Sargent & Lundy LLC

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

May 22, 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

I have enclosed the following 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 twenty-one (21) DRs for which the NU resolutions have been reviewed and accepted by S&L.

DR No. DR-MP3-0030
DR No. DR-MP3-0054
DR No. DR-MP3-0082
DR No. DR-MP3-0246
DR No. DR-MP3-0272
DR No. DR-MP3-0275
DR No. DR-MP3-0301
DR No. DR-MP3-0348
DR No. DR-MP3-0393
DR No. DR-MP3-0556
DR No. DR-MP3-0725
DR No. DR-MP3-0738
DR No. DR-MP3-0745
DR No. DR-MP3-0783
DR No. DR-MP3-0809
DR No. DR-MP3-0835
DR No. DR-MP3-0903
DR No. DR-MP3-1007
DR No. DR-MP3-1012
DR No. DR-MP3-1042
DR No. DR-MP3-1050

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

Yours very truly,

D. K. Schopfer

D. K. Schopfer
SeniorVice 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\nr0522-a.doc

Northeast Utilities
Millstone Unit 3

ICAVP
Discrepancy Report

DR No. DR-MP3-0030

Review Group: Accident Mitigation
Review Element: System Design
Discipline: Mechanical Design
Discrepancy Type: Licensing Document
System/Process: N/A
NRC Significance level: 4

DR RESOLUTION ACCEPTED

Potential Operability Issue
○ Yes
◉ No

Date FAXed to NU:

Date Published: 8/22/97

Discrepancy: Discrepancy between drawdown times for rod ejection accident and LOCA

Description: In our review of FSAR Section 15.4.8.4 a discrepancy was noted..

In FSAR Section 15.4.8.4, the radiological consequences of a postulated rod ejection accident are discussed. It is stated that the assumed time for the secondary containment to drawdown to -0.25" wg is 60 seconds. It is further stated that this 60 second drawdown time is the same as that which was used for the LOCA analysis.

Review of FSAR Table 15.6-9, however indicates that a time of 120 seconds was used for the LOCA analysis as the drawdown time

This discrepancy between the two sections of the FSAR needs resolution

		Valid	Invalid	Review Needed	Date
Initiator:	Kane, T. J.	☒	☐	☐	8/1/97
VT Lead:	Raheja, Raj D	☒	☐	☐	8/1/97
VT Mgr:	Schopfer, Don K	☒	☐	☐	8/5/97
IRC Chmn:	Singh, Anand K	☒	☐	☐	8/7/97

Date:

INVALID:

Date: 5/21/98

RESOLUTION: Disposition:

Response Provided By NU dated 9/18/97

NU has concluded that Discrepancy Report, DR-MP3-0030, has identified a condition not previously discovered by NU which requires correction. A basis exists for having different drawdown times for the rod ejection and LOCA analysis assumptions.

An FSAR CR will be issued to delete the reference to the LOCA drawdown time in 15.4.8.4, which describes the radiological consequences of a rod ejection accident. CR M3-97-3130 was initiated to provide the necessary corrective actions to resolve this issue.

Because this issue does not impact the license or design bases, NU has concluded that the discrepant condition should be categorized as a Significance Level 4 discrepancy.

Conclusion:
NU has concluded that Discrepancy Report, DR-MP3-0030, has identified a condition not previously discovered by NU which requires correction. The reference to the LOCA drawdown time in the rod ejection analysis section of the FSAR is incorrect. An FSAR CR will be issued to correct the error. Because this issue does not impact the license or design bases, NU has concluded that the discrepant condition should be categorized as a Significance Level 4 discrepancy

ADDITIONAL INFORMATION RECEIVED FROM NU:

A. Response to RFI No. MP3-587

In their 9/18/97 response (M3-IRF-00314) to this DR, NU stated that "A basis exists for having different drawdown times for the rod ejection and LOCA analysis assumptions." ICAVP requested NU to provide that basis in RFI No. MP3-587. NU's reply to RFI No. MP3-587 was provided in M3-IRF-00605 (10/10/97). This reply is provided below:

NU REPLY TO RFI NO. MP3-587:

The basis for drawdown times of 60 seconds and 120 seconds for the rod ejection and LOCA analyses, respectively, is as follows:

Testing conducted during the 1993 Millstone 3 refueling outage revealed problems with the SLCRS system relative to the drawdown augmentation provided to SLCRS by the Auxiliary Building Ventilation System. Under a worst case single failure scenario, combined with loss of offsite power and LOCA events, a marginal ability existed to meet the drawdown time of 60 seconds used for both LOCA and Rod Ejection Analyses at that time. Because the LOCA accident was bounding, it was reanalyzed to determine what increased level of reactor containment tightness would be required to compensate for an increased drawdown time of 120 seconds. Based on the conservative results of these studies, the Technical Specifications in the areas of allowed containment leakage and drawdown time were changed to allow a greater drawdown time, at the expense of having to maintain a tighter containment.

The revised containment leak rate limit (La was changed from 0.65%/day to 0.3%/day) was chosen to overcompensate for the increased drawdown time. By ensuring the dose went down for the bounding LOCA, the effect of increased drawdown time on other radiological calculations such as the Control Rod Ejection (CRE) accident and Control Room Habitability calculation did not have to be quantitatively analyzed. Rather, it was qualitatively determined that a CRE with a one minute drawdown and containment leak rate of 0.65%/day was bounding compared to a CRE with two minute drawdown and containment leak rate of 0.3%/day. This approach was important as the Technical

Specification change was being processed on an emergency basis to allow for start-up of the unit from refueling. The intent was to minimize the amount of detailed calculations required by NU and NRC staff at the time.

Following start-up, rather than reanalyze the CRE and Control Room to the new Technical Specification limits, it was decided to submit a non-emergency Technical Specification change request to change the LOCA assumptions back to an effective drawdown time of one minute and a containment leak rate of 0.65%/day. This license amendment request was submitted on 12/14/94 in letter B15028 to the NRC (submitted to S&L via transmittal 54), but has yet to be fully approved. Hence, in the interim we have some inconsistency between the drawdown assumptions, but have justified it based on the knowledge that the FSAR CRE calculation is bounding in terms of dose. The FSAR correctly describes the assumptions used in both of these analyses: 120 seconds in the case of LOCA and 60 seconds in the case of the Rod Ejection Accident.

The above summary explains the basis for the difference between containment drawdown times for the rod ejection and LOCA accidents.

B. Response (M3-IRF-02283 (4/29/98)) to Conference Call Regarding DR-MP3-0030 Between NU and ICAVP (4/1/98)

NU REPLY TO 4/1/98 CONFERENCE CALL REGARDING DR-MP3-0030

Background:

Additional information for Discrepancy Report, DR-MP3-0030 was requested as follows: During a conference call on April 1, 1998 at 1400 between Northeast Utilities and Sargent & Lundy, various questions and concerns were resolved. During the call, Sargent & Lundy requested a copy of the EAB and LPZ Dose assessment for the rod ejection accident which contains revised assumptions. In addition, FSARCR 97-MP3-426 was requested.

Disposition:

NU has concluded that the issue reported in DR-MP3-0030 has identified a CONFIRMED SIGNIFICANCE LEVEL 4 condition which requires correction. This IRF is written to supplement previous responses, M3-IRF-00314 and M3-IRF-00605, in response to DR-MP3-0030. Attached are the documents requested during the April 1, 1998 conference call between NU and Sargent & Lundy.

Conclusion:

NU has concluded that the issue reported in DR-MP3-0030 has identified a CONFIRMED SIGNIFICANCE LEVEL 4 condition

which requires correction. This IRF is written to supplement previous responses, M3-IRF-00314 and M3-IRF-00605, in response to DR-MP3-0030.

C. FAX of NU Letter B16841 to the NRC (Docket No. 50-423) (5/19/98)

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:	Kane, T. J.	☒	☐	☐	5/21/98
VT Lead:	Raheja, Raj D	☒	☐	☐	5/21/98
VT Mgr:	Schopfer, Don K	☒	☐	☐	5/22/98
IRC Chmn:	Singh, Anand K	☐	☐	☐	
Date:	5/21/98				

SL Comments: S&L CONCLUSION:

Based on the additional information provided above by NU, the ICAVP accepts NU's resolution of DR-MP3-0030 and concurs with NU that the significance level of the DR should be reduced to Level 4.

A suggestion is made, however, relative to FSARCR 97-MP3-426, which was attached to M3-IRF-02283. A Note indicating that the Table 15.4-4 CRE accident analysis input parameters apply to the "current" CRE analysis discussed in Note (4) of Table 15.0-8 may clarify the connection between these two tables.

Northeast Utilities
Millstone Unit 3

ICAVP
Discrepancy Report

DR No. DR-MP3-0054

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

DR RESOLUTION ACCEPTED

Potential Operability Issue
○ Yes
◉ No

Date FAXed to NU:

Date Published: 1/11/98

Discrepancy: Pipe support calculation NP(F)-Z019R-019-H001 discrepancy

Description: We have reviewed Pipe Support Calculation no. NP(F)-Z019R-019-H001, Rev.6. Based on this review we have noted the following discrepancies.

1. Local stresses in the in-place steel beam at the support attachment location have not been addressed in the calculation as required by Design Criteria NETM-45.

2. Computer program input contains errors. Loading 1 joint load in Z direction should be applied at node 13 (not 12) and the load magnitude should be 18# (not 68#). Also, in Loading 2, applied load in Z direction should be at node 12 (not 13) and the load magnitude should be 69# (not 18#).

		Valid	Invalid	Review Needed	Date
Initiator:	Patel, A.	☒	☐	☐	9/15/97
VT Lead:	Neri, Anthony A	☒	☐	☐	9/15/97
VT Mgr:	Schopfer, Don K	☒	☐	☐	9/16/97
IRC Chmn:	Singh, Anand K	☒	☐	☐	9/17/97

Date:

INVALID:

Date: 5/20/98

RESOLUTION: NU has concluded that issue reported in DR-MP3-0054 has identified a NON-DISCREPANT condition.
Item 1 indicates the effects the support has on the structural beam it is attached to have not been addressed. Page 10 of the calculation compares the loads at the attachment point to the structural steel and determines "The net effect of the new reaction is less than previously submitted", accordingly the effects on the structural steel have been addressed.
Item 2 indicates the load input to the computer model has not been properly inputted. The load input on page 14 of the calculation is consistent with the defined loads on page 6 of the calculation and the coordinate axes as shown on page 12 of the calculation, so there is no discrepancy. It should be noted that the NUDL output on page 6 of the calculation uses sign dependent loading to establish Minimum and Maximum and the terminology used by the calculation preparer for the STRUDL input on page 14 of the calculation uses absolute values in establishing the Minimum and Maximum, but all loads are considered in the proper direction.
Significance Level criteria do not apply here as this is not a discrepant condition.

