Sargent & Lundy LLC

Don K. Schopfer
Senior Vice President
312-269-6078

February 26, 1998
Project No. 9583-100

Docket No. 50-423

Northeast Nuclear Energy Company
Millstone Nuclear Power Station, Unit No. 3
Independent Corrective Action Verification Program

United States Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D.C. 20555

Enclosed are discrepancy reports (DRs) identified during our review activities for the ICAVP. These DRs are being distributed in accordance with the Communications Protocol, PI-MP3-01.

I have enclosed the following nine (9) DRs for which the NU resolutions have been reviewed and accepted by S&L.

DR No. DR-MP3-0067
DR No. DR-MP3-0230
DR No. DR-MP3-0469
DR No. DR-MP3-0574
DR No. DR-MP3-0770
DR No. DR-MP3-0771
DR No. DR-MP3-0779
DR No. DR-MP3-0788
DR No. DR-MP3-1020

I have also enclosed the eight (8) DRs for which the NU resolutions have been reviewed but not accepted. S&L comments on these resolutions have been provided.

DR No. DR-MP3-0349
DR No. DR-MP3-0370
DR No. DR-MP3-0563
DR No. DR-MP3-0658
DR No. DR-MP3-0659
DR No. DR-MP3-0679
DR No. DR-MP3-0783
DR No. DR-MP3-0808

Please direct any questions to me at (312) 269-6078.

Yours very truly,

D. K. Schopfer
Senior Vice President and
ICAVP Manager

DKS:spr
Enclosures
Copies:
E. Imbro (1/1) Deputy Director, ICAVP Oversight
T. Concannon (1/1) Nuclear Energy Advisory Council
J. Fougere (1/1) NU
m:\icavp\corr\98\nr0226-b.doc

Northeast Utilities
Millstone Unit 3

ICAVP
Discrepancy Report

DR No. DR-MP3-0067

Review Group: Configuration
Review Element: System Installation
Discipline: Electrical Design
Discrepancy Type: Installation Implementation
System/Process: SWP
NRC Significance level: 4

DR RESOLUTION ACCEPTED

Potential Operability Issue
○ Yes
◉ No

Date FAXed to NU:

Date Published: 8/31/97

Discrepancy: Conduit Attachment not Shown on Tray Supports

Description: 1. Conduits 3CX970PB and 3CK970PB are supported on tray supports G400C-33, G400-31, G400-29, G400B-26, and G400D-22 (3CX970PB only). The support detail drawing, EE-34JK Rev. 3, (J-5) does not show the connection of these conduits nor provide any reference to the fact that conduits are supported from these supports.

2. Conduits 3CK767PE3, 3CK970PB, and 3CC752PB are connected to tray supports G326A-44 and -45. There is no indication on the tray support detail or location drawing (EE-34JH Rev. 3, 34EP Rev. 6) that there are any conduits attached to the supports.

3. Conduit 3CC752PB is attached to tray support G327-49. These is no indication on the tray support detail or location drawing (EE-34JH Rev. 3, 34EP Rev. 6) that there are any conduits attached to the supports.

4. An 1½" lighting conduit is attached to tray supports G305-38 and G306-39. These is no indication on the tray support detail or location drawing (EE-34JH Rev. 3, 34EP Rev. 6) that there are any conduits attached to the supports. The Electrical Installation Specification E350 (Section 3.5.12) indicates that lighting conduits shall comply with applicable requirements of the specification. The Specification (Section 3.1.3.11, item 5) requires that all non-seismic conduit, which should include non-essential lighting such as this, shall not be attached to tray hangers without engineering approval. Since the conduit is not shown on the support drawings, there is no evidence of this approval and it is, therefore, unclear if all support loads are correctly calculated. Further, a 4-foot fluorescent light fixture is supported from the horizontal member connecting the two supports G305-38 and G306-39.

		Valid	Invalid	Review Needed	Date
Initiator:	Sarver, T. L.	☒	☐	☐	8/27/97
VT Lead:	Neri, Anthony A	☒	☐	☐	8/28/97
VT Mgr:	Schopfer, Don K	☒	☐	☐	8/28/97
IRC Chmn:	Singh, Anand K	☒	☐	☐	8/28/97

Date:

INVALID:

Date: 10/7/97

RESOLUTION: Disposition:

1. NU has concluded that the issue reported in Item 1 of Discrepancy Report, DR-MP3-0067, does not represent a discrepant condition. There are two errors in the information provided in the DR description. The DR list conduits 3CX970PB and 3CK970PB as being attached to the cable tray supports. These conduit numbers are actually 3CX970PE and 3CK970PB. In addition, conduit 3CX970PB is indicated as attached to support G400D-22. This should be conduit 3CK970PB. Given the above clarification, the documentation for the attachment of the subject conduits to the cable tray supports is provided in E&DCR FE-41790 issued on July 17, 1985.
□Significance Level criteria do not apply here as this is not a discrepant condition.

2.□NU has concluded that the issue reported in Item 2 of Discrepancy Report, DR-MP3-0067, does not represent a discrepant condition. There is one error in the information provided in the DR description which indicates that the 3 conduits are attached to cable tray supports G326A-44 and -45. Conduit 3CC752PB is not attached to cable tray support G326A-44 but is attached to support 45. Given this clarification, the documentation for attachment of the subject conduits to the cable tray supports are addressed in E&DCR FE-41790, issued July 17, 1985 and DCN DM3-XX-1227-96 issued April 23, 1997.
□Significance Level criteria do not apply here as this is not a discrepant condition.

3.□NU has concluded that the issue reported in Item 3 of Discrepancy Report, DR-MP3-0067, does not represent a discrepant condition. Documentation for the attachment of the subject conduit to the cable tray support is contained in DCN DM3-03-1227-96 issued April 23, 1997.

4.□NU has concluded that the issue reported in Item 4 of Discrepancy Report, DR-MP3-0067, has identified a condition not previously discovered by NU which requires correction. The lighting fixture described is installed in accordance with drawing EE-67G which addresses the attachment to the cable tray support. The lighting conduit powering the light fixture does not have any specific documentation which could be located showing the attachment to the cable tray support. This is a documentation change only. Condition Report (CR) M3-97-3197 has been written to provide the necessary corrective actions to resolve this issue.

Conclusion:

NU has concluded that the issues reported in items 1, 2, and 3 of Discrepancy Report, DR-MP3-0067, does not represent a discrepant condition. Documentation for attachment of the conduits to the cable tray supports are addressed in E&DCR FE-41790, issued July 17, 1985 and/or DCN DM3-03-1227-96 issued April 23, 1997. NU has concluded that the issue reported in Item 4 of Discrepancy Report, DR-MP3-0067, identified a condition not previously discovered by NU which requires correction. The

lighting conduit powering the light fixture does not have any specific documentation which could be located showing the attachment to the cable tray support. This is a documentation change only. Condition Report (CR) M3-97-3197 has been written to provide the necessary corrective actions to resolve this issue.

Previously Identified by NU? ○ Yes ◉ No Non Discrepant Condition? ○ Yes ◉ No

Resolution Pending? ○ Yes ◉ No Resolution Unresolved? ○ Yes ◉ No

		Acceptable	Not Acceptable	Review Needed	Date
Initiator:	Sarver, T. L.				
VT Lead:	Neri, Anthony A	☒	☐	☐	2/24/98
VT Mgr:	Schopfer, Dan K	☒	☐	☐	2/25/98
IRC Chmn:	Singh, Anand K	☒	☐	☐	2/25/98
Date:		☐	☐	☐	

SL Comments:

Northeast Utilities
Millstone Unit 3

ICAVP
Discrepancy Report

DR No. DR-MP3-0230

Review Group: Configuration
Review Element: System Installation
Discipline: I & C Design
Discrepancy Type: Installation Implementation
System/Process: RSS
NRC Significance level: 4

DR RESOLUTION ACCEPTED

Potential Operability Issue
- ○ Yes
- ◉ No

Date FAXed to NU:

Date Published: 9/29/97

Discrepancy: Missing Equipment Tags

Description: The following installed instruments were found not to have identification tags: 3RSS-PS41A and B.

		Valid	Invalid	Review Needed	Date
Initiator:	Sarver, T. L.	☒	☐	☐	9/12/97
VT Lead:	Neri, Anthony A	☒	☐	☐	9/15/97
VT Mgr:	Schopfer, Don K	☒	☐	☐	9/22/97
IRC Chmn:	Singh, Anand K	☒	☐	☐	9/25/97

Date:

INVALID:

Date: 1/6/98

RESOLUTION: Disposition:

NU has concluded that Discrepancy Report, DR-MP3-0230, has identified a condition previously discovered by NU which is being corrected. A management initiative to label all components began in 1996. This was a site-wide process to improve the overall configuration management effort. As a result of this effort, a new label for 3RSS-PS41A has already been hung. The new label for 3RSS PS41B is currently in progress per the requirements of OA9, System and Component Labeling.

Conclusion:

NU has concluded that Discrepancy Report, DR-MP3-0230, has identified a condition previously discovered by NU which requires correction. A new label for 3RSS-PS41A has already been hung. A request for an equipment label for 3RSS PS41B is currently in progress per the requirements of OA9, System and Component Labeling.

Previously Identified by NU? ◉ Yes ○ No Non Discrepant Condition? ○ Yes ◉ No

Resolution Pending? ○ Yes ◉ No Resolution Unresolved? ○ Yes ◉ No

		Acceptable	Not Acceptable	Review Needed	Date
Initiator:	Sarver, T. L.	☒	☐	☐	2/24/98
VT Lead:	Neri, Anthony A	☒	☐	☐	1/6/98
VT Mgr:	Schopfer, Don K	☒	☐	☐	2/25/98
IRC Chmn:	Singh, Anand K	☐	☐	☐	

Date:

SL Comments:

Northeast Utilities
Millstone Unit 3

ICAVP
Discrepancy Report

DR No. DR-MP3-0469

Review Group: Configuration
Review Element: Modification Installation
Discipline: Piping Design
Discrepancy Type: Installation Implementation
System/Process: QSS
NRC Significance level: 4

DR RESOLUTION ACCEPTED

Potential Operability Issue
○ Yes
◉ No

Date FAXed to NU:

Date Published: 10/23/97

Discrepancy: Modification DCR M3-96056 Modification to QSS pipe support

Description: Pipe support 3-QSS-4-PSST060 shown on drawing 12729-EZ-79B-30 Rev 4 contains a rigid strut with the pin to pin dimension shown on the drawing to be 2ft-2 1/8 in. This dimension was verified to be 2 ft-9 in. during the walkdown which is a difference of 6 7/8 in. Spec SP-ME-570 Appendix "N" (Pipe Support Field Fabrication and Erection Tolerances) Section 1.6 for Swing Strut Assembly allows a tolerance for the pin to pin dimension of + or - 3 1/2 in. unless the tolerance is waived and explicitly documented which it was not on the drawing.

