From: Mahesh Chawla
To: Jack Leveille
Date: 11/9/04 1:56PM
Subject: PI 4TH Interval Inservice Testing Plan - Units 1 & 2

With reference to the above, the NRC staff would like to have a telephone conference with to discuss the following questions. Please let me know your availability.

REQUEST FOR ADDITIONAL INFORMATION FOR
PRAIRIE ISLAND UNITS 1 &2 - 4TH INTERVAL INSERVICE TESTING PLAN

1 Relief Request 2

Relief Request 2 asks relief from the requirements of ISTB-3550 which requires that a rate or quantity meter be installed in the pump test circuit to measure flow. External recirculated flow is not required to be measured if it is not practicable to isolate, has a fixed resistance, and has been evaluated to not have a substantial effect on the results of the test.

The submittal states that an unmetered bypass line feeds a jacket cooler and a gear oil cooler with an estimated flow of 6% of reference flow and that bypass flow will be held constant during the test. Fouling of the heat exchangers will impact the system resistance and potentially mask pump degradation.

The submittal states that unmetered loads to chemical treatment and filtered water exist in the screenhouse. Flow to chemical treatment is estimated at 1.5% and flow to filtered water is estimated at 0.5% of reference flow.

a. Please address the effect of potential jacket cooler and gear oil cooler bypass flow degradation on the quarterly Group A test acceptance criteria and the comprehensive pump test acceptance criteria.

b. Please describe the testing controls that ensure that jacket cooler and gear oil cooler flow is held constant during pump testing.

c. Please address the feasibility of installing flow instrumentation or using temporary flow instrumentation to determine flow in the jacket cooler and gear oil cooler bypass line.

d. Please describe the methodology used to estimate that the jacket cooler and gear oil cooler bypass flow rate is approximately 6% of reference flow.

e. Are the chemical treatment and filtered water bypass lines considered fixed resistance systems? If the bypass lines are considered fixed resistance systems provide the rational to support the conclusion.

f. Please address the effect of potential chemical treatment and filtered water bypass flow degradation on the quarterly Group A test acceptance criteria and the comprehensive pump test acceptance criteria.

g. Please describe the testing controls that ensure that chemical treatment and filtered water bypass flow is held constant during pump testing.

h. Please address the feasibility of installing flow instrumentation or using temporary flow instrumentation to determine chemical treatment and filtered water bypass flow.

l. Please describe the methodology used to estimate the chemical treatment and filtered water bypass flow rate as a percentage of reference flow.

2 Relief Request 3

The submittal states that unmetered loads to chemical treatment and filtered water exist in the screenhouse. Flow to chemical treatment is estimated at 1.5% and flow to filtered water is estimated at 0.5% of reference flow.

a. Are the bypass lines considered fixed resistance systems? If the bypass lines are considered fixed resistance systems provide the rational to support the conclusion.

b. Please address the effect of potential bypass flow degradation on the quarterly Group A test acceptance criteria and the comprehensive pump test acceptance criteria.

c. Please describe the testing controls that ensure that flow is held constant during pump testing.

d. Please address the feasibility of installing flow instrumentation or using temporary flow instrumentation to determine flow in the bypass line.

e. Please describe the methodology used to estimate the bypass flow rate as a percentage of reference flow.

3 Relief Request 5

The relief request states that the valves are tested on a cold shutdown frequency. Per the valve table and the associated outage justification the valves are tested on a refueling outage frequency.

The submittal does not provide adequate justification to grant relief. The rational stated for relief is a general conclusion that disassembly of the valve enclosure to allow verification of valve position indication during refueling is burdensome without a compensating increase in the level of safety and quality. The submittal does not demonstrate a hardship or unusual difficulty associated with implementing the code requirement or address the quality and safety aspects of not implementing the code requirement.

a. Please address the discrepancy between the test frequency identified in the relief request and the test frequency identified in the valve table.

b. Please provide further information to support a hardship or unusual difficulty and address the quality and safety aspects of not implementing the code requirement.

4 Section 4.14 of the IST program references GL 89-04, Position 2 for check valve disassembly and inspection instead of ISTC. GL 89-04, Position 2 was incorporated into the 98 OM Code. Any deviation from the requirements of ISTC requires a relief request. Does the IST program meet the requirements of ISTC for check valve disassembly and inspection?

5 ISTC requires that check valve disassembly and inspection be conducted during refueling outages. Several check valves in the IST program are identified as being disassembled and inspected during periods when the unit is not in a refueling outage and the frequency of disassembly of certain check valves appears to exceed the ISTC required frequency. Disassembly and inspection outside of a refueling outage requires a relief request.

a. Are check valves disassembled and inspected outside of refueling outages as indicated in the IST program?

b. Are check valves (or 1 valve in a group of valves) disassembled and inspected

every refueling outage or included in a check valve condition monitoring program as required by ISTC?

6 The IST program implements Code Case OMN-9. OMN-9 has been approved for use by the NRC, however, OMN-9 is not applicable to the 1998 Edition of the Code. Use of OMN-9 with the 1998 Edition of the Code requires relief from Code requirements. Please discuss why relief was not requested to implement Code Case OMN-9.