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

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:	Klaic, N	☒	☐	☐	5/20/98
VT Lead:	Neri, Anthony A	☒	☐	☐	5/20/98
VT Mgr:	Schopfer, Don K	☒	☐	☐	5/21/98
IRC Chmn:	Singh, Anand K	☐	☐	☐	
Date:	5/20/98				

SL Comments: S & L concurs with the NU's disposition based on the review of the additional explanations provided.

Northeast Utilities
Millstone Unit 3

ICAVP
Discrepancy Report

DR No. DR-MP3-0082

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

DR RESOLUTION ACCEPTED

Potential Operability Issue
○ Yes
◉ No

Date FAXed to NU:

Date Published: 10/18/97

Discrepancy: Lack of analytical basis for operating temperature limit for unsleeved containment penetrations

Description: In the process of reviewing the following documents,

(i) FSAR Section 3.8.1.1, Description of the Containment
(ii) FSAR Section 3.8.1.1, Steel Liner and Penetrations
(iii) FSAR Section 3.8.1.5.2, Steel Liner and Penetration Structural Acceptance Criteria
(iv) Design Criteria for Containment Liner Penetrations, NETM-54, Issued May 1984
(v) Calculation No. 12179-NS(B)-120 Rev. 2, CCN #9, 'Class 2 Unsleeved Penetrations'
(vi) SWEC Calculation 12050-NS(B)-043-LP Vol. 3, Feb. 1979, Virginia Electric Power Co., North Anna Unit 2.

we noted the following discrepancy:

Background:

Based on FSAR Section 3.8.1.1 (i): The design, analyses, and construction of the containment structure is similar to that of Virginia Electric and Power Company, North Anna Power Station, Units 1 and 2.

Based on FSAR Section 3.8.1.1.4 (ii): Unsleeved penetrations consist of piping installed through the containment wall that is thermally cold, and the process pipe is welded directly to the reinforcement plate.

Based on FSAR Section 3.8.1.5.2 (iii): Initial penetration sizing is performed in accordance with Table 3.8-2. The final design verification is in accordance with Tables 3.8-4 through 3.8-6.

Based on the Design Criteria for Containment Liner Penetrations (iv): Unsleeved penetrations are used for thermally cold systems, where the operating temperature inside the process pipe is 200 deg F or less. Sleeved penetrations are used for all thermally hot systems, where the operating temperature inside the penetration is more than 200 deg F.

Calculation NS(B)-120 (v) performs the final evaluation for the Unsleeved Containment Penetrations in accordance with FSAR Tables 3.8-4 through 3.8-6 (iii). The penetrations are considered as fixed end pipes. The analytical procedure for the thin shell analysis of a fixed end pipe is referenced to the North Anna Calculation NS(B)-043-LP (vi).

Discrepancy:

No justification is provided in Calculation NS(B)-120 (v) for the 200 deg F process temperature limit for Unsleeved penetrations.

The calculation which forms the basis for the initial penetration sizing and analyzes the penetration design for the load conditions identified in FSAR Table 3.8-2 (iii) is not referenced, and therefore the associated temperature basis of 200 deg F can not be verified.

		Valid	Invalid	Review Needed	Date
Initiator:	Prakash, A.	☒	☐	☐	10/9/97
VT Lead:	Neri, Anthony A	☒	☐	☐	10/10/97
VT Mgr:	Schopfer, Don K	☒	☐	☐	10/13/97
IRC Chmn:	Singh, Anand K	☒	☐	☐	10/14/97

Date:

INVALID:

Date: 5/21/98

RESOLUTION: NU's First Response
ID:M3-IRF-01044

Disposition:
NU has concluded that the issue reported in Discrepancy Report, DR-MP3-0082, does not represent a discrepant condition. Design Criteria for Containment Liner Penetrations (Reference iv) provides the basis for the 200 °F limit for the penetrations. Section 4.2 of NETM-54 clearly indicates concrete temperature limits are kept below a longer term limit of 200 °F. No specific justification for this criteria is required within calculation 12179-NS (B)-120 since reference 6 (see page 1.77) of this calculation is NETM-54.

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

Conclusion:
NU has concluded that the issue reported in Discrepancy Report, DR-MP3-0082, does not represent a discrepant condition. Design Criteria for Containment Liner Penetrations, NETM-54 provides the basis for the 200 °F limit for the penetrations. No specific justification for this criteria is required within calculation 12179-NS (B)-120 since reference 6 (see page 1.77) of this calculation is NETM-54.

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

NU's Second Response
ID: M3-IRF-02168

Disposition:
NU has concluded that Discrepancy Report DR-MP3-0082, does not represent a discrepant condition. Drawing EV-1M Detail MB and MF (attached) shows the penetrations are attached to the containment liner on the "inside of Containment end", which is anchored with Nelson studs as shown on drawing EV-1J (attached). On the "outside of Containment end" a collar plate is provided which is intentionally not anchored to the concrete structure. Axial thermal growth is not restrained and is not considered as a design load and therefore, no additional justification is required.

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

Conclusion:
NU has concluded that Discrepancy Report DR-MP3-0082, does not represent a discrepant condition. Drawing EV-1M Detail MB and MF (attached) shows the penetrations are anchored on the inside of containment and are not anchored on the outside of containment. Axial thermal growth is not restrained and therefore is not considered as a design load.

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

Attachments:
Drawing EV-1M-8
Drawing EV-1J

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:	Prakash, A.	☒	☐	☐	5/21/98
VT Lead:	Neri, Anthony A	☒	☐	☐	5/21/98
VT Mgr:	Schopfer, Don K	☒	☐	☐	5/22/98
IRC Chmn:	Singh, Anand K	☐	☐	☐	
Date:	5/21/98				

SL Comments: First Response

Section 4.2 of NETM 54 provides a long term temperature limit of 200 °F for the adjacent concrete containment. This is necessary to ensure long term integrity of the concrete. The 200 °F is a limit on the maximum allowable temperature for the concrete. It is not a design basis limit for the unsleeved penetration pipe, which is welded on both sides of the 4'-6" containment wall. On the inside, the pipe is welded to a 1" thick collar plate, which is welded to the containment liner, and on the outside, the pipe is welded to a 1" thick embedded plate.

The temperature limit for the unsleeved penetration pipe and its attachment to the 1" collar plate and 1" embedded plate needs to be justified. For an example, see NS(B)-174, 'Liner Sump Evaluation'.

Second Response:

NU has provided additional information to show that the postulated additional loading due to restrained thermal expansion cannot occur. NU refers to Drawing EV-1M, details MB and MF. However, these details are not relevant to the RSS system penetrations in question. The relevant details for these penetrations are details MA and MG.

NU has also provided Calculation NS(B)-L-2-LP1 for the initial sizing of the penetrations. This calculation states that the penetrating pipe sleeve is embedded in concrete, as such, only loads from within containment need to be considered.

Since the penetration sleeve is embedded in concrete, axial thermal growth of the sleeve is restrained by the concrete/sleeve friction, while radial expansion of the sleeve increases the frictional resistance. The sleeve is axially free to expand only if the frictional resistance is overcome.

Calculation NS(B)-174, 'Liner Sump Evaluation', page 8 states: "As the pipe heats up, its radial expansion is resisted by the concrete surrounding it. The normal pressure developed between the pipe and concrete gives rise to frictional forces resisting the expansion of the pipe in the axial direction. The calculation on pp 21-25 shows that enough friction can be developed to completely restrain the axial growth of the pipe".

The above calculation concludes that frictional resistance will be sufficient to fully restrain the sleeve at least upto a temperature of 256F. Therefore, we concur with NU that the subject issue addressed in this DR does not represent a discrepant condition.

For the sake of completeness of documentation, we suggest that acceptability of unsleeved penetrations for the allowable temperatures of 200F long-term, and 350F short-term, should be analytically documented.

Northeast Utilities
Millstone Unit 3

ICAVP
Discrepancy Report

DR No. DR-MP3-0246

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: 9/29/97

Discrepancy: Undocumented Structural Connections to Tray Supports

Description: Tray support F103-44 is shown on location drawing EE-34EV, Rev. 2 and detailed on drawing EE34HM, Rev. 2 as a four level "C" channel support with the channels welded to embedded plates and a single tray mounted to the top of each member. The top member of the support has an additional connection to a circular stair case support steel member running floor to ceiling. This connection of the stair support steel is not shown on the drawing nor included in any outstanding change documents for the drawing.

		Valid	Invalid	Review Needed	Date
Initiator:	Sarver, T. L.	☒	☐	☐	9/13/97
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: 5/20/98

RESOLUTION: Disposition:

NU has concluded that the issue reported in Discrepancy Report, DR-MP3-0, does not represent a discrepant condition.. The stairway connection to the cable tray support is in accordance with drawing 25212-54012 sheet 1. Engineering Calculation 89-044-654-GD also evaluated this cable tray to spiral stair connection as being within the design limits. The cable tray drawings are not necessarily updated to reflect all attachments as long as the attachments are documented on other approved documentation.

Significance Level Criteria do not apply here as this is not a discrepant condition.

Conclusion:

NU has concluded that the issue reported in Discrepancy Report, DR-MP3-246, does not represent a discrepant condition. Given the above clarification the stairway connection to the cable tray support is in accordance with drawing 25212-54012 sheet 1.

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

SECOND RESPONSE:

NU has concluded that this issue reported in Discrepancy Report, DR-MP3-0246, has identified a CONFIRMED SIGNIFICANCE LEVEL 4 condition which requires correction. This discrepancy meets the criteria specified in NRC letter B16901 and 17010. It has been screened per attachment 11 of U3 PI-20 criteria and found to have no operability or reportability concerns and meets section 1.3.2.e of U3 PI 20 deferral criteria. The attachment to the cable tray is in accordance with an approved design change and calculation 89-044-654-GD. The cable tray support has been qualified for the corresponding loadings. The discrepancy is limited to drawing updates, which have no safety significance. CR M3-98-2216 was closed to Bin CR M3-98-0137. The corrective actions of CR M3-98-0137 will correct the drawing deficiency post startup. There is no affect on License or Design Basis.

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:	Klaic, N	☒	☐	☐	5/20/98
VT Lead:	Neri, Anthony A	☒	☐	☐	5/21/98
VT Mgr:	Schopfer, Don K	☒	☐	☐	5/21/98
IRC Chmn:	Singh, Anand K	☐	☐	☐	

Date: 5/20/98

SL Comments: Whereas it is appropriate for the Structural drawings to show the connection of the tray support and the connection has been accounted for in the design calculations, the documentation of the design is not complete in that there is no indication of the connection of the stair support on the tray support drawing nor any reference to the structural drawings. Therefore, without review of the as installed condition, a user of the tray support drawing has no indication of this connection thereby making the as installed condition inadequately documented leading to a configuration management/control discrepancy. Therefore, this discrepancy is re-affirmed.

