose of identifying the reporting requirements in TS Section 3.14 and 4.16 for fire protection. On this basis we find the clarification for the reporting requirement related to fire protection events to be acceptable.

10. TS 3.3.A.1.(b) and 3.3.A.2.(e), Accumulator Isolation Valve Requirements

The licensee has proposed to reword TS 3.3.A.1.(b) and 3.3.A.2.(e) related to the operability of the reactor coolant system accumulators in order to avoid any possible misinterpretation of the TS. The existing TS reads as follows:

TS 3.3.A.1.(b), "Each reactor coolant system accumulator shall be operable except that each may be isolated below a pressurizer pressure of 1000 psig, and

TS 3.3.A.2.(e), "One accumulator may be inoperable for up to one hour".

The proposed rewording of these two TS would read as follows:

TS 3.3.A.1.(b), "Each reactor coolant system accumulator shall be operable when the reactor system pressure is greater than 1000 psig" and

TS 3.3.A.2.(e), "One accumulator may be inoperable for up to one hour whenever pressurizer pressure is greater than 1000 psig.

We agree with the licensee that both the existing and the proposed TS require that both accumulators must be operable when the pressurizer pressure is above 1000 psig and that one of the two accumulators can be isolated for up to one hour. The proposed rewording does not change the TS requirements but does eliminate the confusing wording that exists in the current TS. On this basis we find the proposed rewording on accumulator operability acceptable.

11. TS 3.3.D.2.a.(2), Operability of Diesel Driven Cooling Water Pump

The licensee has proposed to show the complete title of the pump reference in TS 3.3.D.2.a.(2) in order to eliminate any possible confusion. The words to be added by the proposed change are "the operable diesel driven cooling water." The proposed change is editorial in nature and does not alter in any way the intent of the TS. We find this change acceptable.

12. TS 3.4.A, Steam Exclusion System

Discussion and Background

The steam exclusion system isolates the ventilation ducts that penetrate rooms containing equipment required to bring the reactor to safe shutdown from plant areas outside containment containing high energy lines. The redundant dampers that exist in these ducts prevent high temperature steam from entering the rooms containing safeguard equipment in the unlikely event that a high energy line break occurs outside containment. The existing TS requires the licensee to have both isolation dampers in each

ventilation duct operable or have one damper closed, if one of the redundant dampers is inoperable. This TS has been interpreted by the licensee to mean that during the testing period, one damper of the redundant dampers shall be closed. As a result of this interpretation, the room environmental controls are disrupted due to the lack of circulating air during the testing period. In addition the dampers are exercised each time the temperature sensors are actuated by the test signal, resulting in the dampers being opened and closed an excessive number of times, causing unnecessary damper wear. Such problems had not been foreseen at the time the TS were issued. The licensee, in order to resolve this issue, has proposed the following:

- a. Both isolation dampers in each ventilation duct that penetrates rooms containing equipment required for a high energy line rupture outside of containment shall be operable.
- b. If one of the two redundant dampers is removed from service, or found inoperable, the operable damper shall be tested daily. If after 48 hours, the inoperative damper is not returned to service, one of the two dampers shall be closed.
- c. The actuation logic for one train of steam exclusion may be out of service for 48 hours provided the other train is tested to demonstrate operability prior to initiating repair of the inoperable channel and every 24 hours thereafter.

Evaluation and Conclusion

We agree with the licensee that some time should elapse before the redundant damper is closed to permit testing and maintenance of the dampers. However, allowing 48 hours before the redundant damper is closed has been judged excessive since, if after 48 hours the damper cannot be closed, the licensee has an additional 48 hours before the reactor is brought to cold shutdown, thus permitting a total of 96 hours to elapse from the time of a known failure of a redundant component to the time the plant is brought to cold shutdown. In addition other backup safety components are allowed to be inoperable for periods up to 72 hours (e.g., turbine driven auxiliary feedwater pump). On this basis we requested that the proposed TS be modified to read as follows:

- a. Both isolation dampers in each ventilation duct that penetrates rooms containing equipment required for a high energy line rupture outside containment shall be operable.
- b. If one of the two redundant dampers is removed from service or for testing and maintenance purposes or found inoperable, the operable redundant damper may remain open for a period not to exceed 24 hours. If after 24 hours, the inoperative damper is not returned to service, one of the two dampers shall be closed.
- c. The actuation logic for one train of steam exclusion may be out of service for 24 hours provided the other train is tested and found operable prior to initiating repair of the inoperable channel.

The requested modifications will provide adequate time to perform the necessary testing and maintenance of the steam exclusion system without interrupting the environmental controls of the plant. In addition this modification will also permit the licensee to reduce the number of unnecessary damper closings when the steam exclusion system is tested. Our proposed modifications to the licensee's TS change request was discussed with and agreed to by the licensee.

Operating experience (i.e., from plant startup to present) has shown that after 2810 damper tests in the steam exclusion system there have been only six occasions where dampers were found inoperable. Therefore, the proposed change as modified does not in any way reduce the level of safety. On this basis we find the licensee's proposed TS change related to the steam exclusion system dampers as modified is acceptable.

13. TS 3.4..2, Auxiliary Feedwater System

The licensee reevaluated the auxiliary feedwater system based on the criteria in NUREG-0737 Items II.E.1.1 and II.E.1.2. Based on our review of the licensee's submittals on this matter, by letter dated March 22, 1982, we issued our safety evaluation in which we requested the licensee to commit to submitting a TS change request requiring assurance that cross tie valves in cross connects between the condensate tanks be locked in an open position. This proposed TS is in response to this commitment. The proposed TS requires the cross tie valves to be blocked and tagged open. Any change in position of the valves will be under direct administrative control. We find that the licensee has fulfilled his commitment as discussed in our safety evaluation (March 22, 1982) and therefore the proposed change is acceptable.

14. Table TS.4.1-1, Inservice Inspection Requirement

As part of the licensee's reevaluation of the auxiliary feedwater system under the criteria of NUREG-0737 Items II.E.1.1 and II.E.1.2, the licensee committed to install suction and discharge pressure switches. By letter dated January 7, 1982 the licensee further committed to submit a TS change request governing the surveillance and operability of these pressure switches. This TS change request is the licensee's fulfillment of this commitment. The pressure switch serves as protection for the auxiliary feedwater pumps from damage due to loss of suction pressure and pump runout conditions. Our technical basis requiring the installation of these pressure switches is discussed in our safety evaluation issued to the licensee by letter dated March 22, 1982 as related to meeting the requirement of GL-4 (long term recommendations). The proposed TS change will require the licensee to check the calibration and perform a functional test during each refueling outage. Based on the above evaluation we find the proposed change acceptable.

Environmental Consideration

We have determined that the amendments do not authorize a change in effluent types or total amounts nor an increase in power level and will not result in any significant environmental impact. Having made this determination, we have further concluded that the amendments involve an action which is insignificant from the standpoint of environmental impact and, pursuant to 10 CFR §51.5(d)(4), that an environmental impact statement or negative declaration and environmental impact appraisal need not be prepared in connection with the issuance of these amendments.

Conclusion

We have concluded, based on the considerations discussed above, that: (1) because the amendments do not involve a significant increase in the probability or consequences of an accident previously evaluated, do not create the possibility of an accident of a type different from any evaluated previously, and do not involve a significant reduction in a margin of safety, the amendments do not involve a significant hazards consideration, (2) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (3) such activities will be conducted in compliance with the Commission's regulations and the issuance of the amendments will not be inimical to the common defense and security or to the health and safety of the public.

Date: February 2, 1983

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