		Valid	Invalid	Review Needed	Date
Initiator:	Read, J. W.	☒	☐	☐	10/11/97
VT Lead:	Neri, Anthony A	☒	☐	☐	10/11/97
VT Mgr:	Schopfer, Don K	☒	☐	☐	10/15/97
IRC Chmn:	Singh, Anand K	☒	☐	☐	10/18/97

Date:

INVALID:

Date: 2/20/98

RESOLUTION: Disposition:
NU has concluded that Discrepancy Report, DR-MP3-0469, has identified a condition not previously discovered by NU which requires correction. This discrepancy meets the criteria specified in NRC letter B16901 and 17010. It has been screened per U3 PI-20 criteria and found to have no operability or reportability concerns and meets the Unit 3 deferral criteria. CR M3-97-4180 has been written to develop and track resolution of this item per RP-4.

Conclusion:
NU has concluded that Discrepancy Report, DR-MP3-0469, has identified a condition not previously discovered by NU which requires correction. This discrepancy meets the criteria specified in NRC letter B16901 and 17010. It has been screened per U3 PI-20 criteria and found to have no operability or reportability concerns and meets the Unit 3 deferral criteria. CR M3-97-4180 has been written to develop and track resolution of this item per RP-4.

Previously Identified by NU? ○ Yes ◉ No
Non Discrepant Condition? ○ Yes ◉ No
Resolution Pending? ○ Yes ◉ No
Resolution Unresolved? ○ Yes ◉ No

		Acceptable	Not Acceptable	Review Needed	Date
Initiator:	Read, J. W.	☒	☐	☐	2/20/98
VT Lead:	Neri, Anthony A	☒	☐	☐	2/23/98
VT Mgr:	Schopfer, Don K				

PI Mgr:	Schopfer, Barrie	☒	☐	☐	2/25/98
IRC Chmn:	Singh, Anand K	☐	☐	☐	
Date:					
SL Comments:					

Northeast Utilities
Millstone Unit 3

ICAVP
Discrepancy Report

DR No. DR-MP3-0574

Review Group: Configuration
Review Element: System Design
Discipline: Piping Design
Discrepancy Type: Drawing
System/Process: SWP
NRC Significance level: 4

DR RESOLUTION ACCEPTED

Potential Operability Issue
○ Yes
◉ No

Date FAXed to NU:

Date Published: 11/15/97

Discrepancy: PDCR MP3-93-009 Modifications to Service Water piping on inlet and outlet of pumps 3SWP*P2A/B

Description: DCN DM3-S-0475-93 of PDCR MP3-93-009 adds a standard support (Dwg BZ-30JA-26) for pipe support CP-319012-H003 and attaches it to pipe support CP-319012-H005. However, in drawing BZ-19R-10 Rev 2 (revised to incorporate DCN DM3-S-0475-93) the identification of support CP-319012-H005 had been deleted.This is not consistent with the DCN. Both supports -H003 and -H005 should be called out on drawing BZ-19R-10.

		Valid	Invalid	Review Needed	Date
Initiator:	Read, J. W.	☒	☐	☐	11/5/97
VT Lead:	Neri, Anthony A	☒	☐	☐	11/5/97
VT Mgr:	Schopfer, Don K	☒	☐	☐	11/10/97
IRC Chmn:	Singh, Anand K	☒	☐	☐	11/11/97

Date:

INVALID:

Date: 2/17/98

RESOLUTION: Disposition:
NU has concluded that Discrepancy Report, DR-MP3-0574, has identified a condition not previously discovered by NU which requires correction. This discrepancy meets the criteria specified in NRC letter B16901 and 17010. It has been screened per U3 PI-20 criteria and found to have no operability or reportability concerns and meets the Unit 3 deferral criteria. CR M3-97-4064 has been written to develop and track resolution of this item per RP-4.
Conclusion:
NU has concluded that Discrepancy Report, DR-MP3-0574, has identified a condition not previously discovered by NU which requires correction. This discrepancy meets the criteria specified in NRC letter B16901 and 17010. It has been screened per U3 PI-20 criteria and found to have no operability or reportability concerns and meets the Unit 3 deferral criteria. CR M3-97-4064 has been written to develop and track resolution of this item per RP-4.

Previously Identified by NU? ○ Yes ◉ No **Non Discrepant Condition?** ○ Yes ◉ No

Resolution Pending? ○ Yes ◉ No **Resolution Unresolved?** ○ Yes ◉ No

		Acceptable	Not Acceptable	Review Needed	Date
Initiator:	Read, J. W.	☒	☐	☐	2/20/98
VT Lead:	Neri, Anthony A	☒	☐	☐	2/23/98
VT Mgr:	Schopfer, Don K	☒	☐	☐	2/25/98
IRC Chmn:	Singh, Anand K				

IRC Chair: Singh, Anand K ☐ ☐ ☐

Date:

SL Comments:

Northeast Utilities
Millstone Unit 3

ICAVP
Discrepancy Report

DR No. DR-MP3-0770

Review Group: System
Review Element: System Design
Discipline: Mechanical Design
Discrepancy Type: Component Data
System/Process: RSS
NRC Significance level: 4

DR RESOLUTION ACCEPTED

Potential Operability Issue
○ Yes
◉ No

Date FAXed to NU:

Date Published: 12/21/97

Discrepancy: Discrpancy between PDDS and PMMS relative to valve 3RSS-V918

Description: Plant computer data base, PDDS, shows valve 3RSS-V918 to be a gate valve. This is consistent with P&ID EM-112C Revision 16. However, the plant computer data base, PMMS, shows this valve to be a globe valve.

		Valid	Invalid	Review Needed	Date
Initiator:	Feingold, D. J.	☒	☐	☐	12/10/97
VT Lead:	Neri, Anthony A	☒	☐	☐	12/11/97
VT Mgr:	Schopfer, Don K	☒	☐	☐	12/11/97
IRC Chmn:	Singh, Anand K	☒	☐	☐	12/11/97

Date:

INVALID:

Date: 2/23/98

RESOLUTION: Disposition:

NU has concluded that Discrepancy Report, DR-MP3-0770, has identified a condition not previously discovered by NU which requires correction. This discrepancy meets the criteria specified in NRC letter B16901 and 17010. It has been screened per U3 PI-20 criteria and found to have no operability or reportability concerns and meets the Unit 3 deferral criteria. CR M3-98-0217 has been written to develop and track resolution of this item per RP-4.

Conclusion:

NU has concluded that Discrepancy Report, DR-MP3-0770, has identified a condition not previously discovered by NU which requires correction. This discrepancy meets the criteria specified in NRC letter B16901 and 17010. It has been screened per U3 PI-20 criteria and found to have no operability or reportability concerns and meets the Unit 3 deferral criteria. CR M3-98-0217 has been written to develop and track resolution of this item per RP-4.

Previously Identified by NU? ○ Yes ◉ No Non Discrepant Condition? ○ Yes ◉ No

Resolution Pending? ○ Yes ◉ No Resolution Unresolved? ○ Yes ◉ No

		Acceptable	Not Acceptable	Review Needed	Date
Initiator:	Feingold, D. J.	☒	☐	☐	2/23/98
VT Lead:	Neri, Anthony A	☒	☐	☐	2/23/98
VT Mgr:	Schopfer, Don K	☒	☐	☐	2/25/98
IRC Chmn:	Singh, Anand K				

IRC Chmn: Singh, Anand K ☐ ☐ ☐

Date: 2/23/98

SL Comments: The intended corrective action is not apparent from the Northeast Utilities disposition or from condition report CR M3-98-0217. However it is apparent that the corrective action is either to change the P&ID or PDDS to match each other based on the design requirements of the system, but limited by the installed plant configuration.

Northeast Utilities
Millstone Unit 3

ICAVP
Discrepancy Report

DR No. DR-MP3-0771

Review Group: System
Review Element: System Design
Discipline: Mechanical Design
Discrepancy Type: Drawing
System/Process: RSS
NRC Significance level: 4

DR RESOLUTION ACCEPTED

Potential Operability Issue
○ Yes
◉ No

Date FAXed to NU:

Date Published: 12/20/97

Discrepancy: Inconsistency between FSAR and structural drawings with respect to sump trash rejection grating.

Description: FSAR Section [illegible] and FSAR Table 6.2-61 state that the containment structural sump is protected by 1 1/2 inch vertical trash rejection grating. Drawing 12179-ES-53J Revision 1 concurs with the FSAR. However, drawing 12179-ES-53G Revision 3, Section C4, shows the vertical trash rejection grating to be 1 inch by 3/16 inch.

		Valid	Invalid	Review Needed	Date
Initiator:	Feingold, D. J.	☒	☐	☐	12/10/97
VT Lead:	Neri, Anthony A	☒	☐	☐	12/11/97
VT Mgr:	Schopfer, Don K	☒	☐	☐	12/11/97
IRC Chmn:	Singh, Anand K	☒	☐	☐	12/16/97

Date:

INVALID:

Date: 2/23/98

RESOLUTION: Disposition:

NU has concluded that Discrepancy Report, DR-MP3-0771, has identified a condition not previously discovered by NU which requires correction. This discrepancy meets the criteria specified in NRC letter B16901 and 17010. It has been screened per U3 PI-20 criteria and found to have no operability or reportability concerns and meets the Unit 3 deferral criteria. CR M3-98-0512 has been written to develop and track resolution of this item per RP-4.

Conclusion:

NU has concluded that Discrepancy Report, DR-MP3-0771, has identified a condition not previously discovered by NU which requires correction. This discrepancy meets the criteria specified in NRC letter B16901 and 17010. It has been screened per U3 PI-20 criteria and found to have no operability or reportability concerns and meets the Unit 3 deferral criteria. CR M3-98-0512 has been written to develop and track resolution of this item per RP-4.

Previously Identified by NU? ○ Yes ◉ No New Discrepant Condition? ○ Yes ◉ No

Resolution Pending? ○ Yes ◉ No Resolution Unresolved? ○ Yes ◉ No

		Acceptable	Not Acceptable	Review Needed	Date
Initiator:	Feingold, D. J.				
VT Lead:	Neri, Anthony A	☒	☐	☐	2/23/98

VT Lead:	Nieh, Anthony K	☒	☐	☐	2/23/98
VT Mgr:	Schopfer, Don K	☒	☐	☐	2/26/98
IRC Chmn:	Singh, Anand K	☐	☐	☐	

Date: 2/23/98

SL Comments: The intended corrective action is not apparent from the Northeast Utilities disposition or from condition report CR M3-98-0512. However, it is apparent that the corrective action must be to correct the drawing and, if necessary, the installed trash rejection grating to match the FSAR.