SECOND RESPONSE:

S & L concurs with NU's resolution based on the review of the reference documentation provided including calculation no's: 89-044-398-GC and 89-044-654-GD

Northeast Utilities
Millstone Unit 3

ICAVP
Discrepancy Report

DR No. DR-MP3-0272

Review Group: System
Review Element: System Design
Discipline: Piping 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: 10/10/97

Discrepancy: Discrepancy associated with the Implementation of Code Case N-411

Description: In the process of reviewing the following documents,

(i) FSAR Section 3.7B.3.1.2 Seismic Analysis Methods - Piping Systems
(ii) Pipe Stress Analysis Criteria Document, NETM-44, Revision 2
(iii) NRC Regulatory Guide 1.84: Design and Fabrication Code Case Acceptability - ASME Section III Division 1
(iv) NUREG/CR-3526 Impact of Changes in Damping and Spectrum Peak Broadening on the Seismic Response of Piping Systems
(v) NRC Regulatory Guide 1.60: Design Response Spectra for Seismic Design of Nuclear Power Plants
(vi) NRC Regulatory Guide 1.61: Damping Values for Seismic Design of Nuclear Power Plants
(vii) NRC Regulatory Guide 1.92: Combining Modal Response and Spatial Components in Seismic Response Analysis, Rev. 1
(viii) NRC Regulatory Guide 1.122: Development of Floor Design Response Spectra for Seismic Design of Floor-Supported Equipment or Components, Rev. 1
(ix) FSAR Table - 1.8.1 NRC Regulatory Guides
(x) NU Letters: Dated October, 10, 1984 and November 9, 1984
(xi) NRC Letter: Dated November 16, 1984

According to (i): Damping values used for piping are 0.5 percent for OBE and 1 percent for SSE except that increased damping values may be applied on an as-needed basis for final stress reconciliation in accordance with ASME Code Case N-411.

According to (ii): ASME III Code Case N-411 is to be used on a limited basis for stress reconciliation as specified by the lead engineer. Also when these alternate damping values are used for developing pipe support loads, additional load cases must be specified to account for any applicable secondary type loads occurring during the plant faulted condition. All affected pipe supports shall be evaluated with these additional specified loads but the pipe stress criteria will remain unchanged. Where alternate damping values are used exclusively for evaluating equipment loading, valve acceleration or local IWA stress, the additional load cases mentioned above need not be considered by supports or stress.

According to (iii): Code Case N-411 is acceptable subject to the following conditions in addition to those conditions specified in the Code Case: (1) The Code Case damping should be used completely and consistently, if used at all. (2) The damping

values specified may be used only in those analyses in which current seismic spectra and procedures have been employed. Such use should be limited only to response spectra analyses (similar to that used in the study supporting its acceptance - Reference NUREG/CR-3526).

The study supporting the code case acceptance (iv) addresses sources of conservatism in the seismic analysis procedure which is based on a consistent utilization of the methodology delineated in NRC Regulatory Guides 1.60, 1.61, 1.92 and 1.122 [(v) to (viii)]. The objective of the study was to determine the impact of proposed changes to RG 1.61 damping values (Code Case N-411) and the spectrum peak broadening procedure of RG 1.122 on the level of conservatism remaining in the analysis. Conservatism is introduced in the analysis process in numerous ways, among them, due to the broad-band seismic input (RG 1.60) and modal combination methods (RG 1.92).

According to (ix): Millstone-3 is not required to, and does not, consistently comply with Regulatory Guides 1.60, 1.61, 1.92 and 1.122.

As identified in (x) and (xi): Millstone-3 requested and was granted NRC approval for the use of Code Case N-411. This approval forms the basis for its application in (i) and (ii).

Discrepancy:

The 'additional load cases' that 'must be specified to account for any applicable secondary type loads' as referred to in (ii), have not been defined. Also, it is not clear whether the 'additional load cases' have to be considered for evaluating equipment loading, valve acceleration and/or IWA stress.

Code case N-411 is implemented in large bore pipe stress analysis calculations in certain cases exclusively for evaluating equipment loading, valve acceleration or local IWA stress, and in others to reduce seismic stresses in the pipe. The code case is also implemented in small bore pipe stress analysis calculations to evaluate piping and supports. No 'additional load cases' have been specified in these calculations.

The use of Code Case N-411 is justified for reducing levels of conservatism inherent in pipe stress analyses which are based on consistent use of the methodology delineated in Regulatory Guides 1.60, 1.61, 1.92 and 1.122. The seismic design basis for Millstone-3 is not required to, and does not, comply with these Regulatory Guides. Therefore, the Millstone Piping Design Criteria (ii) does not fulfill the conditions set forth in Regulatory Guide 1.84.

		Valid	Invalid	Review Needed	Date
Initiator:	Prakash, A.	☒	☐	☐	9/19/97
VT Lead:	Neri, Anthony A	☒	☐	☐	9/23/97
VT Mgr:	Schopfer, Don K				9/30/97

VT Mgr:	Schopfer, Don K	☒	☐	☐	9/30/97
IRC Chmn:	Singh, Anand K	☒	☐	☐	10/2/97

Date:

INVALID:

Date: 5/21/98

RESOLUTION: Response ID: M3-IRF-02193

Disposition:
NU has concluded that the issue reported in Discrepancy Report, DR-MP3-0272, does not represent a discrepant condition. With respect to items 1 and 2, when invoking the use of ASME Code Case N-411 there are no additional load cases required for the evaluation of piping stresses, since all applicable load cases which account for secondary effects have already been included in the pipe stress analysis. Additional load cases are used to ensure that the secondary effects are considered in support design. These additional load cases are included in the Pipe Support Design Criteria Document NETM-45, Revision 1, Change 5. Similar methods are employed for piping reactions to equipment.With regard to item 3, the use of ASME Code Case N-411 for Millstone 3 was only implemented after specific approval was obtained from the NRC. By letter (attached) dated November 9, 1984, Northeast Utilities requested NRC approval for the use of ASME Code Case N-411. This request indicated the use of the Amplified Response Spectra Broadening procedure of Regulatory Guide 1.122 would be used with the Code Case Damping, but that all other FSAR commitments related to the Amplified Response Spectra would remain unchanged. The NRC approval for the use of ASME Code Case N-411 was granted in a letter (attached) dated November 16, 1984 without further restriction on the Amplified Response Spectra techniques. It should also be noted that Regulatory Guide 1.84 does not require specific conformance to all of the mentioned Regulatory Guides. Since NRC approval was granted without any stipulation, Millstone 3 is in conformance with Regulatory Guide 1.84 with respect to the use of ASME Code Case N-411.

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

Conclusion:
NU has concluded that the issue reported in Discrepancy Report, DR-MP3-0272, does not represent a discrepant condition. For item 1 and 2, when invoking the use of ASME Code Case N-411 there are no additional load cases required since all applicable load cases which account for secondary effects have been included in the pipe stress analysis. Additional load cases are used to ensure that the secondary effects are considered in support design. For item 3, the use of ASME Code Case N-411 for Millstone 3 was only implemented after specific NRC approval. Northeast Utilities to NRC letter (attached) dated November 9, 1984, requested approval for the use of ASME

Code Case N-411. This request indicated the use of the Amplified Response Spectra Broadening procedure of Regulatory Guide 1.122 would be used with the Code Case Damping, but that all other FSAR commitments related to the Amplified Response Spectra would remain unchanged. The NRC approval for the use of ASME Code Case N-411 was granted in a letter (attached) dated November 16, 1984 without further restriction on the Amplified Response Spectra techniques. It should also be noted that Regulatory Guide 1.84 does not require specific conformance to all of the mentioned Regulatory Guides. Since NRC approval was granted without any stipulation, Millstone 3 is in conformance with Regulatory Guide 1.84 with respect to the use of ASME Code Case N-411.

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

Attachments:
NU to NRC Letter dated November 9, 1984
NRC to NU Letter dated November 16, 1984

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:	Prakash, A.	☒	☐	☐	5/21/98
VT Lead:	Neri, Anthony A	☒	☐	☐	5/21/98
VT Mgr:	Schopfer, Don K	☒	☐	☐	5/22/98
IRC Chmn:	Singh, Anand K	☐	☐	☐	
Date:	5/21/98				

SL Comments: We concur with NU that NRC approval to use ASME Code Case N-411 was granted without any stipulation. Therefore, we concur with NU that the subject issue does not represent a discrepant condition.

However, as noted below, we do not concur with NU's position regarding conformance with Reg Guide (RG) 1.84. This issue will be forwarded to the NRC.

As previously noted in the DR, acceptance of higher, less conservative, N411 damping values is justified on the basis of a study which eliminates conservatism in seismic analysis procedures that are based on consistent utilization of RG's 1.60, 1.61, 1.92 and 1.122. Specifically, conservatism due to RG 1.61 is eliminated by replacing RG damping with higher N411 damping, while maintaining the conservatism introduced via remaining RG's.

In Ref. (i), SWEC addressed the issue, namely, "RG 1.61 damping values are to be used in conjunction with RG 1.60 which invokes the use of a new method for generating response spectra. The use of RG 1.61 damping values not in conjunction with the new (RG 1.60) spectra is questionable and unlicensable."

If the use of RG 1.61 damping without RG 1.60 spectra is questionable, then it follows that the use of N411 damping, a less conservative replacement for RG 1.61, without RG 1.60 spectra is also questionable.

Another related issue with the implementation of N411 is inclusion of "residual mass" response in the modal combination. This refers to the contribution of high-frequency modes which are beyond the frequency at which the spectral acceleration returns to the zero-period acceleration (ZPA). With the use of N411 damping, only the flexible range (low frequency) response is reduced, while the rigid range (high frequency) response to the ZPA remains unchanged. Therefore, the SRP 3.7.2 criteria - "inclusion of additional modes does not result in more than a 10% increase in response" - may require that further consideration be given to high frequency modes. Ref. (ii)

To ensure that high frequency modes are adequately and consistently addressed, the NRC has in many instances required that, if N411 damping is used, the effect of "residual mass" response must be included in the modal combinations. The effect of "residual mass" response has not been addressed in any of the reviewed pipe stress analysis calculations, and no justification is provided in the calculations or the design criteria document as to why it can be ignored.

References:
(i) Calculation NP(T)-001-X, Rev 0, Attachment 1, Page A5, Interoffice Memorandum, "Damping Values for Seismic Design Millstone 3", dated 1/22/74.
(ii) NUREG-0800, Standard Review Plan, Section 3.7.2, Seismic System Analysis.

