

Nuclear Power Business Unit
CONDITION REPORT

IF THE CONDITION MAY BE REPORTABLE OR MAY AFFECT THE OPERABILITY STATUS OF PLANT SYSTEMS OR EQUIPMENT, IMMEDIATELY INFORM THE OPERATIONS DUTY SHIFT SUPERINTENDENT (DSS)

CR 00 - 1096
 Significance Level: A B C D

Applicable Unit: PBO PB1 PB2 N/A Date of Discovery: 3/31/2000 Time of Discovery: 09:30
 Admin Issue/Procedure Issue Equipment Issue Affected System: SW Equipment ID: _____

DESCRIPTION: (Describe the who, what, when, where and why of the concern, if known.)

While performing a review of the station's Probable Risk Assessment (PRA) a new risk insight was found. The station may be running at a higher risk than previously known during the condition when one of the two Service Water Overboard manual isolation valves are closed (SW-146 or SW-104). During this condition, a single passive failure (spurious closure or plugging) of the redundant isolation valve would cause a loss of service water. In the Risk Model, credit was taken for Fire Water as a backup for seal cooling of the Turbine Driven Aux Feed Pump. However, even through the fire water would be available, it uses a common discharge as the service water. Therefore, with this type of failure of service water, the fire water system would also not be available for TD AFW pump cooling. This results in the higher risk value.

SIGNIFICANCE: (Why this is a concern)

This does not appear to be a design basis issue, however, it is a plant operational risk or PRA issue. A preliminary PRA evaluation was performed for this condition. When the plant is operating with one of the two valves closed, the PRA assessment shows an instantaneous plant risk of around 1E-4 for each unit. This is equivalent to being at a 'Yellow' condition whenever one of the two valves are closed.

CORRECTIVE ACTIONS TAKEN: (List WO number, compensatory actions, notifications, etc)

NOTE: DSS's are carrying a turnover note to enter Yellow risk assessment if a SW overboard is shut. SWH 4/1/00

PROBLEM RESOLVED: Yes No Provide Copy of CR to Initiator After Management Review: Yes No

RECOMMENDATIONS: (To be assessed for consideration)

When possible, run with both discharge valves open. Review Service Water abnormal operating procedures to help diagnose this condition and provide corrective actions. Review overall risk impact to determine if additional actions are necessary. Correct the PRA model.

References: PRA Model

Point of Contact: James Masterlark

Initiator: (Print Name) James Masterlark

Work Group: ENG

Phone Ext: x7591

AMS

CR SCREENER: Screener SHALL be a SRO for Operability, Reportability, Technical Specification, or Nuclear Safety Related issues.

Date Received: 3/31/00
Time Received: 1109

Nuclear Safety Issue (SRO only - requires SRO Screening for Nuclear Safety)
 Non-Nuclear Safety Issue (Unit Restart Screen ONLY)

SRO SCREENING FOR NUCLEAR SAFETY (Nuclear Safety Issues only)

Operability Basis: currently both valves are open - the 1540 is not one of operability but risk exposure. Needs to be resolved as ice melt/service water mads, etc close one of the two valves

Compensatory Actions Taken: _____

Operability Screener Name (print): Rob Harvey SRO Signature: [Signature]

Operability Determination required to support Operability Basis Responsible Person: _____

Operability Determination Extended (up to 14 days) Ops Mgr (Sign/Date) _____ / _____
Date/Time Required _____ / _____

Justification for Operability Extension: _____

Is the Structure, System, or Component operable? Non-Equipment Operable Inoperable (OOS)

Technical Specification / Part 21 Screen / Reportability Screen:

Is LCO entry required for this condition (check one)? Yes No Technical Specification _____
Does the condition violate a Technical Specification (check one)? Yes No Technical Specification _____
Is the condition a potential 10 CFR Part 21 concern (check one)? Yes No Requires Engineering Review
Is the condition reportable per DCS 2.1.1 or 2.1.2 (check one)? Yes No Requires Licensing Review

UNIT RESTART SCREEN (ALL issues - check one):

None Initial System Fill/Vent Reload ORT 3 LTOP RCS Fill/Vent 140F 200F 350F 540F
 Criticality Steam in Secondary Grid Synchronization

Screener Comments & Recommendations: As above

Screener Name: Rob Harvey Signature: [Signature] Date/Time: 3/31/00

CORRECTIVE ACTION ASSIGNMENT - MANAGEMENT REVIEW

Group Responsible for Issue Resolution: NMS
 Operability Determination Required By Management (Return CR to Control Room) Date/Time: _____ / _____

Regulatory Services Follow-up of Issue (NRC commitment) Yes No

Organizational Assessment Follow-up of Issue Yes No

Action Required: Root Cause Apparent Cause Routine Work/Plant Betterment (BCR) Document Only