Northeast Utilities
Millstone Unit 3

ICAVP
Discrepancy Report

DR No. DR-MP3-0779

Review Group: System
Review Element: System Design
Discipline: Environmental Qualification
Discrepancy Type: Calculation
System/Process: N/A
NRC Significance level: NA

DR RESOLUTION ACCEPTED

Potential Operability Issue
(●) Yes
( ) No

Date FAXed to NU:

Date Published: 1/10/98

Discrepancy: Class 1E Cable Qualified to DOR Guidelines

Description: The review of Electrical Equipment Qualification (EEQ) Test Report Assessment No. EEQ-TRA-107.1 shows that Kerite Company's TPNS Jacketed Power Cables Model J/C 750 MCM, 5KV, Plant I.D. 3VARIOUS-10 (1), is qualified to the Division of Reactors (DOR) Guidelines.
However, Millstone FSAR Section 3.11B.2.2 states that the Environmental Qualification of all safety-related equipment shall meet the requirements of IEEE 323-1974, the intent of NUREG-0588, and NRC 10CFR 50.49.
Also, Wyle qualification test report No. 47176-1, Rev. 0, dated March 23, 1984 did not address the synergistic effects as required in FSAR Section 3.11B.2.2, NRC 10CFR 50.49(e)(7), and R.G. 189, Rev. 1, Section C.5.a.
The synergistic effects that should be addressed during the equipment qualification are the dose rate effects and the effects resulting from the different sequence of applying radiation and (elevated) temperature on the equipment qualified life.

		Valid	Invalid	Review Needed	Date
Initiator:	Yassin, S.	☒	☐	☐	12/17/97
VT Lead:	Neri, Anthony A	☒	☐	☐	12/17/97
VT Mgr:	Schopfer, Don K	☒	☐	☐	12/23/97
IRC Chmn:	Singh, Anand K	☒	☐	☐	12/31/97

Date:

INVALID:

Date: 2/21/98

RESOLUTION: Disposition:
NU has concluded that Discrepancy Report, DR-MP3-0779, does not represent a discrepant condition. Test Report Assessments (TRA's) evaluates and summarizes the environmental qualification test reports and analyses used to qualify a component. These assessments are developed for use by all four units (CY, MP1, MP2, and MP3) as potential design inputs into the Equipment Qualification Records (EQR) revision process. Assessments are not automatically applicable to MP3 until they are specifically referenced within an Equipment Qualification Record.

The Kerite cable in EEQ-TRA-107.1 is qualified to the Division of Reactors (DOR) Guidelines. It is however, not applicable to MP3 since Kerite Company's TPNS Jacketed Cables Model J/C 750 MCM, 5KV, is not used or installed at MP3. Additionally, EEQ-TRA-107.1 is not referenced within EQR 107 file and therefore, not applicable to MP3.

To determine which TRAs are applicable from the electrical Equipment Qualification Master List (EEQML) index, the vendor EQR file needs to be reviewed since, the index only provided the vendor EQR number.
Realizing that this can be confusing the EQML was enhanced to include the specific EQR and TRA numbers in the index. This was accomplished by incorporation of DCN DM3-00-1961-97 into Specification SP-M3-E0353.

NU has concluded based on the above that Discrepancy Report, DR-MP3-0779, does not represent a discrepant condition.

Conclusion:
NU has concluded that Discrepancy Report, DR-MP3-0779, does not represent a discrepant condition. Since, Test Report Assessment No. EEQ-TRA-107.1 is not applicable to MP3. Significant level criteria does not apply as this is not a discrepant condition.

Previously Identified by NU? ○ Yes ◉ No Non Discrepant Condition? ◉ Yes ○ No

Resolution Pending? ○ Yes ◉ No Resolution Unresolved? ○ Yes ◉ No

		Acceptable	Not Acceptable	Review Needed	Date
Initiator:	Yassin, S.	☒	☐	☐	2/25/98
VT Lead:	Neri, Anthony A	☒	☐	☐	2/21/98
VT Mgr:	Schopfer, Don K	☒	☐	☐	2/26/98
IRC Chmn:	Singh, Anand K	☐	☐	☐	
Date:					

SL Comments:

Northeast Utilities
Millstone Unit 3

ICAVP
Discrepancy Report

DR No. DR-MP3-0788

Review Group: System
Review Element: System Design
Discipline: Electrical Design
Discrepancy Type: Calculation
System/Process: N/A
NRC Significance level: NA

DR RESOLUTION ACCEPTED

Potential Operability Issue
○ Yes
◉ No

Date FAXed to NU:

Date Published: 1/10/98

Discrepancy: Value used for motor contribution to fault is not referenced. (Calculation 123E).

Description: This calculation determines the minimum 1000 V power cable size under fault conditions. The calculation assumes a motor contribution to the fault of 2500 kVA but does not provide the basis for this assumption.

In determining motor contribution for a fault, industry standards suggest 3.6 times full load current for induction motors and 4.8 times full load current for synchronous motors. The basis for the 2500 kVA short circuit motor contribution should be provided.

		Valid	Invalid	Review Needed	Date
Initiator:	Crockett, Ed.	☒	☐	☐	12/12/97
VT Lead:	Neri, Anthony A	☒	☐	☐	12/16/97
VT Mgr:	Schopfer, Don K	☒	☐	☐	12/23/97
IRC Chmn:	Singh, Anand K	☒	☐	☐	12/31/97

Date:

INVALID:

Date: 2/23/98

RESOLUTION: Disposition:

NU has concluded that the issue reported in Discrepancy Report DR-MP-3-0788 does not represent a discrepant condition.Instead of using the industry assumption of 3.6 induction/4.6 synchronous times full load motor current, NU has used a more conservative standard of 2500 KVA for their 480 VAC load system.

Assuming, HP=KVA, and the industry assumption of 3.6 times full load amperes for induction motors, the 2500 KVA figure would equate to approximately 700 HP.

MP3's load center transformers are rated for 1000 KVA. From calculation NL-038, the worst case loading on a 1000 KVA transformer is less than 700 KVA. Motors comprise approximately 2/3's (approx. 470 HP) of the 480 VAC loading. Therefore the 2500 KVA is a more conservative assumption than using 3.6 or 4.6 times full load amperes.

Significance level criteria does not apply as this is not a discrepant condition.

Conclusion:

NU has concluded that the issue reported in Discrepancy Report DR-MP3-0788 does not represent a discrepant condition. Instead of using the industry assumption of 3.6 induction/4.6 synchronous times full load motor current, NU has used a more conservative standard of 2500 KVA for their 480 VAC load system.

Significance level criteria does not apply as this is not a discrepant condition.

Previously Identified by NU?	○ Yes	◉ No	**Non Discrepant Condition?**	◉ Yes	○ No
Resolution Pending?	○ Yes	◉ No	**Resolution Unresolved?**	○ Yes	◉ No

		Acceptable	Not Acceptable	Review Needed	Date
Initiator:	Warner, I.	☒	☐	☐	2/23/98
VT Lead:	Neri, Anthony A	☒	☐	☐	2/23/98
VT Mgr:	Schopfer, Don K	☒	☐	☐	2/26/98
IRC Chmn:	Singh, Anand K	☐	☐	☐	
Date:					

SL Comments:

Northeast Utilities
Millstone Unit 3

ICAVP
Discrepancy Report

DR No. DR-MP3-1020

Review Group: System
Review Element: System Design
Discipline: Piping Design
Discrepancy Type: Calculation
System/Process: NEW
NRC Significance level: NA

DR RESOLUTION ACCEPTED

Potential Operability Issue
○ Yes
◉ No

Date FAXed to NU:

Date Published: 2/9/98

Discrepancy: Effect of Fluid Transient induced header movements on 4" branch line not considered

Description: In the process of reviewing the following documents,

(1) 12179- NP(F)-X7923 Rev 2, CCN # 01, 11-7-97
(2) 12179- NP(F)-X7925 Rev 2, CCN # 1 through CCN # 7 (part "C" and part "D"), 9-23-97

we noted the following discrepancy:

Header movements for the 12" line resulting from fluid transient loads, as analyzed in (2), have not been considered in the stress analysis of the decoupled 4" branch piping analyzed in (1).

Note:

Calculation (1) has been revised per modification DCR-M3-97045, Rev 0

		Valid	Invalid	Review Needed	Date
Initiator:	Patel, Ramesh.D	☒	☐	☐	2/2/98
VT Lead:	Neri, Anthony A	☒	☐	☐	2/2/98
VT Mgr:	Schopfer, Don K	☒	☐	☐	2/4/98
IRC Chmn:	Singh, Anand K	☒	☐	☐	2/4/98

Date:

INVALID:

Date: 2/23/98

RESOLUTION: Response ID: M3-IRF-01779

Disposition:
NU has concluded that Discrepancy Report DR-MP3-1020 does not represent a discrepant condition. Calculation NP(F)-X7925 addresses the piping between the containment encapsulation and RSS pump suction. Calculation NP(F)-X7923 addresses the piping between the RSS pump discharge and the RSS Heat Exchangers.

New mini-flow lines were added to the "C" and "D" RSS trains and modeled in stress calculation NP(F)-X7923. These lines tie back into stress problem NP(F)-X7925 as de-coupled branch lines, and are therefore not included with this stress model. Stress calculation NP(F)-X7925 does not have a fluid transient case due to the low magnitude of the predicted loads (refer to fluid transient calculation NP(B)-163FA, rev. 3, Waterhammer

Analysis of Recirculation Spray System, sent in response to RFI-1008 on 1/9/98); therefore there are no header movements to consider at the connection of the 4" mini-flow lines to the 12" main header.

Significance level criteria do not apply as this is not a discrepant condition.

Conclusion:
NU has concluded that Discrepancy Report DR-MP3-1020 does not represent a discrepant condition. Stress calculation NP(F)-X7925 does not have a fluid transient case due to the low magnitude of the predicted loads, as supported by calculation NP(B)-163FA, rev. 2. Therefore there are no header movements to consider at the connection of the 4" mini-flow lines to the 12" main header. Significance level criteria do not apply as this is not a discrepant condition.