Northeast Utilities
Millstone Unit 3

ICAVP
Discrepancy Report

DR No. DR-MP3-0275

Review Group: System
Review Element: System Design
Discipline: I & C Design
Discrepancy Type: Calculation
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: Calculation SP-3SWP-16 data input & various design input discrepancies.

Description: Calculation SP-3SWP-16, Rev.1, is performed to determine setpoints for switches 3SWP-PS26A,B and 3SWP*PS27A,B monitoring service water header pressure. Safety functions performed by these switches are:
1. Shutdown circulating water pump strainer motors 3SWP-STR2A,B, when the service water header pressure is below setpoint.

2. Start standby service water pump when associated train header pressure drops to the low-low setpoint.

Page 6 identifies pressures at node 1 for various plant conditions based on calculation 12179-P(T)1092 (reference 8). This calculation has been superseded by calculation 90-069-1116 M3. Scenarios modeled in this new calculation predict pressures in the main service water header at nodes 1 & 2 that are less than 28psig. The results of the calculation 90-069-1116 M3 have not been incorporated in to the setpoint calculation. Nodal comparison problem between the old calculation and the new calcualtion is being addressed by the discrepancy report DR-MP3-0396. Based on this fact acceptability of the diagram ' Range of Possible Activation' on page 11 of the calculation can not be verified.

Page 7, item A.2 states that the setpoint calculation is performed per the requirements of Reg. Guide 1.105. However, the effects of uncertainties such as 'Calibration uncertainty', 'Measuring & Test Equipment Error', 'Instrument Installation Error', etc., as required by the Reg. Guide and NUSCo procedure NETM-43, titled 'Preparation of Category I Instrument Setpoint Calculation with Respect to the Requirements of NRC Regulatory Guide 1.105', are not included in the calculation.

Page 10, item F, identifies Tech. Spec. as one of the components for the instrument setpoint calculation for the switches. A review of the tech. spec., Tech. Spec. bases, and Tech. Spec. requirements documents did not show this setpoint to be a Tech. Spec. limit value.

		Valid	Invalid	Review Needed	Date
Initiator:	Hindia, R.	☒	☐	☐	11/7/97
VT Lead:	Neri, Anthony A	☒	☐	☐	11/7/97
VT Mgr:	Schopfer, Don K	☒	☐	☐	11/7/97
IRC Chmn:	Singh, Anand K	☒	☐	☐	11/11/97

Date:

INVALID:

Date: 5/21/98

RESOLUTION: RESPONSE # 1

Disposition:

NU has concluded that items 1 and 3 of Discrepancy Report, DR-MP3-0275, have identified conditions not previously discovered by NU which require correction.

Item 1 and 3) Calculation SP-3SWP-16 determines the setpoint for the service water pump discharge header pressure at which the standby service water pump will be started. The basis for the set point determination is the lowest operating pressure in any of the system's operating modes. The operating pressures are taken from calculation P(T)-1092, "Service Water System-Phase I Test Evaluation and Flow Balance". The information in P(T)-1092 was determined to be out dated and the calculation was identified as superseded by calc 90-069-1116 M3 by NU calculation review group on 3/4/97. Calculation P(T)-1092 was superseded by the NU calculation review group without verifying whether the calculation was used as an input to other calculations. This left an active calculation (SP-3SWP-16) with a reference to an inactive calculation P(T)-1092 for its design basis. Calculation 90-069-1116 M3 which supercedes P(T)-1092 indicates lower operating pressures than that used in setpoint SP-3SWP-16 therefore questioning the validity of the setpoint.

Calculation 90-069-1116 is only active to identify the most limiting line ups for the service water system. The latest Service water system Proto Power flow model is in calculations 96-001 and 97-041 and review of these calculations indicates that the setpoints are acceptable. Corrective Action to CR M3-97-4774 (attached) requires the service water flow calculations to be reviewed to determine what calculations should be superseded.Condition Report (CR) M3-98-0389 was written to provide the necessary corrective actions to resolve the calculation discrepancies. The approved Corrective Action Plan (CAP) for M3-98-0389 will revise Service Water Header Pressure setpoint calculation SP-3SWP-16 to replace the reference to the inactive calculation (P(T)-1092) with the active calculation (90-069-1116). Setpoint calculation SP-3SWP-16 will also be revised to change wording from "Tech Spec Limit" on page 10 to "process setpoint." Since there are no Tech Spec requirements for 3SWP*PS27A,B pressure switches. The item is scheduled for completion post startup. NU considers this item to be significance level 4.

NU has concluded that item 2 issue reported in Discrepancy Report, DR-MP3-0275, does not represent a discrepant condition.

Item 2) Revision 1 to SP-3SWP-16 revised the calculation input

data for the ASCO pressure switches (Attachment 1 to the calculation). The new value has a combined error of ± 10% of adjustable operating range (58 psi) due to aging, temperature effects, vibration, including seismic DBE. This change resulted from the ASCO qualification report, calculation reference B.11. The vendor specified error of ± 10% far exceeds the contributory effects of calibration or installation related errors when combined in a square root sum of the squares (SRSS) fashion and were not a factor in the final calculation result. Reg. Guide 1.105, Revision 1 applies to protective instruments and alarms in system important to safety. A system important to safety is defined as those system that are necessary to ensure (1) the integrity of the reactor coolant pressure boundary, (2) the capability to shut down the reactor and maintain it in a safe condition, or (3) the capability to prevent or mitigate the consequences of accidents that could further result in potential offsite exposures comparable to the guideline exposures of 10CFR Part 100, "Reactor Site Criteria". The Reg. Guide Position sections C1 through C6 provides further guidance indicating that the requirements of the Reg. Guide are to be applied in the development of setpoints with appropriate margins to account for expected uncertainties between the setpoint and the limiting safety settings contained in the Technical Specifications. This provides clarification that the protective instruments and alarms in systems important to safety whose limiting safety settings for which we must maintain margin for uncertainty are listed in Technical Specifications.

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

Conclusion:

NU has concluded that items 1 and 3 of Discrepancy Report, DR-MP3-0275, have identified conditions not previously discovered by NU which require correction.

Item 1 and 3) Condition Report (CR) M3-98-0389 was written to provide the necessary corrective actions to resolve the setpoint calculation discrepancies. The item is scheduled for completion post startup. NU considers this item to be significance level 4.

NU has concluded that item 2 issue reported in Discrepancy Report, DR-MP3-0275, does not represent a discrepant condition.

Item 2) Revision 1 to SP-3SWP-16 revised the calculation input data error correction for pressure. The new value of combined error due to aging, temperature effects, vibration, including seismic DBE, is ± 10% of adjustable operating range. Significance Level criteria do not apply here as this is not a discrepant condition.

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RESPONSE # 2

Disposition:

NU has concluded that Discrepancy Report, DR-MP3-0275, has identified a condition not previously discovered by NU which requires correction.

P(T)-1092, "Service Water System- Phase I Test Evaluation and Flow Balance" determines the lowest allowable header pressure to ensure sufficient flow to all components in the system during all modes of operation. Calculation SP-3SWP-16, "Determine the Setpoint for 3SWP-PT26A, B and 3SWP*PS27A, B Pressure Switches for the Service Water System" determines the low discharge header pressure setpoint to start the standby service water pump. This setpoint is set slightly lower than the normal operating pressure in any of the operating modes (e.g., Normal, Cooldown, Loss of power, Safety injection, and CIB) when only one pump per train is running. During the calculation review process it was determined that calculation 90-069-1116 M3 "Service Water System - Minimum Available Cooling Water Flow Rates Under Design Basis Accident Scenarios" pressure values superseded the values in P(T)-1092. However, calculation 90-069-1116 M3 did not indicate that P(T)-1092 was being effected or superseded. The calculation review process then superseded calculation P(T)-1092 without verifying whether the calculation was bing used as an input to other calculations. This resulted in an active calculation (SP-3SWP-16) referencing a calculation as a design input that had been superseded.

DR-MP3-0275 identifies calculation 90-069-1116 M3 had calculated a lower operating pressures than that used in setpoint SP-3SWP-16 therefore questioning the validity of the setpoint. Calculation 90-069-1116 M3 is only to be used to identify the 8 most limiting service water system line ups and is not to be used as a design input to change the setpoint calculation. Calculation 97-041, "MP3 SW System - Determination of Minimum Available Flows During Accident Scenarios and Investigation of Heat Exchanger Return Lines for Cavitation or Choked Flow" determines the flows, pressures and temperatures for these 8 cases based on the latest service water system flow model. The lowest header pressure value identified in calculation 97-041 is above the existing setpoint value therefore, the existing setpoints are acceptable. Calculation 97-041, is the appropriate design input that should be used to revise setpoint calculation SP-3SWP-16.

Condition Report M3-98-0389 was written to provide the necessary corrective actions to resolve these calculation discrepancies. The approved Corrective Action Plan for M3-98-0389 will revise Service Water Header Pressure setpoint calculation SP-3SWP-16 to replace the reference to the superseded calculation (P(T)-1092) with the calculation 97-041. Setpoint calculation SP-3SWP-16 will also be revised to change wording from "Tech Spec Limit" on page 10 to "process setpoint." Since there are no Tech Spec requirements for 3SWP*PS27A,B pressure switches. The item is scheduled for completion post startup.

Condition Report M3-97-4774 was written to document and to provide the necessary corrective actions to resolve service water calculation discrepancies. The approved Corrective Action Plan for M3-97-4774 will review the appropriate service water flow calculations to determine which calculations should be revised or superseded based on the new flow model calculation data.

Reg. Guide 1.105, Revision 1 (MP3's licensing basis), applies to protective instruments and alarms in systems important to safety. A system important to safety is defined as those systems that are necessary to ensure (1) the integrity of the reactor coolant pressure boundary, (2) the capability to shut down the reactor and maintain it in a safe condition, or (3) the capability to prevent or mitigate the consequences of accidents that could further result in potential offsite exposures comparable to the guideline exposures of 10CFR Part 100, "Reactor Site Criteria". The Reg. Guide Position sections C1 through C6 provides further guidance indicating that the requirements of the Reg. Guide are to be applied in the development of setpoints with appropriate margins to account for expected uncertainties between the setpoint and the limiting safety settings contained in the Technical Specifications. This provides clarification that the protective instruments and alarms in systems important to safety whose limiting safety settings for which we must maintain margin for uncertainty are listed in Technical Specifications.