Comments: Good catch
OPS -> resolve the issue

STATUS: CLOSED UNIT: 0 SYSTEM: SW INITIATED: 03/31/00 CLOSED: 10/09/00 MSS #:
INITIATOR: JAMES MASTERLARK ADMINISTRATOR: PATRICIA HOLLER ISSUE MANAGER: DUANE SCHOON
NUMBER OF OPEN ACTIONS : 0 NUMBER OF CLOSED ACTIONS : 2 TOTAL NUMBER OF ACTIONS : 2

Operation Of SW Overboard Manual Valves Questioned - PRA Concern

DESCRIPTION:

While performing a review of the station's Probable Risk Assessment (PRA) a new risk insight was found. The station may be running at a higher risk than previously known during the condition when one of the two Service Water Overboard manual isolation valves are closed (SW-146 or SW-104). During this condition, a single passive failure (spurious closure or plugging) of the redundant isolation valve would cause a loss of service water. In the Risk Model, credit was taken for Fire Water as a backup for seal cooling of the Turbine Driven Aux Feed Pump. However, even through the fire water would be available, it uses a common discharge as the service water. Therefore, with this type of failure of service water, the fire water system would also not be available for TD AFW pump cooling. This results in the higher risk value.

Significance:

This does not appear to be a design basis issue, however, it is a plant operational risk or PRA issue. A preliminary PRA evaluation was performed for this condition. When the plant is operating with one of the two valves closed, the PRA assessment shows an instantaneous plant risk of around 1E-4 for each unit. This is equivalent to being at a 'Yellow' condition whenever one of the two valves are closed.

Corrective Actions Taken:

(NOTE: DSS's are carrying a turnover note to enter YELLOW risk assessment if a SW overboard is shut.-Ron Harper)

Recommendations:

When possible, run with both discharge valves open. Review Service Water abnormal operating procedures to help diagnose this condition and provide corrective actions. Review overall risk impact to determine if additional actions are necessary. Correct the PRA model.

STATUS UPDATE:

(20001009 PB4792 PAH) Parent record closed to AOP-9A, Revision 12 issued on 09/11/00 with the appropriate changes.

SCREENED BY : ROBERT HARVEY DATE: 03/31/00 COMMITMENT.....(Y/N): N
REGULATORY REPORTABLE.....(Y/N): N TS VIOLATION.....(Y/N): N 10 CFR 21.....(Y/N): N
TS LCO ENTRY(Y/N): N OPERABILITY IMPACT PER TS.(Y/N): N ACTION(A N P R W): W
MSS REVIEW REQUIRED(Y/N): N SIGNIFICANCE(A B C D): C OPERABILITY DETERMINATION.(Y/N): N

SUPPORTING DETERMINATIONS:

SRO Screening Comments: Currently both valves are open. The issue is not one of operability but risk exposure. Needs to be resolved as ice melt/service water mods, etc. close one of the two valves.-Rob Harvey

Screener Comments: As above.-Rob Harvey

Manager's Comments: Good catch.

REFERENCES: LEVEL C PRA MODEL GOOD CATCH

CR 00-1096 ACTION NUMBER 1

DONE
CREATED : 04/10/00 PAS DUE DATE: 06/10/00 PRIORITY: 3 EXTENSIONS MADE: 0
WORK DONE: 07/05/00 JAMES MASTERLARK RECEIVED: 05/01/00 NSA DAVID BLACK
VERIFIED : 07/10/00 DUANE SCHOON APPROVED: 07/06/00 DAVID BLACK
CLOSED : 07/13/00 PATRICIA HOLLER

While performing a review of the station's Probable Risk Assessment (PRA) a new risk insight was found. The station may be running at a higher risk than previously known during the condition when one of the two Service Water Overboard manual isolation valves are closed (SW-146 or SW-104). During this condition, a single passive failure (spurious closure or plugging) of the redundant isolation valve would cause a loss of service water. In the Risk Model, credit was taken for Fire Water as a backup for seal cooling of the Turbine Driven Aux Feed Pump. However, even through the fire water would be available, it uses a common discharge as the service water. Therefore, with this type of failure of service water, the fire water system would also not be available for TD AFW pump cooling. This results in the higher risk value.

Recommendations:

When possible, run with both discharge valves open. Review Service Water abnormal operating procedures to help diagnose this condition and provide corrective actions. Review overall risk impact to determine if additional actions are necessary. Correct the PRA model.

Requested Action: Review the condition presented. Assess the condition and provide recommendations for SW Discharge Valve Operation.

(04/13/00 SJY) Issued to Group: NSA
Dave this really looks like it's being initiated based on PRA insights. Please do the evaluation and recommend corrective actions as requested.

(05/01/00 DBB) Received Action into Group: NSA
Responsible Person: JPM:JAMES MASTERLARK Due Date: 06/10/2000

(05/01/00 DBB) Set Work Priority to 3.