Previously Identified by NU?	○ Yes	◉ No	Non Discrepant Condition?	◉ Yes ○ No
Resolution Pending?	○ Yes	◉ No	Resolution Unresolved?	○ Yes ◉ No

		Acceptable	Not Acceptable	Review Needed	Date
Initiator:	Patel, Ramesh D	☒	☐	☐	2/23/98
VT Lead:	Neri, Anthony A	☒	☐	☐	2/23/98
VT Mgr:	Schopfer, Don K	☒	☐	☐	2/26/98
IRC Chrm:	Singh, Anand K	☐	☐	☐	
Date:					

SL Comments:

Northeast Utilities
Millstone Unit 3

ICAVP
Discrepancy Report

DR No. DR-MP3-0349

Review Group: System
Review Element: System Design
Discipline: Mechanical Design
Discrepancy Type: Component Data
System/Process: RSS
NRC Significance level: 3

DR RESOLUTION REJECTED

Potential Operability Issue
- ○ Yes
- ◉ No

Date FAXed to NU:

Date Published: 1/10/98

Discrepancy: Specs SP-ME-784 is inconsistent with PCDR 3-93-015

Description: Specification SP-ME-784 through Revision 2 only applies to valves 3RSS*MOV23A,B,C,D, as they were replaced via PDCR 3-93-015. However, the specification is misleading because it contains valve data sheets for valves 3RSS*MOV20A,B,C,D, 3RSS*MOV23A,B,C,D, and 3QSS*MOV34A,B, but PDCR 3-93-015 addresses only the replacement of valves 3RSS*MOV23A,B,C,D. No design change packages are identified to implement the replacement of valves 3RSS*MOV20A,B,C,D and 3QSS*MOV34A,B as defined in specification SP-ME-784.

The design specifications SP-ME-784 through Revision 2 and 2362.200-164 through Addendum 1 for valves 3RSS*MOV23A,B,C,D overlap each other but contain conflicting data.

Specifications SP-ME-784, the more recent of the two specifications, is for the replacement of Pratt Butterfly Valves only, and not the associated motor operators.

Specification 2362.200-164, the earlier specification, identifies the design requirements for both the butterfly valves and their associated motor operators. As such, this specification provides synergistic requirements such as valve stroke time, motor-operator hammer blow feature, and equipment qualification with respect to electrical components, and other motor operator features. The seismic loading of the motor operator is addressed in PDCR 3-93-015.

Specification SP-ME-784 does not cross reference specification 2362.200-164 or any other motor-operator specification. Therefore, specifications SP-ME-784 and 2362.200-164 cannot be reconciled to fully define the design and performance requirements for valves 3RSS*MOV23A,B,C,D, relative to stroke time, equipment qualification, and operator hammer blow feature.

		Valid	Invalid	Review Needed	Date
Initiator:	Feingold, D. J.	☒	☐	☐	12/18/97
VT Lead:	Neri, Anthony A	☒	☐	☐	12/18/97
VT Mgr:	Schopfer, Don K	☒	☐	☐	12/23/97
IRC Chmn:	Singh, Anand K	☒	☐	☐	12/31/97

Date:

INVALID:

Date: 2/2/98

RESOLUTION: Disposition:

NU has concluded that Discrepancy Report, DR-MP3- 0349, does not represent a discrepant condition for the following reasons:

1. Specification SP-ME-0349 through revision 2 provides purchase and design requirements for replacement Henry Pratt valves. PDCR 3-93-015 provides the design change package for the actual replacement of valves 3RSS*MOV23 A,B,C,D only and references the specification as the source and design requirements of the new valves. There are no plans to install valves 3RSS*MOV20A,B,C,D and 3QSS*MOV34A,B.

When valves 3RSS*MOV20A,B,C,D and 3QSS*MOV34A,B are replaced, new design change packages must be issued.

2. Specification SP-ME-0349 purchased new style valves with field replaceable seats in lieu of seats bonded to the valve bodies, provided more restrictive service conditions, and expanded seismic requirements. After installation, DCN DM3-S-00139-93 required S&W Specification 2362.200-164 be revised to remove valves applicable to 3RSS*MOV23A,B,C,D. Specification SP-ME-0349 will replace S&W Specification 2362.200-164 as the replacement valves are installed.

3. This statement is correct.

4. DCN DM3-S-0957-93 revised the MOV Test Plan to VOTES Testing in accordance with the Corporate MOV Program (NRC Generic Letter 89-10). The design requirements identified in S&W Specification 2364.200-164 are deleted per DCN DM3-S-00139-93.5. S&W Specification 2362.200-164 and Specification SP-ME-784 are different specifications. Specification SP-ME-784 provides valve design requirements only. S&W Specification 2362.200-164 has been replaced by the Corporate MOV Program for valves 3RSS*MOV23A,B,C,D.Significance Level Criteria do not apply as this is not a discrepant condition.

Conclusion:

NU has concluded that Discrepancy Report, DR-MP3- 0349, has identified a condition which is not discrepant. One specification is a NU procurement/design document applicable to replacement valves and the other is an original AE procurement specification which is being replaced as replacement valves are installed. Significant Level Criteria do not apply as this is not a discrepant condition.

Previously Identified by NU? ○ Yes ◉ No Non Discrepant Condition? ○ Yes ◉ No

Resolution Pending? ○ Yes ◉ No Resolution Unresolved? ○ Yes ◉ No

		Acceptable	Not Acceptable	Review Needed	Date
Initiator:	Feingold, D. J.				
VT Lead:	Neri, Anthony A	☐	☒	☐	2/2/98
VT Mgr:	Schopfer, Don K	☐	☒	☐	2/21/98

PT Mgr:	Schopfer, Dan K				
IRC Chmn:	Singh, Anand K	☐	☒	☐	2/21/98
		☐	☒	☐	2/26/98
Date:	2/2/98				

SL Comments: Note: In Northeast Utilities' disposition, the reference to "Specification SP-ME-0349" is assumed to be a typographical error, where the actual reference is "Specification SP-ME-784". "0349" is the number of the discrepancy report.

It is unclear which design specification applies to the motor operators for valve 3RSS*MOV23A,B,C,D given the response that states:

"DCN DM3-S-00139-93 required S&W Specification 2362.200-164 to be revised to remove valves applicable to 3RSS*MOV23A,B,C,D. Specification SP-ME-0349 will replace S&W Specification 2362.200-164 as the replacement valves are installed."

and

"S&W Specification 2362.200-164 has been replaced by the Corporate MOV Program for valves 3RSS*MOV23A,B,C,D."

Consequently, a determination cannot be made related valve stroke time (FSAR Table 6.3-1), motor operator equipment qualification, and motor operator hammer blow feature requirement (FSAR Section 6.3.2.2.5).

Northeast Utilities
Millstone Unit 3

ICAVP
Discrepancy Report

DR No. DR-MP3-0370

Review Group: System
Review Element: System Design
Discipline: Piping Design
Discrepancy Type: Calculation
System/Process: RSS
NRC Significance level: 3

DR RESOLUTION REJECTED

Potential Operability Issue
○ Yes
◉ No

Date FAXed to NU:

Date Published: 10/23/97

Discrepancy: Safety factors used for potentially non conforming welds may be unconservative

Description: In the process of reviewing the following documents,

(i) Calculation No. 79-236-397GP, Rev. 01, Fracture Mechanics Evaluation of Embedded Containment Sump Line
(ii) SDP-RSS-01361M3,Rev. 04, 5/29/97 Stress Data Package, RSS

and the additional references

(iii) Newman and Raju, "Stress-Intensity Factors for Internal Surface Cracks in Cylindrical Pressure Vessels", Transactions of ASME, Vol. 102, November 1980.
(iv) G.C.Sih, "Handbook of Stress Intensity Factors", Institute of Fracture and Solid Mechanics, Lehigh University, 1973.

we note the following:

Background:

1)Calculation 79-236-397GP,(i), is based on the formulations provided by Newman, reference (iii), for the Applied Stress Intensity, KI. On page 4 it is noted that: "This solution is valid to at least 90% through wall [defects] ..."

The initial condition assumed for the evaluation is a 95% through wall defect which would have passed the initial hydro pressure test.

2)Furthermore, assumption 2) on page 12 acknowledges that "At 95% they [the solution] may no longer be very accurate" and "...substantial errors in the calculation of fatigue growth would not change the conclusions."

3)The final acceptance of this condition is not based on demonstration that the end of design life condition satisfies the original design basis (ASME III) but rather that the computed safety factors are comparable to those implied by the ASME Code. The computed safety factor is 3.0 whereas the stated safety factor implied by ASME Section XI is 3.2.

Discussion:

Based on a review of reference (iii), we believe the limits of the Newman formulation are 80%, a defect with an a/t ratio (crack depth to wall thickness) of 0.8.

Therefore, the a/t ratio (0.95) exceeds the limitation of the KI stress intensity factor formula. It is our opinion that it may not be conservative to use the formula for this higher a/t ratio. This conclusion is based on a calculation using the KI formula provided by Sih's Handbook (reference iv) for an edge crack on a finite width plate subject to tension loading.

Comparing the results of these two formulations yields the following;

The ratio of Newman's KI values for a/t=0.95 and a/t=0.8 is 1.845

The ratio of Sih's KI values for a/t=0.95 and a/t=0.8 is 9.035

Therefore, the potential for a lower value of KI will under predict the value of crack growth per load cycle, da/dN, by the difference in KI to the power 3.25.

It is also noted that the calculation identifies the design conditions for the affected piping as 235 degrees F, whereas the SDP (reference ii) identifies the maximum operating and design temperatures as 257 degrees F and 260 degrees F, respectively. This will have a nominal influence on the values for Flow Stress (collapse) and KIC used.

Discrepancy:

The formulation used to calculate crack growth rates may be unconservative for the postulated a/t ratio of 0.95 when compared to other methods. A higher growth rate would result in a lower safety factor than predicted and less than the stated safety factor implied by ASME Section XI.

		Valid	Invalid	Review Needed	Date
Initiator:	Olson, P.R.	☒	☐	☐	10/2/97
VT Lead:	Neri, Anthony A	☒	☐	☐	10/10/97
VT Mgr:	Schopfer, Don K	☒	☐	☐	10/14/97
IRC Chmn:	Singh, Anand K	☒	☐	☐	10/18/97

Date:

INVALID:

Date: 2/13/98

RESOLUTION: M3-IRF-01374

Disposition:
NU has concluded that Discrepancy Report, DR-MP3-0370, does not represent a discrepant condition.

NU concurs that the depth of the postulated flaw evaluated in the above referenced calculation was greater than the range of applicability of the equations used. This issue was acknowledged and discussed in the calculation.

To address the specific issues identified in this DR, the following discussion is provided:

1) At the time that the calculation was performed, were there standards/equations (i.e. ASME or equivalent) available to evaluate deep (i.e. 95% through wall) part through wall flaws?

No. Based on a literature survey performed at that time, it was concluded that no equations were readily available to evaluate a 95% through wall flaw which was considered to be the bounding flaw size that could have survived the hydrostatic pressure test.

2) Are the equations used expected to yield reasonable and/or conservative results?