7 Section 5.5.2 of the IST program states that flow rate is not determined and recorded during the quarterly Group A test performed on the RHR pumps as required by ISTB due to hydraulic fluctuations at the flow element. Deviation from ISTB requirements requires relief. Please discuss why relief was not requested from the ISTB requirement that flow rate be determined and recorded during a Group A test.

8 Section 5.5.4 of the IST program states that cooling water pump suction pressure is determined using intake bay level and that the accuracy of the measurement is plus or minus 2%. The Code requires that pressure be determined using pressure gages. The Code also requires that instrument accuracy for comprehensive and preservice tests be plus or minus 0.5%. Please discuss why relief is not required to determine suction pressure using intake bay level and utilize a calculated pressure measurement that does not meet the code required instrument accuracy during a comprehensive or preservice test.

9 Section 5.5.5 of the IST program states that the AFW pumps are tested quarterly using an uninstrumented mini-flow line and a full flow test is performed each refueling outage. The AFW pumps are identified as Group A pumps. ISTB requires that flow rate be determined and recorded during quarterly group A tests. Deviation from ISTB requirements requires relief. Please discuss why relief was not requested from the ISTB requirement that flow rate be determined and recorded during the AFW pump Group A test.

10 ISTC requires bi-directional testing of check valves. Numerous check valves listed in the valve table and program deferrals are identified as only being tested to the open or closed position (CTO or CTC).

a. Are check valves in the IST program being tested in both the open and closed directions as required by ISTC?

b. Please discuss the testing methodology used to verify check valve obturator movement.

11 Check valve deferrals and the IST program are inconsistent with respect to partial stroke exercising requirements. Some deferrals address the feasibility to partial stroke valves at power and cold shutdowns, however, numerous deferrals do not address partial stroke exercising. Please discuss the IST program requirements with respect to partial stroke exercising of valves and verify that the requirements have been adequately incorporated into the IST program and the IST program deferrals.

12 The charging pumps and boric acid transfer pumps are not included in the IST program. ISTB-1100 states that Subsection ISTB applies to certain centrifugal and positive displacement pumps that have an emergency power source. ISTA-1100 states that the requirements apply to pumps that are required to perform a specific function in shutting down a reactor to the safe shutdown condition, in maintaining the safe shutdown condition, or mitigating the consequences of an accident.

a. Are the boric acid transfer pumps and charging pumps required to be operable and capable of supplying a boration flow path to shutdown the reactor and maintain a safe shutdown condition?

b. Please provide further justification as to why the pumps are not required to be

included in the IST program.

13 The EDG fuel oil transfer pumps are not included in the IST program. ISTB-1100 states that Subsection ISTB applies to certain centrifugal and positive displacement pumps that have an emergency power source. ISTA-1100 states that the requirements apply to pumps that are required to perform a specific function in shutting down a reactor to the safe shutdown condition, in maintaining the safe shutdown condition, or mitigating the consequences of an accident. Section 5.5.8 of the IST program states that the pumps are safety related but not ASME Code Class and are considered a skid system even though the pumps are not located on a skid and that the operational readiness of the pumps is adequately demonstrated during EDG testing.

a. Do the fuel oil transfer pumps meet the requirements of ISTA and ISTB with respect to inclusion of the pumps in the IST program?

b. Please provide further justification as to why the pumps are not required to be included in the program, discuss why the pumps are considered skid mounted equipment, and describe the testing presently conducted to determine the operational readiness of the pumps.

14 Section 5.5.2 of the IST program references Relief Request #7. The Unit 1 valve table (page 6 of 64) references Relief Request #8 for valve CA-11-1. The IST program as submitted does not contain relief requests 7 or 8. Are relief requests 7 and 8 required for the 4th 10-year interval?

15 Deferral 2AF7 states that valve AF-15-11 will be exercised each refueling outage. The valve table identifies a frequency of cold shutdown. Please address the discrepancy between the deferral and the valve table.

16 Deferral CC15 and 2CC15 do not provide adequate justification to defer testing. The justification for deferral addresses testing in the closed direction whereas the test frequency addresses testing in the open position. The justification does not provide a logical rational to defer testing in the open direction. Please provide additional information to support the deferral.

17 Deferrals CC8, 2CC8, CC9, and 2CC9 do not provide enough information to determine the adequacy of the determination that deferral to refueling is justified. Please provide additional information to support the deferral.

18 Deferrals CS1, CS2, CS3, CS4, 2CS1, 2CS2, 2CS3, and 2CS4 state that the associated valves are partial stroke opened every 92 days. The valve table does not identify that the valves are partial stroked open quarterly. Please address the discrepancy between the deferral and the valve table.

19 Deferrals RH4 and 2RH4 state that the associated valve will be tested at cold shutdown. The valve table identifies that the valve is tested at refueling. Please address the discrepancy between the deferral and the valve table.

20 Deferrals RH5 and 2RH5 state that the associated valve will be tested at cold shutdown. The valve table identifies that the valve is tested at refueling. Please address the discrepancy between the deferral and the valve table.

21 Deferrals CA1 and 2CA1 state that the valve will be disassembled and inspected on a refueling basis. The valve table states disassembly is every 36 months. Please address the discrepancy between the deferral and the valve table.

CC: William Poertner

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