Calculation of instrument uncertainties for MP3 is currently governed by a site wide standard specification, SP-ST-EE-286 "Guidelines for Calculating Instrument Uncertainties". This specification provides generic guidance on calculating instrument uncertainties, however it does not provide adequate detail for MP3 in identifying which instruments are required per the MP3 licensing commitments to have instrument uncertainties included in their setpoints. Instead it relies upon the design basis documents (MEPL program, and Specifications) to identify and determine which instruments require inclusion of uncertainties within their setpoints.

CR M3-97-1609, dated May 21, 1997, was issued to document the results of a self-assessment conducted on the MP3 Setpoint Control Topical Area which identified the need to develop a Millstone Unit 3 specific instrument setpoint manual (or specification) to replace the generic SP-ST-EE-286 specification. Corrective actions for this CR are in process and Specification SP-M3-IC-025 is in development which will provide guidance for the preparation of safety system instrument setpoint and uncertainty calculations for MP3 in a manner that is clearly consistent with the intent of ISA S67.04, "Setpoints for Nuclear Safety-Related Instrumentation Used In Nuclear Power Plants", and requirements of Regulatory Guide 1.105, Rev. 1, "Instrument Setpoints for Safety-Related Systems". This administrative enhancement will ensure the appropriate application of uncertainties in the required setpoint calculation.

Due to misinterpretation of specification SP-ST-EE-286

requirements and discontinuities between the design base documents there has been confusion as to which instruments require consideration of uncertainties in their setpoints. The original design philosophy identified those instruments that perform nuclear safety functions with an asterisk (*) in the instrument ID and denoted them as Category I. The MEPL program has evolved over the years in such a manner that it has departed from that original design philosophy in identifying Nuclear Safety Related equipment with an asterisk to identifying all QA Category I devices with an asterisk. For example, an instrument which is required to be QA Category I because it performs either a pressure boundary function or because of interrelationships with a Class IE circuit would have an asterisk in its ID. This led to an erroneous belief that those instruments required uncertainties to be applied even though they are not in systems important to safety per Reg. Guide 1.105 requirements.

CR M3-97-3083, dated September 12, 1997, was issued to document these inconsistencies between the original instrument identification approach and the FSAR table in identification of Category I, non nuclear safety functional instrumentation. Corrective actions for this CR have been identified. AR 97022871-02 issued SP-M3-ME-024 Rev. 0, "Millstone Unit 3 Conventions for System Identifications, System Interfaces, and Equipment Identification" as the MP3 controlling document for asterisk (*) coding. AR 97022871-01 will revises FSAR Section 3.2 to reflect use of the MEPL program to identify QA Category I equipment and MP3 Specification SP-M3-ME-024 as the controlling document for asterisk (*) coding of specific MP3 drawings.
These changes are administrative in nature and do not impact the design or licensing basis of any system.

In regards to NETM-43 and NEAM-41:

NETM-43 "Preparation of Category I Instrument Setpoint Calculations with Respect to the Requirements of NRC Regulatory Guide 1.105" established a uniform method for Stone & Webster Control System personnel to identify instruments that require uncertainties to be included in their setpoints. Guidance provided in section 4.0 "Criteria for Instrument Setpoints" clearly indicates that only instruments that have a technical specification limit are to included uncertainties. This is to ensure that instrument drift and / or inaccuracies will not place the instrument setpoint beyond the technical specification limit.

NEAM-41 "Processing of Calculations Millstone Nuclear Power Station - Unit 3," implements the requirements of NETM-43 by establishing a method for the preparation of calculations including setpoint calculations. NEAM-41 states in section 4 of attachment 4, that instrumentation uncertainties shall be incorporated into safety-related (QA Category I) setpoints. Both of these procedures are in agreement with the original design philosophy that the Reactor Protection Trip system and Engineered Safeguards Features Actuation systems setpoints have instrumentation uncertainties included in their setpoints.

NETM-43 and NEAM-41 are Stone & Webster procedures that were used for construction of MP3. They have not been reviewed and approved for use by the Plant Oversight Review Committee (PORC) as a NU procedure. Although the guidance provided by these procedures may still be followed if referenced as a design input document they however, can not be used as a stand alone procedure. Once the plant was turned over to NU setpoint calculations were controlled in accordance with NU design control process (i.e., Setpoint Change Request, NGP's, PDCRs, Design Control Manual, etc.) that was in place at the time. Therefore, the Stone & Webster procedures are not applicable for the control of setpoints once NU took ownership of the plant.

A review of the tech. spec., Tech. Spec. bases, and Tech. Spec. requirements documents did not show this setpoint to be a Tech. Spec. limit value. Therefore, these instruments are not required to have instrumentation uncertainties included in their setpoints. Calculation SP-3SWP-16 objective 2 is in error since, these instruments are not required to have instrumentation uncertainties included in their setpoints. The approved Corrective Action Plan for M3-98-0389 will revise Service Water Header Pressure setpoint calculation SP-3SWP-16 to delete objective 2.

The current service water system flow model calculation represents the physical installed system and that has been adjusted by using the actual system flow test data. This calculation is valid and verifies that the system meets its design basis requirements. Past calculations determined flow rates using other models and contain outdated results. Other calculations were used to size components such as orifice plates and set positions of butterfly valves, information which is contained within the new flow model. Voiding or superseding the above calculations will remove confusion, but not do affect the system design basis or operation.

Disposition:

NU has concluded that Discrepancy Report, DR-MP3-0275, has identified a condition not previously discovered by NU which requires correction. written with its corrective actions approved to revise calculation SP-3SWP-16 and to resolve service water calculation discrepancies post startup. Since, the current service water system flow model calculation represents the physical installed system and that had been adjusted using the actual system flow test data. This calculation verifies that the service water system meets its design basis requirements. Other calculations are used to size components such as orifice plates and set positions of butterfly valves, this information is contained within the new flow model. Voiding or superseding the above calculations will remove confusion, but not affect the system design basis or operation.

CR M3-97-3083 was issued to resolve conflicts between the

present MEPL program requirements for identifying equipment as Category I and the original plant design process for designating instrumentation as Nuclear Safety Related. CR M3-97-1609 was issued to document the need to develop a Millstone 3 specific instrument setpoint, uncertainty and scaling specification which is under development and scheduled to be issued post startup. This document will replace Specification SP-ST-EE-286 for MP3 and as a unit specific specification will more accurately reflect the MP3 licensing basis for instrument setpoints. It will provide clear direction to the engineers to identify when the instrument requires instrument uncertainties to be applied. NU has concluded that Reg. Guide 1.105 requirements are not applicable to these devices and therefore are not required to have instrument uncertainties included in their setpoints. This is an administrative activity and will not impact the design basis of any system. Based on this NU considers this to be a Significance Level 4 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:	DeMarco, J.	☒	☐	☐	5/21/98
VT Lead:	Neri, Anthony A	☒	☐	☐	5/21/98
VT Mgr:	Schopfer, Don K	☒	☐	☐	5/22/98
IRC Chmn:	Singh, Anand K	☐	☐	☐	

Date: 5/21/98

SL Comments: RESPONSES # 1

Subsequent to response #1, discussion took place for the interpretation of RG 1.105, Revision 1 applicability. Based on that discussion NU provided their generic response for all setpoint calculations that have a discrepancy report written against them. This generic response along with specific concerns identified in this DR have been addressed in NU's response # 2.

RESPONSE # 2

A. Instrument accuracy determination per RG 1.105, Rev. 1:

Based on a telecon among NU, NRC, and S&L on 5/18/98, this instrumentation is not classified as Tech Spec and is not subject to RG 1.105 error analysis.

B. SWP header pressure switches 3SWP*PS26A, B & 3SWP*PS27A, B:

The setpoint is acceptable for the minimum ESF function of the SW System since only one pump per train is required for this event. Therefore, there is no need for the respective header pressure switch to start the standby pump in each train. S&L does note, however, that for normal operation of the SW System, the current setpoint may result in a low low system pressure condition, without starting the standby pump. Since this is not

associated with ESF safety functions, S&L accepts NU's conclusion that this is a significance Level 4 DR and that NU will correct the calculation.

Northeast Utilities
Millstone Unit 3

ICAVP
Discrepancy Report

DR No. DR-MP3-0301

Review Group: System
Review Element: System Design
Discipline: I & C Design
Discrepancy Type: Calculation
System/Process: SWP
NRC Significance level: NA

DR RESOLUTION ACCEPTED

Potential Operability Issue
(●) Yes
( ) No

Date FAXed to NU:

Date Published: 10/30/97

Discrepancy: Calculation SP-3SWP-28 data discrepancy.

Description: Pressure switches 3SWP*PS111A, B will alarm locally when the pressure of the service water pressure drops below calculated setpoint. This will signal a possibly damaging condition to the emergency diesel generator.

A review of calculation SP-3SWP-28, Revision 1 and CCN nos. 1 & 2, revealed following discrepancies:

Per FSAR table 1.8-1 - NRC Regulatory Guides, the MP3 is committed to R.G.1.105, Rev.1,dated November 1976. Per Section C, paragraph 1 'The setpoints should be established with sufficient margin between the technical specification limits for the process variable and nominal trip setpoint to allow for (a) the inaccuracy of the instrument, (b) uncertainties in the calibration, and (c) the instrument drift that could occur during the interval between calibrations. Procedure NETM-43 - Preparation of Category I Instrument Setpoint Calculations with respect to the requirements of NRC R.G. 1.105, requirements also spell out the methodology for setpoint calculations. Instruments identified in the calculation were upgraded to safety related status by revision 1, in November 1983.

A review of applicable corrective action database for Millstone 3 has not identified any pending change notices that will update/revise this calculation to the requirements discussed above.

		Valid	Invalid	Review Needed	Date
Initiator:	Hindia, R.	☒	☐	☐	10/9/97
VT Lead:	Neri, Anthony A	☒	☐	☐	10/17/97
VT Mgr:	Schopfer, Don K	☒	☐	☐	10/20/97
IRC Chmn:	Singh, Anand K	☒	☐	☐	10/27/97

Date:

INVALID:

Date: 5/21/98

RESOLUTION: RESPONSE # 1

Disposition:
NU has concluded that Discrepancy Report, DR-MP3-0301, does not represent a discrepant condition.

The Pressure Switches 3SWP*PS111A&B were upgraded to QA Category 1 by Design Change Request DCR M3-96067. This was done because Material Equipment Parts List (MEPL)

Determination No. MP3-CD-843 identified these and several other instruments as being directly connected to the Diesel Generator Annunciator Panel. The Diesel Generator Annunciator Panel is designed as QA Category 1. These Pressure Switches had to be designed and qualified to the same level as the Diesel Generator Annunciator system or electrically isolated to preclude potential degradation to the annunciator circuit. The NES Technical Review Summary for the MEPL determination documented that the Pressure Switches were upgraded to ensure proper electrical separation design requirements. The Pressure Switches do not contribute to the Emergency Diesel Generator nuclear safety function and are neither required nor credited during emergency operation of the diesel. Because these Pressure Switches provide non-safety indication/alarm functions only within the Emergency Diesel Generator system, the requirements of Reg. Guide 1.105 revision 1 do not apply.Significance Level criteria do not apply here as this is not a discrepant condition.