Yes. Equations for part-through wall flaws are not expected to result in grossly inaccurate results for deeper (i.e. > 80% through wall) flaws and are also expected to be conservative. The basis for this conclusion is that the KI equations used to calculate the stress intensity are based on linear elastic fracture mechanics (LEFM) concepts which neglect any effects of crack tip yielding typical of deep cracks (i.e. small remaining ligament). Consideration of ligament yielding results in a lower KI value since some of the potential crack propagating energy is converted to plastic strain. Furthermore, the Newman equations used in the calculation are the most conservative of the equations considered by ASME XI and included as part of the flaw acceptance standards as described in Attachment 3 of the calculation. These equations are also considered to be more accurate than those published by G. C. Sih in 1973 since Newman's equations included further technology advances and additional piping test data not available in 1973. Also, NU does not concur that an edge crack on a finite width plate provides a better representation of the actual stress field around the crack tip than the Newman equations used in the subject calculation.

3) Does the accuracy of the calculation impact the conclusion?

No. As the calculation acknowledges, there is the potential for inaccuracies in the calculated values. However, the purpose of the calculation was not to assess the structural integrity of a known flaw but rather to assess the potential crack growth of a postulated flaw. The calculation concluded that the 0.3562" postulated flaw would be expected to grow to approximately 0.35629" by the end of life of the plant. If one were to assume that the growth in crack depth was unconservative by a factor of 10, this would have an impact of approximately 0.2% on the final crack size. A factor of 100 would have an impact of approximately 2% on the final crack size. Since the purpose of a flaw tolerance evaluation is to assess the potential behavior of a flaw rather than to demonstrate strict regulatory compliance with any one specific requirement, inaccuracies of this magnitude (i.e. 2%) are considered to be within the overall accuracy of the evaluation. NU believes that the conclusion reached in the calculation that the postulated flaw is not expected to exhibit significant flaw growth during the life of the plant, remains valid

and appropriate. It should further be noted that the affected portion of the piping system has since been encased in concrete which provides additional structural support for the imposed loads.

Compliance with ASME III.

Since ASME III does not allow cracks to be left in service, any component/pipe which contains cracks can not be demonstrated to be in compliance with ASME III. The calculation acknowledged the fact that any location which contained a flaw similar to that evaluated in the calculation, would be outside of the limits of the ASME Code and therefore require regulatory approval.

Compliance with ASME XI margins of safety.

Page 9 of 14 of the calculation provides a comparison of the estimated normal and faulted margins of safety (i.e. 3.0 and 2.6 respectively) compared to the ASME Code required margins of safety (i.e. 3.2 and 1.4 respectively). The DR questions whether the appropriate margins of safety are satisfied.

As discussed above, the purpose of the calculation was to demonstrate that future crack growth will not have a significant impact on the structural integrity of the piping. The margins of safety provided on page 9 of the calculation are based primarily on the successful completion of a system hydrostatic pressure test at 155 psi as compared to the design pressure of 60 psi.

Even though the calculation states that the implied ASME margins of safety are 3.2 and 1.4, later Editions of the ASME Code (i.e. IWB-3640) clarify the minimum required margins of safety to be 2.77 and 1.39 respectively for circumferential flaws and 3.0 and 1.5 for axial flaws in stainless steel piping. Both of these values are equal to or less than the calculated margins of 3.0 and 2.6 respectively.

Accuracy of the system design temperature

The DR indicates that the calculation lists the system design temperature as 235° F while reference ii) of the DR lists the design temperature as 260° F and that this discrepancy will have a nominal influence on the values for flow stress and KIC. Although NU agrees that the actual design temperature is different from that provided by Stone & Webster in attachment 4 of reference i), this temperature was not used in the calculation and therefore has no impact on the results of the calculation. The flow/collapse stress used in the calculation was obtained from the results of the testing provided in EPRI report NP-2472 (reference 2 of the calculation). Furthermore, the ASME XI, Flaw Evaluation Subcommittee has published the basis for the stainless steel evaluation procedures of IWB-3640 (Attachment 1 to this response). Page 2-5 discusses the concept of flow stress and defines it as 3Sm since this provides a reasonable estimate of the onset of plastic collapse in stainless steel piping. Since the

value of Sm for SA-312, TP304 material does not depend on temperature for temperatures less than 300° F (see ASME III, Appendix I, Winter 1985 Addenda) a change in system design temperature from 235° F to 260° F will not impact the flow stress. Furthermore, a slightly higher system design temperature has a beneficial impact on the fracture toughness (KIC) of the stainless steel because fracture toughness increases with increased temperature.

Based on the above discussion, NU has concluded that the results of the flaw tolerance evaluation performed in the above calculation remain appropriate for its intended use. Significance Level Criteria does not apply because this is not a discrepant condition.

Attachment: EPRI NP-4690-SR, "Evaluation of Flaws in Austenitic Steel Piping", Dated July 1986.

Conclusion:

NU has concluded that Discrepancy Report, DR-MP3-0370, does not represent a discrepant condition. The purpose of the subject calculation was to assess the potential for fatigue crack growth in embedded sections of the Recirculation Spray System piping through the end of the plant life using a flaw tolerance approach. NU concurs that the limiting flaw depth to thickness ratio was greater than the range of applicability of the equations used in the calculation. However, this issue was recognized and evaluated in the calculation with the conclusion that the expected accuracy of the results was consistent with the accuracy of a flaw tolerance evaluation. Significance Level Criteria does not apply as this is not a discrepant condition.

Previously identified by NU? ○ Yes ◉ No Non Discrepant Condition? ○ Yes ◉ No

Resolution Pending? ○ Yes ◉ No Resolution Unresolved? ○ Yes ◉ No

		Acceptable	Not Acceptable	Review Needed	Date
Initiator:	Olson, P.R.	☐	☒	☐	2/13/98
VT Lead:	Neri, Anthony A	☐	☒	☐	2/21/98
VT Mgr.	Schopfer, Don K	☐	☒	☐	2/21/98
IRC Chmn:	Singh, Anand K	☐	☒	☐	2/26/98
Date:	2/13/98				

SL Comments: The conditions leading to the preparation of the subject calculation were that the embedded RSS sump line pipe welds had questionable documentation. Volumetric examinations to establish the actual weld condition was not possible.

Lacking any clear evidence to establish the condition of the welds, it would be prudent to assume that a weld defect may exist and that the defect would not meet ASME Section III Code limitations. Given that situation, an exemption request with regulatory approval would be required. This was recognized in conclusion 5 of the calculation and acknowledged in the response provided by NU.

S&L believes the final closure of the issue be based on verification that the required regulatory exemption was filed and granted. This aspect of the condition is not related to the resolution of any specific technical comment on the calculation itself, but related to the inherent assumption regarding the condition of the weld.

The NU response does not identify the documentation which supports the stated need for regulatory approval. Therefore, we request that NU identify the documentation that was provided to address the Code exemption for the weld condition.

Observations on the IRF disposition of technical issues

The following observations are provided on NU's response to the technical issues raised in the DR. We do not believe these observations require further response from NU based on the following two considerations applicable to the issue at question;

· The subject piping experiences limited loading conditions (primarily pressure). In the absence of other loading or mechanisms which contribute to flaw growth, the expected propagation of an initial flaw would be small for a wide range of potential flaw sizes (a/t ratios) for which good predictive methods are available.

· The postulation of an initial flaw with an a/t ratio of 0.95 is judged to be conservative given that included flaws encountered during acontrolled welding process would be expected to be much smaller.

Specific Observations on NU Responses

It is noted that the 0.95 a/t ratio for the postulated flaw size does not define a real upper bound limit at which a leak might be expected under the 155 psig hydro pressure. Using the method provided in the reference report, EPRI NP-4690-SR, an axial flaw with an a/t ratio of 0.99 and crack length of 2*t can be shown to have suvived the applided hydro test pressure. Therefore the initial condition for a "worst case" postulated flaw could have been even greater than used in the calculation.

The calculation addressed a potential flaw with an a/t ratio of 0.95 This case is outside of the limits of available predictive equations specifically developed for crack growth evaluations. In the absence of other published data, the Shi approach was suggested for this case as a point of comparison with the calculation's methods, albeit conservative or not.

Finally, the only load considered significant to potential crack growth is the pressure (hoop) stress effect. Given the D/t ratio for the subject pipe, we do not believe the encasing concrete provides any significant additional structural support in the hoop direction ,hat would arrest potential crack growth.

Northeast Utilities
Millstone Unit 3

ICAVP Discrepancy Report

DR No. DR-MP3-0563

Review Group: Operations & Maintenance and Testing
Review Element: Test Procedure
Discipline: Operations
Discrepancy Type: Licensing Document
System/Process: SWP
NRC Significance level: 4

DR RESOLUTION REJECTED

Potential Operability Issue
○ Yes
◉ No

Date FAXed to NU:

Date Published: 11/24/97

Discrepancy: Service Water Pump Testing Inconsistent with FSAR Requirement

Description: Service Water Pump Testing Inconsistent with FSAR Requirement

FSAR Section 7.3.1.1.5 states:

"The service water system is periodically tested in accordance with the Technical Specifications.

"This testing will consist of manually starting the pump during normal surveillance of the system or the breaker for the pump will be in the test position. Once the pump is running or the breaker is in the test position, the AUTO start and tripping is verified using the emergency generator load sequencer with safety signals generated internally or externally to the sequencer."

The following two surveillances that test the operation of the service water pumps were reviewed to confirm that the above requirements were being satisfied, SP 3626.4, "Service Water Pump 3SWP*P1A Operational Readiness Test" (including checksheet OPS Form 3626.4-1) and SP 3646A.18, "Train B ESF With LOP Test (IPTE)". No evidence could be found to confirm that the requirements were being met. Neither procedure documents a manual start of the pump. Page 2 of SP 3626.4 (Basis Document edition) states in the Basis Information block on page 2 that:

"This procedure provides for two sequencer starts and eliminates the manual start from the control room. No written requirement for a manual start has been found checking the FSAR and the ISI manual. The conclusion has been made that a manual start is not necessary since the pumps are started for other reasons during the month. If a manual start is needed, credit can be taken for pump C in this procedure and for pump A in 3626.6, since the pumps are started to switch lineup."

Our interpretation of the FSAR requirement is to manually start the pumps so that the AUTO trip function and sequencer loading on the EDG can be verified. Both procedures test the AUTO start of the pumps on the load sequencer but do not test the AUTO trip function.

Additionally, a review of the OPS forms associated with these procedures indicate that change of pump operating states are not documented.

It was also noted that the FSAR requirement that the pumps be started manually or that the breaker for the pump be in the test position are not equivalent actions. The equivalent action to a manual pump start would be to place the breaker in the test position and close the breaker.

The testing currently performed does not adequately demonstrate that the FSAR requirements are being satisfied.

		Valid	Invalid	Review Needed	Date
Initiator:	Tamlyn, Tom	☒	☐	☐	10/31/97
VT Lead:	Bass, Ken	☒	☐	☐	10/31/97
VT Mgr:	Schopfer, Don K	☒	☐	☐	11/6/97
IRC Chmn:	Singh, Anand K	☒	☐	☐	11/19/97

Date:

INVALID:

Date: 2/19/98

RESOLUTION: Disposition:
NU has concluded that Discrepancy Report, DR-MP3-0563, has identified a condition not previously discovered by NU which requires correction. This discrepancy meets the criteria specified in NRC letter B16901 and 17010. It has been screened per U3 PI-20 criteria and found to have no operability or reportability concerns and meets the Unit 3 deferral criteria. CR M3-98-0167 has been written to develop and track resolution of this item per RP-4.