(06/08/00 JPM) This issue has been discussed with operations, system engineering, and and operations procedure writers. This is a valid PRA risk issue and can be mitigated through the use of procedure changes. I recommend that operation procedures be changed to provide mitigating actions in the event that service water is lost due to closure of a Service Water overboard valve. The next planned occurrence of this situation is the fall 2000 refuel outage.

(06/08/00 JPM) 2 corrective actions should be developed. First, a corrective action assigned to the operations procedure writers to revise the operations procedures to provide mitigating actions upon the loss of service water due to closure of both overboard valves. This should be accomplished prior to the Fall 2000 refuel outage. Second, a corrective action assigned to Engineering PRA to revise the Safety Monitor model to account for the change in operations procedures. This also should be completed prior to the next refuel outage. The service water system engineer and STA's have agree to provide support to the operation procedure writers for guidance on changes that need to be made.

(07/05/00 JPM) Passed to DAVID BLACK for acceptance of work.

(07/06/00 DBB) Passed to DUANE SCHOON for Verification.
As indicated in the 6/8/00 update, two actions are recommended. (1) Action for Operations Procedures group to revise the operations procedures to provide mitigating actions upon the loss of service water due to closure of both overboard valves. This should be accomplished prior to the Fall 2000 refuel outage. (2) Action for Nuclear Safety Analysis / PRA group to revise the Safety Monitor model to account for the change in operations procedures. This also should be completed prior to the next refuel outage. This item may be closed to the two recommended actions. (Note: NUTRK problem caused item to not be submitted for closure until 7/5/00; work was completed on 6/8 as indicated in the updates.)

(07/10/00 DDS) Passed to PATRICIA HOLLER for Final Close Out.
Please create a new action as noted above for Operations. This has been discussed with T. Vandenbosch. Please close this action.

(07/13/00 PAH) PLA Closure of Item.
Closed Action Item #1 to condition has been reviewed and corrective actions in progress.

REFERENCES: LEVEL C PRA MODEL GOOD CATCH

CR 00-1096 ACTION NUMBER 2

DONE	DUE DATE: 10/05/00	PRIORITY: 3	EXTENSIONS MADE: 0
CREATED : 07/13/00 PAS	PATRICIA HOLLER	RECEIVED: 07/13/00 OPS	BRIAN OGRADY
WORK DONE: 09/13/00	TERRY VANDENBOSCH	APPROVED: 09/14/00	BRIAN OGRADY
VERIFIED : 09/14/00	DUANE SCHOON	CLOSED : 10/09/00	PATRICIA HOLLER

While performing a review of the station's Probable Risk Assessment (PRA) a new risk insight was found. The station may be running at a higher risk than previously known during the condition when one of the two Service Water Overboard manual isolation valves are closed (SW-146 or SW-104). During this condition, a single passive failure (spurious closure or plugging) of the redundant isolation valve would cause a loss of service water. In the Risk Model, credit was taken for Fire Water as a backup for seal cooling of the Turbine Driven Aux Feed Pump. However, even through the fire water would be available, it uses a common discharge as the service water. Therefore, with this type of failure of service water, the fire water system would also not be available for TD AFW pump cooling. This results in the higher risk value.

REQUESTED ACTION: Requested action from NSA to address risk modeling concern.

Action to NSA pending the completion of the procedure change. Both these items should be completed prior to the Fall 2000 refueling outage.

(20000713 PB1846 TPS) Set Work Priority to 3. Possible issue to support design basis. Lead procedure supervisor noted some other format other than a procedure was discussed on this subject during simulator evaluations. Ops will investigate and resolve with the author of action #1. Short due due set per information in action #1 closure from engineering.

(07/13/00 IPS) Received Action into Group: OPS
Responsible Person: TGV:TERRY VANDENBOSCH Due Date: 10/05/2000

(09/13/00 TGV) Steps were added to the procedure to address the closure of the service water overboards. AOP-9A was issued with the changes on 9/11/00 rev. 12.

(09/13/00 TGV) Passed to BRIAN OGRADY for acceptance of work.

000004

(09/14/00 BJO1) Passed to DUANE SCHOON for Verification.
Revision 12 of AOP-9A was issued on 9/11/00 with the appropriate changes This item can be closed.

(09/14/00 DDS) Passed to PATRICIA HOLLER for Final Close Out.
Please close, no further action required.

(10/09/00 PAH) PLA Closure of Item.
Action Item #2 closed to AOP-9A, Revision 12 issued on 09/11/00 with the appropriate changes.

REFERENCES: LEVEL C

PRA MODEL

GOOD CATCH

SIGNATURES		DATES
Issue Manager:	<i>Patricia A. Holler</i>	10/09/00