Conclusion:
NU has concluded that Discrepancy Report, DR-MP3-0301, does not represent a discrepant condition.
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RESPONSE # 2

Disposition:

NU has concluded that Discrepancy Report, DR-MP3-301, has identified a condition previously discovered by NU which requires correction. Reg. Guide 1.105, Revision 1 (MP3's licensing basis), applies to protective instruments and alarms in systems important to safety. A system important to safety is defined as those systems that are necessary to ensure (1) the integrity of the reactor coolant pressure boundary, (2) the capability to shut down the reactor and maintain it in a safe condition, or (3) the capability to prevent or mitigate the consequences of accidents that could further result in potential offsite exposures comparable to the guideline exposures of 10CFR Part 100, "Reactor Site Criteria". The Reg. Guide Position sections C1 through C6 provides further guidance indicating that the requirements of the Reg. Guide are to be applied in the development of setpoints with appropriate margins to account for expected uncertainties between the setpoint and the limiting safety settings contained in the Technical Specifications. This provides clarification that the protective instruments and alarms in systems important to safety with limiting safety settings for which we must maintain margin for uncertainty are listed in Technical Specifications.

Calculation of instrument uncertainties for MP3 is currently governed by a site wide standard specification, SP-ST-EE-286 "Guidelines for Calculating Instrument Uncertainties". This specification provides generic guidance on calculating instrument uncertainties, however it does not provide adequate

detail for MP3 in identifying which instruments are required, per MP3 licensing commitments, to have instrument uncertainties included in their setpoints. Instead it relies upon the design basis documents (MEPL program, and Specifications) to identify and determine which instruments require inclusion of uncertainties within their setpoints.

CR M3-97-1609, dated May 21, 1997, was issued to document the results of a self-assessment conducted on the MP3 Setpoint Control Topical Area and identified the need to develop a Millstone Unit 3 specific instrument setpoint manual (or specification) to replace the generic SP-ST-EE-286 specification. Corrective actions for this CR are in process and Specification SP-M3-IC-025 is in development which will provide guidance for the preparation of safety system instrument setpoint and uncertainty calculations for MP3 in a manner that is clearly consistent with the intent of ISA S67.04, "Setpoints for Nuclear Safety-Related Instrumentation Used In Nuclear Power Plants", and requirements of Regulatory Guide 1.105, Rev. 1, "Instrument Setpoints for Safety-Related Systems". This administrative enhancement will ensure the appropriate application of uncertainties in the required setpoint calculation.

Due to misinterpretation of specification SP-ST-EE-286 requirements and discontinuities between the design base documents there has been confusion as to which instruments require consideration of uncertainties in their setpoints. The original design philosophy identified those instruments that perform nuclear safety functions with an asterisk (*) in the instrument ID and denoted them as Category I. The MEPL program has evolved over the years in such a manner that it has departed from that original design philosophy in identifying Nuclear Safety Related equipment with an asterisk to identifying all QA Category I devices with an asterisk. For example, an instrument which is required to be QA Category I because it performs either a pressure boundary function or because of interrelationships with a Class IE circuit would have an asterisk in its ID. This led to an erroneous belief that those instruments required uncertainties to be applied even though they are not in systems important to safety per Reg. Guide 1.105 requirements.

CR M3-97-3083, dated September 12, 1997, was issued to document these inconsistencies between the original instrument identification approach and the FSAR table in identification of Category I, non nuclear safety functional instrumentation. Corrective actions for this CR have been identified. AR 97022871-02 issued SP-M3-ME-024 Rev. 0, "Millstone Unit 3 Conventions for System Identifications, System Interfaces, and Equipment Identification" as the MP3 controlling document for asterisk (*) coding. AR 97022871-01 will revise FSAR Section 3.2 to reflect use of the MEPL program to identify QA Category I equipment and MP3 Specification SP-M3-ME-024 as the controlling document for asterisk (*) coding of specific MP3 drawings. These changes are administrative in nature and do not impact the design or licensing basis of any system.

In regards to NETM-43 and NEAM-41:

NETM-43 "Preparation of Category I Instrument Setpoint Calculations with Respect to the Requirements of NRC Regulatory Guide 1.105" established a uniform method during original design and construction to identify instruments that require uncertainties to be included in their setpoints. Guidance provided in section 4.0 "Criteria for Instrument Setpoints" clearly indicates that only instruments that have a technical specification limit need to include uncertainties. This is to ensure that instrument drift and / or inaccuracies will not place the instrument setpoint beyond the technical specification limit.

NEAM-41 "Processing of Calculations Millstone Nuclear Power Station - Unit 3," implements the requirements of NETM-43 by establishing a method for the preparation of calculations including setpoint calculations. NEAM-41 states in section 4 of attachment 4, that instrumentation uncertainties shall be incorporated into safety-related (QA Category I) setpoints. Both of these procedures are in agreement with the original design philosophy that the Reactor Protection Trip system and Engineered Safeguards Features Actuation systems setpoints have instrumentation uncertainties included in their setpoints.

NETM-43 and NEAM-41 are Stone & Webster procedures that were used for construction of MP3. They have not been reviewed and approved for use by the Plant Oversight Review Committee (PORC) as a NU procedure. Although the guidance provided by these procedures may still be followed if referenced as a design input document they however, can not be used as a stand alone procedure. Once the plant was turned over to NU setpoint calculations were controlled in accordance with the NU design control process (i.e., Setpoint Change Request, NGP's, PDCRs, Design Control Manual, etc.) that was in place at the time. Therefore, the Stone & Webster procedures are not applicable for the control of setpoints once NU took ownership of the plant.

IEEE 387-1977 "Criteria for Diesel-Generator Units Applied as Standby Power Supplies for Nuclear Power Generating Stations" requires the Diesel Generator systems to have sufficient mechanical and electric instrumentation to survey the variables required for successful operation and to generate the abnormal, pretrip and trip signals. This standard requires that the primary and secondary cooling systems have adequate alarms and trip signals. However, it does not address or require the inclusion of instrumentation uncertainties in the setpoints for these alarms.

Active annunciator windows have an annunciator response procedure to provide the operator a concise summary of the initiating function, required corrective actions and the supporting information. These procedures typically provide the nominal setpoint for the initiating device and do not address or require the inclusion of instrumentation uncertainties in the alarm setpoints. These procedures do not specify which alarms are required to have instrumentation uncertainties included in their setpoints.

ACR 12875, dated May 21, 1996, identified that the Emergency Diesel Generator annunciators are classified as QA Category 1 in the design basis and all NON-QA Category 1 inputs are required to be electrically isolated. ACR 12875 identified these instruments as being NON-QA and directly connected to the annunciator panel without qualified isolators. Corrective actions for ACR 12875 required a MEPL evaluation (MP3-CD-843) to be performed to determined the safety related function of these switches. As a result of the evaluation it was determined that these switches perform a non-safety related function but their electrical and mechanical failure could effect safety related equipment. Based on the failure modes and the interactions with the safety related equipment it was determined that these pressure switches needed to be upgraded to QA Category 1 to maintain the plant licensing and design basis associated with the separation requirements of Reg. Guide 1.75 and to maintain system pressure boundary.

FSAR sections 7.1.1.5 and 8.3.1.1.3 and MEPL determination MP3-CD-843 are in agreement in that the Emergency Diesel Generator annunciator panel and pressure switches 3SWP* PS111A & B are QA Category 1 and that the NON-QA Category 1 inputs are to be isolated.

These pressure switches were upgraded to QA Category 1 because of their failure modes and interactions with safety related equipment. NU has concluded that Reg. Guide 1.105 requirements are not applicable to these devices and therefore are not required to have instrument uncertainties included in their setpoints. The misinterpretation of specification SP-ST-EE-286 requirements and discontinuities between the design base documents is an administrative activity and will not impact the design basis of any system.

Conclusion:

NU has concluded that Discrepancy Report, DR-MP3-0833, has identified a condition previously discovered by NU which requires correction. CR M3-97-3083 was issued to resolve conflicts between the present MEPL program requirements for identifying equipment as Category I and the original plant design process for designating instrumentation as Nuclear Safety Related. CR M3-97-1609 was issued to document the need to develop a Millstone 3 specific instrument setpoint, uncertainty and scaling specification which is under development and scheduled to be issued post startup. This document will replace Specification SP-ST-EE-286 for MP3 and as a unit specific specification will more accurately reflect the MP3 licensing basis for instrument setpoints. It will provide clear direction to the engineers to identify when the instrument requires instrument uncertainties to be applied. NU has concluded that Reg. Guide 1.105 requirements are not applicable to these devices and therefore are not required to have instrument uncertainties included in their setpoints. This is an administrative activity and will not impact the design basis of any system.

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:	DeMarco, J.	☑	☐	☐	5/21/98
VT Lead:	Neri, Anthony A	☑	☐	☐	5/21/98
VT Mgr:	Schopfer, Don K	☑	☐	☐	5/22/98
IRC Chmn:	Singh, Anand K	☐	☐	☐	
Date:	5/21/98				

SL Comments: RESPONSE # 1

Attachment 4 of Document NEAM-41 titled "Setpoint Calculation" establishes method for preparation of setpoint calculation to support proper operation of QA Category I systems and control devices. This document is prepared in response to R.G. 1.105 (November, 1976). NEAM-41 is referenced in the NETM-43 section 5.0 as procedure providing setpoint calculation methodology.

R.G. 1.9 dated December 1979 titled "Selection, Design, and Qualification of Diesel-Generator Units used as Standby (onsite) Electric Power systems at Nuclear Power Plants" endorses IEEE Std 387-1977 titled "IEEE standard Criteria for Diesel-Generator Units Applies as Standby Power Supplies for Nuclear Power Generating Stations". FSAR table 1-8 indicates compliance to the revision of R.G. 1.9. IEEE 387-1977 paragraph 5.6.3.1 states that the diesel generator unit shall be provided with surveillance systems permitting remote and local surveillance and to indicate the occurrence of abnormal, pretrip, or trip conditions. . IEEE 387-1977 paragraph 5.6.3.3 identifies these alarms as surveillance instrumentation required for successful operation and to generate abnormal, pretrip, and trip signal required for alarm conditions.

Credit is taken for manual operator action based upon these alarms in the NUSCO Abnormal Operating Procedures OP 3353.EGPA and EGPB (refer to annunciator windows 6-3 for both procedures).