Conclusion:
NU has concluded that Discrepancy Report, DR-MP3-0563, has identified a condition not previously discovered by NU which requires correction. This discrepancy meets the criteria specified in NRC letter B16901 and 17010. It has been screened per U3 PI-20 criteria and found to have no operability or reportability concerns and meets the Unit 3 deferral criteria. CR M3-98-0167 has been written to develop and track resolution of this item per RP-4.

Previously Identified by NU? ○ Yes ◉ No Non Discrepant Condition? ○ Yes ◉ No

Resolution Pending? ○ Yes ◉ No Resolution Unresolved? ○ Yes ◉ No

		Acceptable	Not Acceptable	Review Needed	Date
Initiator:	Spear, R.	☐	☒	☐	2/19/98
VT Lead:	Bass, Ken	☐	☒	☐	2/23/98
VT Mgr:	Schopfer, Don K	☐	☒	☐	2/25/98
IRC Chmn:	Singh, Anand K	☐	☐	☐	

Date: 2/19/98

SL Comments: S&L does not concur with NU's determination that this discrepancy meets the Unit 3 deferral criteria. The DR identifies a discrepancy between the FSAR and plant procedures which have a direct impact on plant safety and operation.

Northeast Utilities
Millstone Unit 3

ICAVP
Discrepancy Report

DR No. DR-MP3-0658

Review Group: System
Review Element: System Design
Discipline: Mechanical Design
Discrepancy Type: Component Data
System/Process: HVX
NRC Significance level: 3

DR RESOLUTION REJECTED

Potential Operability Issue
○ Yes
◉ No

Date FAXed to NU:

Date Published: 11/24/97

Discrepancy: ABVS Filter Unit Electric Heater Capacity

Description: During review of the Auxiliary Building Ventilation System (ABVS) filter units 3HVR*FLT1A/1B a discrepancy regarding the capacity of the electric heating coil in the filter units was identified.

Regulatory Guide 1.52, Rev. 2, position C.3.b requires the heaters to be designed, constructed, and tested in accordance with the requirements of Section 5.5 of ANSI N509-1976. ANSI N509-1976 Section 5.5.1 states that the heater shall be sized on the basis of heat transfer calculations showings its capability of reducing the entering air-steam mixture (RH=100%) to approximately 70% in the housing space between the moisture separator and prefilter stage, at system design flowrates. FSAR Table 1.8-2 and FSAR Table 6.5-1 state that the filter units are in compliance with Regulatory Guide 1.52, Rev. 2, position C.3.b.

The results of calculations 97-ENG-01453M3, Rev. 0 and B235-9915, Rev. B indicate that for degraded voltage and the specified 170°F, 100%RH entering air conditions the electric heater capacity results in a relative humidity of 75.2%. The 75.2% RH value does not meet the RG 1.52 requirements.

		Valid	Invalid	Review Needed	Date
Initiator:	Stout, M. D.	☒	☐	☐	11/11/97
VT Lead:	Neri, Anthony A	☒	☐	☐	11/11/97
VT Mgr:	Schopfer, Don K	☒	☐	☐	11/17/97
IRC Chmn:	Singh, Anand K	☒	☐	☐	11/20/97

Date:

INVALID:

Date: 2/16/98

RESOLUTION: NU has concluded that the issue reported in Discrepancy Report, DR-MP3-0658, does not represent a discrepant condition.

ACR M3-97-0161 was written on 6/1/96 to document discrepancies between the minimum design voltage for Class 1E heaters and the low voltage capability of the heaters to perform their design basis function.

A design basis review of the degraded voltage calculation (NL-042) was performed and documented on ACR M3-97-0119, which was determined to be reportable. During the review of that ACR, it was noted that the acceptance criteria used for motors (90% of rated voltage, 460 volts) was also applied to resistive devices (heaters, rated 480 volts). This results in a

25% reduction in heater output. No justification for this assumption was given in calculation NL-042. Upon further review it did not appear that this reduced operating margin was accounted for in the heater sizing calculation either. This finding was reinforced by a previous review for reportability (Ref 92-25) whereby, neither the electrical nor mechanical calculation accounted for operating margin at reduced voltage (voltage just above the degraded voltage setpoint) during a DBA condition. At that point the ACR-M3-97-0161 was generated for the suspect equipment and a formal reportabilty review commenced.

ACR M3-97-0161, Item 4, discussed Auxiliary Building Ventilation System (ABVS) filter units 3HVR*FLT1A/1B. CVI Inc., provided the MP3 filter assemblies. CVI Calculation (DWG B2553-9915, change B dated 4-21-92), determined the relative humidity at design flow and degraded voltage (414V) to be 75.2% RH for the Auxiliary Building Ventilation System (ABVS) filter units 3HVR*FLT1A/1B. This calculation determined that Auxiliary Building Ventilation System (ABVS) filter units 3HVR*FLT1A/1B does in fact meet the RH criteria of ANSI N509 at design flow and degraded voltage. The Conclusion was based on the following criteria.

ERDA-76-21, Nuclear Air Cleaning Handbook, for Design, Construction and Testing of High-Efficiency Air Cleaning System for Nuclear Application is referred to as a supplement to ANSI-N509. ERDA-76-21 recommends conservative efficiency values for design of 2 inch impregnated activated carbon beds (ref. section 3.4.2 and table 3.11).

For example, from table 3.4.2, at 85% or less RH, the design for charcoal is 95% efficient at 70° and 98% efficient at 270°. These temperatues are consistant with the expected condition when the heaters are required. The ERDA values are conservative and have been validated with the charcoal testing vendor (NCS) where NCS's assessment stated that charcoal could exceed 80% relative humidity without impacting charcoal adsorption measurably. The MP3 Radiological calculations credit charcoal filters at 95% efficiency. Although, the purchase specification states each electric heater shall reduce the relative humidity to less than 70%, it also states that the heaters are to meet design requirements of ANSI N509, which states that "the heaters shall be sized on the basis of heat transfer calculations showing its capability of reducing the maximum expected relative humidity of the entering air-stream mixture to approximately 70% in the housing space". The purchase specification was providing margin when it specified less than 70% while meeting the specified requirements of ANSI N509. This is the widely recognized and acceptable requirement. Therefore, the filtration unit heaters meet the purchase specification requirements of ANSI-N509. Based on Northeast Utilities Memo No. PSM3-92-066 the effect on the charcoal sample penetration test with higher relative humidities of 75.2% in the Auxiliary Building Filtration System (#HVR*FLT1A & 1B) will be unmeasurable. The memo further stated that (NNECO) could exceed relative humidity without impacting the charcoal

absorption to a measurable level.

Additionally, concerns were sufficiently substantiated to question the validity of the degraded Grid Voltage Calculations (CR M3-97-0119 & LER 97-010). Reviews performed on MP3 heater applications found that the heaters were able to perform their design functions with the exception of the Hydrogen recombiner heaters. The corrective action plan for CR M3-97-0119 required a comprehensive review of all the class 1E components to ensure operability at the voltage levels at the DGV setpoint analytical limit. (see LER 97-011-00). Calculation NL-038 documents the voltage profile and load flow and NL-042 determines the DGV setpoint. Calculation 97-ENG-01453M3 evaluates the heater minimum voltage capacity. This Calculation, 97-ENG-01453M3, has concluded that minimum available voltage is 414VAC for heaters at all locations except those at the Auxiliary Building Area. The Auxiliary Building Area Heaters Relative Humidity will be approximately 5% higher than 70% requirement, at a temperature of 170°. This environmental condition should only last 30 minutes and then return to normal. Supplemental calculations, following the CVI calculation method show that at 120°F the heaters are capable of achieving 70% RH at degraded voltage (Ref. Calc. NL-038 Rev. 2, CCN 7, included in Package).conditions. The actual degraded voltage is greater than 414/422VAC as determined from Calculation NL-038 (VN4500-F02-001).

Based on discussion above the plant was not and is not outside its design basis and this subject is not reportable.

Therfore, NU has concluded that the issue reported in Discrepancy Report, DR-MP3-0658, does not represent a discrepant condition.

Significance level criteria do not apply as this is not a discrepant condition.

Attachments:
1. ACR M3-97-0161
2. Ref 92-25 & PS M3-92-036
3. NL-038, Rev 2, CCN7
4. 97-ENG-01453M3

Previously Identified by NU? ○ Yes ◉ No Non Discrepant Condition? ○ Yes ◉ No

Resolution Pending? ○ Yes ◉ No Resolution Unresolved? ○ Yes ◉ No

		Acceptable	Not Acceptable	Review Needed	Date
Initiator:	Stout, M. D.				
VT Lead:	Neri, Anthony A	☐	☒	☐	2/16/98
VT Mgr:	Schopfer, Don K	☐	☒	☐	2/21/98
IRC Chmn:	Singh, Anand K	☐	☒	☐	2/21/98
Date:	2/16/98	☐	☒	☐	2/26/98

SL Comments: Disagree with NU's response that this is not a discrepant condition.

This is a discrepant condition because FSAR Table 1.8-1 and

Table 6.5-1 do not take exception to nor provide clarification to RG 1.52, Rev. 2, paragraph C.3.b requirements regarding capibility of the electric heating coil to maintain relative humidity of air entering the adsorber below 70%.

NU's response should also address impact on laboratory testing of charcoal adsorbent which is conducted with a 70% relative humidity entering condition.

Review Group: System
Review Element: System Design
Discipline: Mechanical Design
Discrepancy Type: Component Data
System/Process: HVX
NRC Significance level: 3

DR RESOLUTION REJECTED

Potential Operability Issue
○ Yes
◉ No

Date FAXed to NU:

Date Published: 11/24/97

Discrepancy: SLCRS Filter Unit Electric Heating Coil Capacity

Description: During review of the the Supplementary Leak Collection and Release System (SLCRS) filter units 3HVR*FLT3A/3B a discrepancy regarding the capacity of the electric heating coil in the filter units was identified.

Regulatory Guide 1.52, Rev. 2, position C.3.b requires the heaters to be designed, constructed, and tested in accordance with the requirements of Section 5.5 of ANSI N509-1976. ANSI N509-1976 Section 5.5.1 states that the heater shall be sized on the basis of heat transfer calculations showings its capability of reducing the entering air-steam mixture (RH=100%) to approximately 70% in the housing space between the moisture separator and prefilter stage, at system design flowrates. FSAR Table 1.8-2 and FSAR Table 6.5-1 state that the filter units are in compliance with Regulatory Guide 1.52, Rev. 2, position C.3.b.

