

January 8, 1996

Mr. E. Watzl, Vice President  
Nuclear Generation  
Northern States Power Company  
414 Nicollet Mall  
Minneapolis, MN 55401

Dear Mr. Watzl:

Thank you for your 10 CFR Part 50.54(a) submittal dated June 14, 1995 which proposed a change to your Quality Assurance Program description. The submittal proposed to change the safety classification of the positive displacement charging pumps at the Prairie Island Nuclear Generating Plants to safety related for pressure boundary only. Based on our review of your submittal, we have concluded that this proposed change would continue to meet the requirements of 10 CFR Part 50, Appendix B, and is acceptable. Specifically, the change is acceptable because the positive displacement charging pumps at the Prairie Island plants do not need to be classified as safety related to satisfy their functional requirements within the plants' design. The safety assessment which documents our review is enclosed. If there are changes to QA commitments existing in docketed correspondence outside of the Quality Assurance Program description, you are obligated to notify this office.

We appreciate your timely submittal of information required by 10 CFR 50.54(a). Please contact Mr. R.A. Langstaff of my staff at (708)829-9747 with any questions you may have regarding this matter.

Sincerely,

original signed by R. N. Gardner  
Ronald N. Gardner, Chief  
Engineering Specialist Branch 2

Docket No. 50-263  
Docket No. 50-282  
Docket No. 50-306

Enclosure: Safety Assessment of Reclassification  
of Prairie Island 1 & 2 Charging Pumps

See Attached Distribution

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## SAFETY ASSESSMENT OF RECLASSIFICATION OF

### PRAIRIE ISLAND 1 & 2 CHARGING PUMPS

#### 1.0 INTRODUCTION

By submittal dated June 14, 1995, the Northern States Power company (NSP, the licensee) proposed a change to the Operational Quality Assurance (QA) Plan for its Prairie Island plants. This change in the QA plan would reclassify the positive displacement (PD) charging pumps from "positive displacement charging pump and motor" to "positive displacement charging pump pressure boundary." The effect of the reclassification is that under the QA plan the inactive function of the PD pumps (maintaining the primary system pressure boundary) would continue to be covered by the QA plan, and active function of the PD pumps (inventory and boron injection) would no longer be covered in the QA plan, but would be covered in other plant surveillance and maintenance programs.

In its submittal, the licensee indicated that the change was proposed so that available resources could be focussed on maintaining equipment more important to plant safety, and to facilitate modifications to the charging pump drive mechanisms which would require less maintenance.

#### 2.0 DISCUSSION

The licensee's submittal identified that the PD charging pumps are an integral part of the Chemical and Volume Control System (CVCS), which performs the following functions:

- Adjusts concentration of chemical neutron absorber for chemical reactivity control.
- Maintains proper water inventory in the Reactor Coolant System (RCS).
- Provides required water to the reactor coolant pump (RCP) seals.
- Processes reactor coolant letdown for reuse of boric acid and reactor makeup water.
- Maintains proper concentration of corrosion inhibiting chemicals in the reactor coolant.
- Maintains reactor coolant activity within design limits.
- The CVCS is part of the RCS pressure boundary and functions in containment isolation.
- Charging pumps are also used to fill and test the RCS.

In its submittal the licensee addressed the above CVCS PD pump functions, applicable functions identified in the GDCs of 10 CFR Part 50 Appendix A, applicable transient and accident USAR Chapter 14 event functions, and PD pump function for certain other events, such as Anticipated Transients Without Scram (ATWS) and Station Blackout (SBO). For each of the PD functions, the licensee indicated that either the function is not a safety function, the function can be performed by other Prairie Island equipment that is safety related or that, by regulatory guidance, the function may be performed by equipment that is not safety related.

For the PD pump function of injecting borated water into the RCS, the licensee indicated that the safety grade ECCS high pressure injection pumps (HPI) could

also perform the same function. The licensee noted that the HPI pumps have a shutoff discharge pressure of 2170 psi which is only slightly below normal RCS operating pressure, and the depressurization to HPI operating pressure could be achieved by steam generator heat removal, pressurizer PORVs, or by reactor vessel head vents. The RCS seal injection function of the PD pumps is backed up by the RCP thermal barrier heat exchanger, which is safety related. The licensee indicated that Westinghouse guidance permits the loss of either of these seal cooling functions (but not both) for up to 24 hours.

The licensee identified that the PD pumps are considered safe shutdown components in addressing the requirements of 10 CFR 50 Appendix R and are necessary to cope with SBO events. However, the licensee indicated that neither of these considerations require that the PD pumps be classified as "safety-related."

The licensee indicated that the PD pumps would continue to be the preferred pumps to be used in certain scenarios addressed in plant operating procedures, would continue to be included in plant Technical Specifications (TS), and would be covered in accordance with the provisions of 10 CFR 50.65, "Requirements for monitoring the effectiveness of maintenance at nuclear power plants." Although the licensee intends to classify the PD charging pumps as nonsafety they will still be covered under the maintenance rule per 10 CFR 50.65(b)(2)(iii). The scope of the monitoring program for the maintenance rule will include nonsafety related components whose failure could cause a reactor scram or actuation of a safety related system.

### 3.0 CONCLUSION

Based on our review of the information provided and clarifications made by the licensee by telephone, the staff concludes that the change in the safety function of the charging pumps to only a pressure boundary is acceptable in that the PD charging pumps at the Prairie Island plants do not need to be classified safety related to satisfy their functional requirements within the plants' design.

Contributors: F. Orr  
B. Wetzel