Per FSAR section 7.1.1.5 "The annunciators are non safety grade except for the emergency diesel generator local alarms which is safety grade". Per FSAR section 8.3.1.1.3 the emergency diesel alarm panel is safety grade and meets IEEE 344 criteria. MEPL resolution appears to be in contradiction with FSAR section 7.1.1.5 and in agreement with section 8.1.1.3 and the resolution provided by NUSCo for this DR.

Based upon above explanation the calculation seems to be deficient in meeting plant procedure NEAM-41. No explanation is provided in the calculation which establishes any exception to the requirements.

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RESPONSE # 2

S&L has reviewed NU's second response and has the following comments.

A. Instrument accuracy determination per RG 1.105, Rev. 1:

Based on a telecon among NU, NRC, and S&L on 5/18/98, this instrumentation is not classified as Tech Spec and is not subject to RG 1.105 error analysis.

B. Response for the setpoint control procedure/program:

Per NU's response to this DR, specification SP-ST-EE-286 is to be superseded by a new specification, SP-M3-IC-025, which will clarify this issue. This activity has been assigned Action Tracking item A/R 97012506. However, the activity is not addressing the follow-up action, if any for verifying adequacy of the existing calculations identified as meeting the criteria established in the procedure SP-M3-IC-025.

C. Response to DG system related alarm:

Per a telecon among NU, NRC, and S&L on 5/18/98, this instrumentation was not required to be classified as Tech Spec, and did not require RG 1.105 error analysis. It was determined that the reason for the upgrade to Category 1 was based on the Diesel Generator Gageboards being fed from orange and purple power sources and that this instrumentation was not an input to Tech Spec or EOP steps.

Based on reasons discussed above significance level of the DR has been downgraded to Level NA.

Northeast Utilities
Millstone Unit 3

ICAVP
Discrepancy Report

DR No. DR-MP3-0348

Review Group: Programmatic
Review Element: Change Process
Discipline: Other
Discrepancy Type: Calculation
System/Process: SWP
NRC Significance level: NA

DR RESOLUTION ACCEPTED

Potential Operability Issue
- ○ Yes
- ● No

Date FAXed to NU:

Date Published: 10/10/97

Discrepancy: Improper Preparation of Calculation Change Notice # 2 for Calculation No. 90-069-1130-M3, Rev. 0

Description: Calculation Change Notice (CCN) #2 's " Reason for Change " block states "50.54 (f) Review determined that Calculation No. 90-069-1130-M3, Rev. 0 supersedes Calculation 12179-(P)-1148, Rev. 1 and NM-037-HVK". CCN #2 's "Description of Change & Technical Justification" block states "Calculation No. 90-069-1130-M3, Rev. 0 supersedes Calc. 12179-(P)-1148, Rev. 1" and provides a justification also. Neither the "Reason for Change" block nor the "Description of Change & Technical Justification" block state the change(s) to be implemented into the Calculation No. 90-069-1130-M3, Rev. 0 .
This appears to be an improper application of the calculation process as there is no change to the Calculation No. 90-069-1130-M3, Rev. 0 stated in CCN # 2. [The calculations which are superseded should be superseded through DCM Chapter 5, Section 6, " Superseding or Voiding Calculations" process]

		Valid	invalid	Review Needed	Date
Initiator:	Caruso, A.	☒	☐	☐	10/1/97
VT Lead:	Ryan, Thomas J	☒	☐	☐	10/1/97
VT Mgr:	Schopfer, Don K	☒	☐	☐	10/1/97
IRC Chmn:	Singh, Anand K	☒	☐	☐	10/4/97

Date:

INVALID:

Date: 5/21/98

RESOLUTION:

NU's First Response

Disposition:

NU has concluded that the issue reported in Discrepancy Report, DR-MP3-0348, does not represent a discrepant condition. Part of the CMP effort included validating and updating the Calculation Tracking Program (CTP). Calculations were reviewed to ensure that, administratively, calculations were properly linked to each other when necessary. CCNs were written to document any missing references between calculations that were found. That was the case in this DR. CCN #2 to 90-69-1130-M3 revision 0 was written to document an administrative oversight during the preparation of the CTP database sheets to the original calculation. CCN #2 does not impact the body of the calculation in any way. CCN #2 revises the CTP data base input sheet to ensure that 12179-(P)-1148 revision 1 and NM 037 HVK

have been superseded by calculation 90-069-1130-M3 revision 0.

Calculation 90-69-1130-M3 does not require a new revision to document that it superceded 12179-(P)-1148 and NM-037-HVK. DCM Chapter 5, Section 6 requires a revision for the calculation being superseded not for the superseding calculation.

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

Conclusion:

NU has concluded that the issue reported in Discrepancy Report, DR-MP3-0348, does not represent a discrepant condition. The DCM Chapter 5 requirement for superseding calculations by issuing new revisions pertains to the calculation being superseded. There is no specific requirement that the superseding calculation needs to be revised to indicate it has superseded another calculation. A CCN was issued in this case to document, for administrative purposes only, that 90-069-1130-M3 superseded 12179-(P)-1148 and NM 037 HVK. Significance Level criteria do not apply here as this is not a discrepant condition.

NU's Second Response

Background:
S&L considers the NU response stated in M3-IRF-00681 to Discrepancy Report DR-MP3-0348, unacceptable. S&L restates the discrepancy as follows:
NU's response is not acceptable.
The process to make changes to a calculation is covered in DCM Chapter 5, Section 5. The process to supersede a calculation is covered in DCM Chapter 5, Section 6. Section 6 does not include the use of CCN's to supersede calculations nor to use CCN's to update the CPT Data Base. Per DCM Chapter 5, Section 5, CCN's are only used to change calculations. The issuance of CCN # 2 to Calculation 90-069-1130 M3 to ".....supersede Calculations 12179-P(T)-1148, Rev. 1 and NM-037-HVK." is a discrepancy against the procedural requirements of the NU DCM, Revision 5.

Disposition:
NU has concluded that the issue reported in DR-MP3-00348 has identified a NON DISCREPANT condition. Calculation 90-069-1130-M3 does not require a new revision to document that it superseded 12179-(P)-1148 and NM-037-HVK. Revision 5 of DCM Chapter 5, Section 6.0.3 (6.1.3 for revision 6) instructions to the preparer states: "OBTAIN the original calculation to be superseded from NDC". The following instruction section 6.0.4 (6.1.4 for revision 6) states: "INITIATE a new Title Page (DCM FORM 5-1A) for the calculation with a new revision number". The new title page delineated in section 6.0.4 is applicable only to the calculation to be superseded as delineated in the previous section 6.0.3. It is not intended to be applicable to the

superseding calculation thereby restricting the use of a CCN. Additional support for this position can be found in Nuclear Document Services Procedure (NDS) 3.1 titled "Indexing Controlled Documents in PassPort" (attached). Section 1.7 is titled "Superseding a Calculation with a Calc or CCN" clearly indicates that a CCN can be and has been an acceptable tool to use for superseding calculations. Significance Level criteria do not apply here as this is not a discrepant condition.

Conclusion:
NU has concluded that the issue reported in DR-MP3-00348 has identified a NON DISCREPANT condition. Calculation 90-069-1130-M3 does not require a new revision to document that it superseded 12179-(P)-1148 and NM-037-HVK. Revision 5 of DCM Chapter 5, Section 6.0.3 instructions to the preparer states: "OBTAIN the original calculation to be superseded from NDC". The following instruction section 6.0.4 states: "INITIATE a new Title Page (DCM FORM 5-1A) for the calculation with a new revision number". The new title page delineated in section 6.0.4 is applicable only to the calculation to be superseded as delineated in the previous section 6.0.3. Additional support for this position can be found in Nuclear Document Services Procedure (NDS) 3.1 titled "Indexing Controlled Documents in PassPort" (attached). Section 1.7 is titled "Superseding a Calculation with a Calc or CCN" clearly indicates that a CCN can be used for superseding calculations.
Significance Level criteria do not apply here as this is not a discrepant condition.

Attachments: Nuclear Document Services Procedure (NDS) 3.1, Rev. 1

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:	Caruso, A.	☒	☐	☐	5/21/98
VT Lead:	Ryan, Thomas J	☒	☐	☐	5/21/98
VT Mgr:	Schopfer, Don K	☒	☐	☐	5/22/98
IRC Chmn:	Singh, Anand K	☐	☐	☐	

Date: 5/21/98

SL Comments:

S&L's Comments on NU's First Response

NU's response is not acceptable.

The process to make changes to a calculation is covered in DCM Chapter 5, Section 5. The process to supercede a calculation is covered in DCM Chapter 5, Section 6.
Section 6 does not include the use of CCN's to supercede calculations nor to use CCN's to update the CPT Data Base. Per DCM Chapter 5, Section 5, CCN's are only used to change calculations. The issuance of CCN # 2 to Calculation 90-069-1130 M3 to ".....supercede Calculations 12179-P(T)-1148, Rev. 1

and NM-037-HVK." is a discrepancy against the procedural requirements of the NU DCM, Revision 5.

S&L's Comments on NU's Second Response

NU's response is acceptable.

Based on Nuclear Document Services Procedure (NDS) 3.1, Section 1.7 it was noted that a CCN can be and has been an acceptable tool to use for superseding calculations.

Note: Nuclear Document Services Procedure (NDS) 3.1is titled "Indexing Controlled Documents in PassPort" (attached). Section 1.7 of NDS 3.1 is titled "Superseding a Calculation with a Calc or CCN".

Based on the above document, this DR can be considered to be Non-Discrepant.

Northeast Utilities
Millstone Unit 3

ICAVP
Discrepancy Report

DR No. DR-MP3-0393

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

DR RESOLUTION ACCEPTED

Potential Operability Issue
○ Yes
◉ No

Date FAXed to NU:

Date Published: 10/23/97

Discrepancy: Inconsistencies in stress analysis of valve encapsulation

Description: In the process of reviewing the following calculations,

(i) 12179-NM(B)-20-JE Rev 0, dated 4/8/77
(ii)12179-NP(F)-X7925 Rev 2, CCN 6, dated 10/18/96

we noted the following discrepancies:

Background:

Calculation (i) is the stress analysis of the encapsulation arrangement for valves RSS*MOV23A thru D. The encapsulation is provided to prevent leakage of radioactive water in the emergency safeguard area.

Discrepancies:

Calculation (i) uses input from pipe stress analysis group (thermal and seismic loads). No reference is provided for the source of this input. This input has not been updated to reflect the latest stress analysis calculation (ii) despite the fact that the current loads in (ii) exceed the loads used in calculation (i).

For detail evaluation of embedment design under combined thermal and seismic loads, calculation (i) on page 56 refers to Appendix-2 . No Appendix-2 is attached to the calculation.