Calculations 97-ENG-01453M3, Rev. 0 and B235-9915, Rev. B show that at an air flow rate of 8500 scfm and entering air conditions of 120°F & 100% RH the required heater capacity is 36 kW. The capacity of the heater at degraded voltage conditions is 37.2 kW. At the current maximum SLCRS air flow rate of 9,800 cfm shown on P&ID EM-148E-12, the required heater capacity increases above the available capacity of the heaters. This will result in a relative humidity greater than 70%.

		Valid	Invalid	Review Needed	Date
Initiator:	Stout, M. D.	☒	☐	☐	11/11/97
VT Lead:	Neri, Anthony A	☒	☐	☐	11/11/97
VT Mgr:	Schopfer, Don K	☒	☐	☐	11/17/97
IRC Chmn:	Singh, Anand K	☒	☐	☐	11/20/97

Date:

INVALID:

Date: 2/17/98

RESOLUTION: NU has concluded that the issue reported in Discrepancy Report, DR-MP3-0659, has identified a condition previously discovered by NU which does not represent a discrepant condition.

ACR M3-97-0161 was written on 6/1/96 to document discrepancies between the minimum design voltage for Class 1E heaters and the low voltage capability of the heaters to perform their design basis function.

A design basis review of the degraded voltage calculation (NL-042) was performed and documented on ACR M3-97-0119,

which was determined to be reportable. During the review of that ACR, it was noted that the acceptance criteria used for motors (90% of rated voltage, 460 volts) was also applied to resistive devices (heaters, rated 480 volts). This results in a 25% reduction in heater output. No justification for this assumption was given in calculation NL-042. Upon further review it did not appear that this reduced operating margin was accounted for in the heater sizing calculation either. This finding was reinforced by a previous review for reportability (Ref 92-25) whereby, neither the electrical nor mechanical calculation accounted for operating margin at reduced voltage (voltage just above the degraded voltage setpoint) during a DBA condition. At that point the ACR-M3-97-0161 was generated for the suspect equipment and a formal reportabilty review commenced.

ACR M3-97-0161, Item 4, discussed Supplemental Leak Collection and Release System (SLCRS) filter units 3HVR*FLT3A/3B. CVI Inc., provided the MP3 filter assemblies. CVI Calculation (DWG B2553-9915, change B dated 4-21-92), determined the relative humidity at design flow and degraded voltage (414V) to be 73.4% RH for discussed Supplemental Leak Collection and Release System (SLCRS) filter units 3HVR*FLT3A/3B. This calculation determined that discussed Supplemental Leak Collection and Release System (SLCRS) filter units 3HVR*FLT3A/3B does in fact meet the RH criteria of ANSI N509 at design flow and degraded voltage. The Conclusion was based on the following criteria.

· ERDA-76-21, Nuclear Air Cleaning Handbook, for Design, Construction and Testing of High-Efficiency Air Cleaning System for Nuclear Application is referred to as a supplement to ANSI-N509. ERDA-76-21 recommends conservative efficiency values for design of 2 inch impregnated activated carbon beds (ref. section 3.4.2 and table 3.11).

· For example, from table 3.4.2, at 85% or less RH, the design for charcoal is 95% efficient at 70° and 98% efficient at 270°. These temperatues are consistant with the expected condition when the heaters are required. The ERDA values are conservative and have been validated with the charcoal testing vendor (NCS) where NCS's assessment stated that charcoal could exceed 80% relative humidity without impacting charcoal adsorption measurably. The MP3 Radiological calculations credit charcoal filters at 95% efficiency. Although, the purchase specification states each electric heater shall reduce the relative humidity to less than 70%, it also states that the heaters are to meet design requirements of ANSI N509, which states that "the heaters shall be sized on the basis of heat transfer calculations showing its capability of reducing the maximum expected relative humidity of the entering air-stream mixture to approximately 70% in the housing space". The purchase specification was providing margin when it specified less than 70% while meeting the specified requirements of ANSI N509. This is the widely recognized and acceptable requirement. Therefore, the filtration unit heaters meet the purchase specification requirements of ANSI-N509. Based on Northeast

Utilities Memo No. PSM3-92-066 the effect on the charcoal sample penetration test with higher relative humidities of 73.4% in the discussed Supplemental Leak Collection and Release System (SLCRS) filter units 3HVR*FLT3A/B will be unmeasurable. The memo further stated that (NNECO) could exceed relative humidity without impacting the charcoal absorption to a measurable level.

Additionally, concerns were sufficiently substantiated to question the validity of the degraded Grid Voltage Calculations (CR M3-97-0119 & LER 97-010). Reviews performed on MP3 heater applications found that the heaters were able to perform their design functions with the exception of the Hydrogen recombiner heaters. The corrective action plan for CR M3-97-0119 required a comprehensive review of all the class 1E components to ensure operability at the voltage levels at the DGV setpoint analytical limit. (see LER 97-011-00). Calculation NL-038 documents the voltage profile and load flow and NL-042 determines the DGV setpoint. Calculation 97-ENG-01453M3 evaluates the heater minimum voltage capacity. This Calculation, 97-ENG-01453M3, has concluded that minimum available voltage is 414VAC for heaters at all locations except those at the Auxiliary Building Area. The Auxiliary Building Area Heaters Relative Humidity will be approximately 5% higher than 70% requirement, at a temperature of 170°. This environmental condition should only last 30 minutes and then return to normal. Supplemental calculations, following the CVI calculation method show that at 120°F the heaters are capable of achieving 70% RH at degraded voltage (Ref. Calc. NL-038 Rev. 2, CCN 7, included in Package).conditions. The actual degraded voltage is greater than 414/422VAC as determined from Calculation NL-038 (VN4500-F02-001).

Based on discussion above the plant was not and is not outside its design basis and this subject is not reportable. Therefore, NU has concluded that the issue reported in Discrepancy Report, DR-MP3-0659, does not represent a discrepant condition. Significance level criteria do not apply as this is not a discrepant condition.

Attachments:
1. ACR M3-97-0161
2. Ref 92-25 & PS M3-92-066
3. NL-038, Rev. 2, CCN 7
4. 97-ENG-01453M3

Previously Identified by NU? ○ Yes ◉ No Non Discrepant Condition? ○ Yes ◉ No

Resolution Pending? ○ Yes ◉ No Resolution Unresolved? ○ Yes ◉ No

		Acceptable	Not Acceptable	Review Needed	Date
Initiator:	Stout, M. D.				
VT Lead:	Neri, Anthony A	☐	☒	☐	2/17/98
VT Mgr:	Schopfer, Don K	☐	☒	☐	2/21/98
IRC Chmn:	Singh, Anand K	☐	☒	☐	2/21/98
Date:	2/17/98	☐	☒	☐	2/26/98

SL Comments: NU's response did not address the discrepancy in calculation 97-ENG-01453M3, Rev. 0 which used an airflow rate of 8,500 cfm instead of 9,800 cfm.

From calculation B235-9915, Rev. B at a 120°F 100% RH entering air conditions and 9,800 cfm, the heater KW required is 41.53 KW + housing losses. Note that the housing heat gain determined in B235-9915 was based on a 300°F ambient temperature and is not applicable for the 120°F entering condition. Calculation needs to be revised to determine the correct housing heat loss that needs to be added to the required heater capacity. At 414 volts the heater output is 37.2 KW for 3A/3B. At the switchyard voltage (not defined in calc) the heater output is 40.4KW for 3A and 39.7KW for 3B. Therefore the heater capacity is not sufficient to limit the relative humidity to 70% RH.

FSAR Table 1.8-1 and Table 6.5-1 do not take exception to nor provide clarification to RG 1.52, Rev. 2, paragraph C.3.b requirements regarding capibility of the electric heating coil to maintain relative humidity of air entering the adsorber below 70%.

NU's response should also address impact on laboratory testing of charcoal adsorbent which is conducted with a 70% relative humidity entering condition.

Northeast Utilities
Millstone Unit 3

ICAVP
Discrepancy Report

DR No. DR-MP3-0679

Review Group: Operations & Maintenance and Testing
Review Element: Operating Procedure
Discipline: Operations
Discrepancy Type: O & M & T Procedure
System/Process: DGX
NRC Significance level: 4

DR RESOLUTION REJECTED

Potential Operability Issue
(●) Yes
( ) No

Date FAXed to NU:

Date Published: 12/14/97

Discrepancy: Surveillance procedure designates a load range that is 186 kW less than the TS requirement

Description: Technical Specification 4.8.1.1.2.b states:

"At least once per 184 days, verify that the diesel generator starts and attains generator voltage and frequency of 4160 ±420 and 60 ±0.8 Hz within 11 seconds after the start signal. The generator shall be synchronized to the associated emergency bus, loaded to greater than or equal to 4986 kW in accordance with the manufacturer's recommendations, and operate with a load greater than or equal to 4986 kW for at least 60 minutes. ..."

The "Technical Specification Surveillance/Testing for Requirement Cross-Reference to actual Plant Procedure for all Tech. Specs." database identifies SP 3646A.1, "Emergency Diesel Generator A Operability Test" as the controlling procedure that satisfies the requirements of TS 4.8.1.1.2.b. SP3646A.1 identifies OP Form 3646A.1-1, "Emergency Diesel Generator A Operability Tests" as the data sheet for establishing the T/S acceptance criteria and documenting the test results.

Both SP3646A.1 and OP Form 3646A.1-1 acceptance criteria for load is 4,800 to 5000 kW, and therefore designates a load range that is 186 kW less than the Technical Specification requirement.

		Valid	Invalid	Review Needed	Date
Initiator:	Tamlyn, Tom	☒	☐	☐	11/14/97
VT Lead:	Bass, Ken	☒	☐	☐	11/17/97
VT Mgr:	Schopfer, Don K	☒	☐	☐	12/1/97
IRC Chmn:	Singh, Anand K	☒	☐	☐	12/5/97

Date:

INVALID:

Date: 2/19/98

RESOLUTION: Disposition:
NU has concluded that Discrepancy Report, DR-MP3-0679, has identified a condition not previously discovered by NU which requires correction. This discrepancy meets the criteria specified in NRC letter B16901 and 17010. It has been screened per U3 PI-20 criteria and found to have no operability or reportability concerns and meets the Unit 3 deferral criteria. CR M3-98-0169 has been written to develop and track resolution of this item per RP-4.

Conclusion:

NU has concluded that Discrepancy Report, DR-MP3-0679, has identified a condition not previously discovered by NU which requires correction. This discrepancy meets the criteria specified in NRC letter B16901 and 17010. It has been screened per U3 PI-20 criteria and found to have no operability or reportability concerns and meets the Unit 3 deferral criteria. CR M3-98-0169 has been written to develop and track resolution of this item per RP-4.

Previously Identified by NU? ○ Yes ◉ No Non Discrepant Condition? ○ Yes ◉ No

Resolution Pending? ○ Yes ◉ No Resolution Unresolved? ○ Yes ◉ No

		Acceptable	Not Acceptable	Review Needed	Date
Initiator:	Spear, R.	☐	☒	☐	2/19/98
VT Lead:	Bass, Ken	☐	☒	☐	2/23/98
VT Mgr:	Schopfer, Don K	☐	☒	☐	2/25/98
IRC Chmn:	Singh, Anand K	☐	☐	☐	
Date:	2/19/98				

SL Comments: S&L does not concur with NU's determination that this discrepancy meets the Unit 3 deferral criteria. The DR identifies a discrepancy between the FSAR and plant procedures which have a direct impact on plant safety and operation.

Northeast Utilities
Millstone Unit 3

ICAVP
Discrepancy Report

DR No. DR-MP3-0783

Review Group: Operations & Maintenance and Testing
Review Element: Corrective Action Process
Discipline: Operations
Discrepancy Type: Corrective Action
System/Process: RSS
NRC Significance level: 4

DR RESOLUTION REJECTED

Potential Operability Issue
○ Yes
◉ No

Date FAXed to NU:

Date Published: 1/25/98

Discrepancy: Licensee Event Report (LER) Root Cause Determination Inadequacies/Close-out Inadequacies

Description: Millstone Unit 3 LER 89-017-00 was written to identify an event where one of the motor-oper[illegible] containment isolation valves (3RSS*MOV20D) for the Co[illegible]inment Recirculation Spray header had not been fully operable for 27 hours and the required 4 hour Technical Specification action had not been performed.

The LER concluded that the root cause of the event was [illegible]nuate administrative guidance on the definition of c[illegible]ent isolation valves, which led to a misinterpretation of the Technical Specifications and the FSAR on the part of the operators and the operations shift management. The LER commited to include guidance on containment isolation valves in permanent plant procedures by February 28, 1990.

Commitment Record No. 17558 was initiated to resolve and track this item. The commitment states: "As action to prevent recurrence, interim guidance was provided indicating that all valves listed in FSAR Table 6.2-65 are containment isolation valves. Final guidance will be included in permanent plant procedures by February 28, 1990." The Validation Text states, however, that the final guidance is already contained in the Technical Requirements Manual, 3TRM-3.6.3.

Additionally, two more commitments were made to resolve the LER commitment. They were:

(1) Commitment No. 3-89-0192, which stated: "Provide clarification to FSAR Table 6.2-65 to define clearly which valves are containment isolation valves for purposes of T.S. 3.6.3." The only action taken was addition of a note which states: "Changes to this table require 10CFR50.59 evaluation in accordance with Technical Specification 3/4.6.3 bases." The item was closed without providing clarification or guidance.

(2) Commitment No. 3-89-0151, which stated: "Engineering to revise/develop a new FSAR Table-6 showing containment penetration, required accident state & leakage requirement (relative to air/water and bypass leakage)." FSAR Table 6.2-65 already contained these items, and no change was made.

Since all of the commitments made in LER 89-017-00 failed to result in revisions to administrative guidelines to correctly identify containment isolation valves, Northeast Utilities (NU) should have revised the root cause determination in the LER.

Review

Northeast Utilities
Millstone Unit 3

ICAVP
Discrepancy Report

DR No. DR-MP3-0783

		Valid	Invalid	Review Needed	Date
Initiator:	Petrosky,Al.	☒	☐	☐	12/22/97
VT Lead:	Bass, Ken	☒	☐	☐	12/24/97
VT Mgr:	Schopfer, Don K	☒	☐	☐	1/19/98
IRC Chmn:	Singh, Anand K	☒	☐	☐	1/21/98

Date:

INVALID:

Date: 2/25/98

RESOLUTION: NU has concluded that Discrepancy Report, DR-MP3-0783, has identified a condition not previously discovered by NU which requires correction. This discrepancy meets the criteria specified in NRC letter B16901 and.17010 It has been screened per U3 PI-20 criteria and found to have no operability or reportability concerns and meets the Unit 3 deferral criteria. CR M3-98-0652 has been written to develop and track resolution of this item per RP-4.

Conclusion:
NU has concluded that Discrepancy Report, DR-MP3-0783, has identified a condition not previously discovered by NU which requires correction. This discrepancy meets the criteria specified in NRC letter B16901 and.17010 It has been screened per U3 PI-20 criteria and found to have no operability or reportability concerns and meets the Unit 3 deferral criteria. CR M3-98-0652 has been written to develop and track resolution of this item per RP-4.

Previously Identified by NU? ○ Yes ◉ No Non Discrepant Condition? ○ Yes ◉ No

Resolution Pending? ○ Yes ◉ No Resolution Unresolved? ○ Yes ◉ No

		Acceptable	Not Acceptable	Review Needed	Date
Initiator:	Spear, R.	☐	☒	☐	2/25/98
VT Lead:	Bass, Ken	☐	☒	☐	2/25/98
VT Mgr:	Schopfer, Don K	☐	☒	☐	2/26/98
IRC Chmn:	Singh, Anand K	☐	☐	☐	
Date:	2/25/98				

SL Comments: It is not apparent from the corrective action description what changes are intended to resolve the misinterpretation of the Technical Specifications and the FSAR.

Further, S&L does not concur with NU's determination that this discrepancy meets the Unit 3 deferral criteria. The DR identifies a discrepancy between the FSAR and plant procedures which have a direct impact on plant safety and operation

Northeast Utilities
Millstone Unit 3

ICAVP
Discrepancy Report

DR No. DR-MP3-0808

Review Group: System
Review Element: System Design
Discipline: Electrical Design
Discrepancy Type: Licensing Document
System/Process: DGX
NRC Significance level: 4

DR RESOLUTION REJECTED

Potential Operability Issue
○ Yes
◉ No

Date FAXed to NU:

Date Published: 1/10/98

Discrepancy: Frequency and Voltage Values in DBSD do not appear to match Tech Spec Values

Description: Background:

Emergency Diesel Generator A Operability Test, OPS Form 3546A.1-1, Page 2 of 3, dated 5/6/97 lists a number of Generator Operability Tests and Tech Spec Acceptance Criteria.

Step	Parameter/Condition	T/S Acceptance Criteria
4.2.7	EDG A Voltage	3740 - 4580 V
4.3.6	EDG A Frequency	59.2 - 60.8 Hz

Design Basis Summary Document 3DBS-EDG-002, paragraph 8.1 states:

Generator Terminal Voltage - Steady State: 4160 Volts nominal steady state (4347 volts maximum, 3973 volts minimum) within +/- 21 volts

Design Basis Summary Document 3DBS-EDG-002, paragraph 8.2 states:

Generator Frequency - Steady State: 60 Hz Nominal steady state (60.5 Hz maximum in the no load, droop mode, 59.85 Hz minimum)

Conclusion:

The nominal values stated in the Design Basis Summary Document do not appear to match the limit on "as found" values in the Tech Spec Operability tests.

		Valid	Invalid	Review Needed	Date
Initiator:	Warner, I.	☒	☐	☐	12/16/97
VT Lead:	Neri, Anthony A	☒	☐	☐	12/17/97
VT Mgr:	Schopfer, Don K	☒	☐	☐	12/23/97
IRC Chmn:	Singh, Anand K	☒	☐	☐	12/31/97

Date:

INVALID:

Date: 2/23/98

RESOLUTION: Disposition:

NU has concluded that Discrepancy Report, DR-MP3-0808, has

identified a condition previously discovered by NU which requires correction.

The Emergency Diesel Generator (EDG) Voltage limits provided in the Technical Specification is common to all power plants and represents the reasonable EDG performance. The MP3 Technical Specification for diesel generator operability requires verifying that the diesel starts from standby conditions and achieves generator voltage and frequency of 4160 +/- 420 volts (4580 to 3740 Volts) and 60 +/- 0.8 Hz. Condition Report (CR) M3-97-0730 was written to address operating outside the equipment requirements. The Design Basis Summary Document (DBSD) 3DBS-EDG-002 section 8.1 and 8.2 steady state terminal voltage 4160 (4347 volts maximum, 3973 volts minimum) within +/- 21 volts and frequency 60 Hz nominal (60.5 Hz maximum in no load and droop mode 59.85 Hz) come from the Stone and Webster motor and generator system specification "Emergency Diesel Generator System (E-241)". The DBSD is not discrepant with the Technical Specifications because the Emergency Diesel Generator System specification is more restrictive and the equipment is better bounded by the values in the Technical Specifications. The approved Corrective Action Plan (CAP) (attached) for Condition Report (CR) M3-97-0730 will "Revise procedures to include steady state voltage limits to be monitored between 4350 and 3950 Volts." This activity is not a startup issue.

Conclusion:

NU has concluded that Discrepancy Report, DR-MP3-0808, has identified a condition previously discovered by NU which requires correction.

Condition Report (CR) M3-97-0730 was written to address operating outside the equipment requirements. The approved Corrective Action Plan (CAP) (attached) for Condition Report (CR) M3-97-0730 will revise procedures to include steady state voltage limits to be monitored between 4350 and 3950 Volts. This activity is not a startup issue.The DBSD is not discrepant with the Technical Specifications because the Emergency Diesel Generator System specification is more restrictive and the equipment performance is better then required by Technical Specifications.

Previously Identified by NU? ○ Yes ◉ No Non Discrepant Condition? ○ Yes ◉ No

Resolution Pending? ○ Yes ◉ No Resolution Unresolved? ○ Yes ◉ No

		Acceptable	Not Acceptable	Review Needed	Date
Initiator:	Warner, I.				
VT Lead:	Neri, Anthony A	☐	☒	☐	2/23/98
VT Mgr:	Schopfer, Don K	☐	☒	☐	2/23/98
IRC Chmn:	Singh, Anand K	☐	☒	☐	2/26/98
Date:	2/23/98	☐	☐	☐	

SL Comments: We concur that Condition Report (CR) M3-97-0730 (initiated 3/7/9

7) identified an issue with respect to operating the diesel generators at more than 5% above or below its rated voltage. We do not concur that the CR addresses the DR issue.

The DR response states:

"The DBSD is not discrepant with the Technical Specifications because the Emergency Diesel Generator System specification is more restrictive and the equipment is better bounded by the values in the Technical Specifications."

The definition of "restrictive" is dependent on how the DBSD is being used. If the high end voltage value stated in the DBSD was used to estimate a fault current, then the value in the DBSD would not be more restrictive. In addition, the CR states that the voltage values in calculation NL-038 are 3744V (min) and 4310V (max) which do not bound the values in the DBSD.

If the DBSD is to contain a value, such as 4160V +/- 4.5%, there should be some stated relationship between this value and the values used in other documents.