The loads shown on page 29 are derived from the loads shown on page 58. The difference between the two sets of loads is a coordinate axis rotation. The load transfer is numerically inconsistent with the shown rotation angle and the coordinate axes.

		Valid	Invalid	Review Needed	Date
Initiator:	Prakash, A.	☒	☐	☐	10/8/97
VT Lead:	Neri, Anthony A	☒	☐	☐	10/9/97
VT Mgr:	Schopfer, Don K	☒	☐	☐	10/14/97
IRC Chmn:	Singh, Anand K	☒	☐	☐	10/17/97

Date:

INVALID:

Date: 5/19/98

RESOLUTION: First Response
ID: M3 - IRF - 02147

Disposition:
NU has concluded that the issue reported in DR-MP3-0393 has identified a CONFIRMED SIGNIFICANCE LEVEL 4 condition which requires correction. The loads used in calculation 12179-NM(B)-10-JE, rev. 1 do not reflect the latest loads. Calculation 12179-NP(F)-X7925, rev. 2, CCN 6, provides the detail design loads of the valve encapsulation (basically a pipe within another pipe) and demonstrates the acceptability of these loads. Calculation 12179-NP(B)-X7925, rev. 2, CCN 6 also transmits the embedment loads to the structural supports. Thus, the approved corrective action plan for CR M3-98-2246 requires calculation 12179-NM(B)-10-JE, rev. 1, be superseded by Calculation 12179-NP(B)-X7925, rev. 2, CCN 6, after startup since its results will not change.

Conclusion:
NU has concluded that the issue reported in DR-MP3-0393 has identified a CONFIRMED SIGNIFICANCE LEVEL 4 condition which requires correction. The approved corrective action plan for CR M3-98-2246 requires calculation 12179-NM(B)-10-JE, rev. 1 to be superseded by calculation 12179-NP(B)-X7925, rev. 2, CCN 6 after startup.

Attachments:
CR M3-98-2246 with approved corrective action plan

Second Response
ID: M3 - IRF - 02354

During the May 13, 1998, telecon, Sargent & Lundy requested clarification of the information submitted in M3-IRF-02147. Specifically, with calculation 12179-NM(B)-10-JE, rev.1, being superceded by calculation 12179-NP(B)-X7925, rev. 2, what happens to the design information in calculation 12179-NM(B)-10-JE concerning the other components of the encapsulation assembly?

Disposition:
NU has concluded that this issue reported in DR-MP3-0393 has identified a CONFIRMED SIGNIFICANCE LEVEL 4 condition which requires correction. The pertinent design information of the other components of the encapsulation assembly will be incorporated into calculation 12179-NP(B)-X7925, rev. 2, by CCN. Thus this information will be retained. The CCN will be issued after startup since LB or DB is not impacted. Calculation 12179-NM(B)-10-JE, rev. 1, will be superceded in accordance with the corrective action plan of CR M3-98-2246 after startup.

Conclusion:
NU has concluded that this issue reported in DR-MP3-0393 has identified a CONFIRMED SIGNIFICANCE LEVEL 4 condition which requires correction. The pertinent design information of the

other components of the encapsulation assembly will be incorporated into calculation 12179-NP(B)-X7925, rev. 2, by CCN. Thus this infromation will be retained. The CCN will be issued after startup since LB or DB is not impacted. Calculation 12179-NM(B)-10-JE, rev. 1, will be superceded in accordance with the corrective action plan ofCR M3-98-2246 after startup.

Attachments:
None

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:	Prakash, A.	☒	☐	☐	5/19/98
VT Lead:	Neri, Anthony A	☒	☐	☐	5/19/98
VT Mgr:	Schopfer, Don K	☒	☐	☐	5/21/98
IRC Chmn:	Singh, Anand K	☐	☐	☐	
Date:	5/19/98				

SL Comments: First Response:

We concur with NU that calculation NP(F)-X7925, rev. 2, CCN 6 provides the most recent design loads for the valve encapsulation assembly (basically a pipe within another pipe). This calculation also demonstrates the acceptability of these loads for the encapsulation assembly cross-section, and transmits the embedment loads to the structural supports.

Calculation NP(F)-X7925, rev. 2, CCN 6 does not, however, completely demonstrate the acceptability of the encapsulation assembly. The complete assembly is comprised of several flanges, bolts, shear pins, which were evaluated in calculation NM(B)-10-JE, rev. 1. The evaluation of these components is not performed in NP(F)-X7925, rev. 2, CCN 6.

Therefore, calculation NM(B)-10-JE, rev. 1 should not be superceded by calculation NP(B)-X7925, rev. 2, CCN 6 without any additional evaluation of the encapsulation assembly components.

Second Response:

NU's response that pertinent design information for other components of the encapsulation assembly will be incorporated, after startup, into calculation NP(B)-X7925, rev. 2 by CCN is acceptable.

Northeast Utilities
Millstone Unit 3

ICAVP
Discrepancy Report

DR No. DR-MP3-0556

Review Group: Configuration
Review Element: System Design
Discipline: Electrical 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: 11/2/97

Discrepancy: Inadequate Spacing

Description: The valve operator for 3QSS*MOV20D is located within ¾ of an inch of the ESF building building steel. This valve is attached to piping anchored at a Containment penetration. Given the established 4 inch seismic gap between buildings, it appears that a potential seismic interaction condition exists.

		Valid	Invalid	Review Needed	Date
Initiator:	Sarver, T. L.	☒	☐	☐	10/19/97
VT Lead:	Neri, Anthony A	☒	☐	☐	10/27/97
VT Mgr:	Schopfer, Don K	☒	☐	☐	10/28/97
IRC Chmn:	Singh, Anand K	☒	☐	☐	10/30/97

Date:

INVALID:

Date: 5/21/98

RESOLUTION: First Response
ID M3-IRF-01464

Disposition:
NU has concluded that the issue reported in Discrepancy Report, DR-MP3-0556, does not represent a discrepant condition. Since 3QSS*MOV20D does not exist, it is assumed that the valve in question is 3RSS*MOV20D. A walkdown determined that valve 3RSS*MOV20D was located near ESF Building Steel. A review of the Accelerations and Displacements Table B-2 (attached) for the Containment Structure and Table B-11 (attached) for the Engineered Safety Features Building concluded that the sum of the North-South displacements for SSE at the nearest elevation of the valve is 0.134". Due to the configuration of the piping the valve will move away from the ESF Building Steel as the system grows thermally or during a DBA so these displacements are not of concern, accordingly no interaction condition exists.

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

Conclusion:
NU has concluded that the issue reported in Discrepancy Report, DR-MP3-0556, does not represent a discrepant condition. A review of the Accelerations and Displacements Table B-2 (attached) for the Containment Structure and Table B-11 (attached) for the Engineered Safety Features Building concluded that the sum of the North-South displacements for SSE at the nearest elevation of the valve is 0.134". Since this

valve will thermally move away from the interference during system operation or during a Design Basis Accident, no interaction condition exists.

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

Second Response
ID:M3-IRF-01950

Disposition:
NU has concluded that Discrepancy Report DR-MP3-0556, does not represent a discrepant condition. Since valve 3RSS*MOV20D is attached to the containment structure with approximately 3 feet of piping, and your original response questioned the 4 inch seismic gap between the Containment building and the ESF building, we based our original response on the combination of the maximum seismic movements for each of the structures at the applicable elevation. As shown on the attached table taken from stress calculation NP(F)-X7919, Rev. 2, CCN 08, the combined SSE displacements in the X and Z direction of the valve operator at node point 618 plus the time history, dead weight, and ESF building displacements are less than 0.2 inches. With respect to your response on thermal growth, we agree that if the system is not operating, the valve will not thermally move away from the interference. Our reference to the thermal growth on our original response was only to show that the clearance increased and not decreased under thermal conditions. To support our follow-up response, we performed a more detailed walk-down which included taking pictures (attached) and measurements of the area to help substantiate the precise available clearance in the field. As shown in the pictures, the clearance is not 0.75 inch but 0.25 inch and the interference is not with the structural steel but with the pyrocrete which covers the structural steel. Further investigation determined the following:

1. The walkdown to support the commodity clearance evaluation described in section 7.2 and attachment F of CCN 8 of stress calculation NP(F) X7919, revision 2 was performed in July 96.

2. Automated Work Order (AWO) M3 97 12489 (attached) was completed in September of 97. This AWO repaired discrepancies in the fire coating in the "B" RSS cubicle ESF Building 4'-6" overhead behind MOV 20D.

3. Since the original S&L discrepancy is dated October 30, 1997, it is assumed that your walkdown took place during the month of October.

Based on the above time frame, the pyrocrete patch was not installed during the commodity clearance walkdown described in item 1 above which also explains why the 0.25 inch RSS valve operator clearance is not documented on the reconciliation

isometric drawing CI-RSS-7. The S&L walkdown described in item 3 above followed completion of the AWO thereby generating the original S&L discrepancy report DR-MP3-0556.Although the 0.25 inch clearance is adequate for fit, form and function, it could not be determined if the addition of the pyrocrete patch was evaluated by Design Engineering as recommended in the Work Performance Guidelines of U3 WC1. Therefore, Condition Report (CR) M3-98-1727 (attached) has been generated to determine required corrective actions.

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

Conclusion:
NU has concluded that Discrepancy Report DR-MP3-0556, does not represent a discrepant condition. As shown on the attached table taken from stress calculation NP(F)-X7919, Rev. 2, CCN 08, the combined SSE displacements of the valve operator at node point 618 plus the time history, dead weight, and ESF building displacements are less than 0.2 inches. Following the commodity clearance walkdown evaluation performed in July of 96, a pyrocrete patch (fire proofing) was added per Automated Work Order (AWO) M3 97 12489 (attached) in the area of the clearance thereby reducing the available clearance to 0.25 inch. Although the 0.25 inch clearance is adequate for fit, form and function, it could not be determined if the addition of the pyrocrete patch was evaluated by Design Engineering as recommended in the Work Performance Guidelines of U3 WC1. Therefore, Condition Report (CR) M3-98-1727 (attached) has been generated to determine required corrective actions. Significance Level criteria do not apply here as this is not a discrepant condition.

Attachments:
Table - Displacements at Node No. 618, calculation NP(F)-X7919
Digital Pictures of clearance, Plan and two Sections
AWO M3 97 12489
CR M3-98-1727

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:	Prakash, A.	☒	☐	☐	5/21/98
VT Lead:	Neri, Anthony A	☒	☐	☐	5/21/98
VT Mgr:	Schopfer, Don K	☒	☐	☐	5/22/98
IRC Chmn:	Singh, Anand K	☐	☐	☐	
Date:	5/21/98				

SL Comments: Comments on First Response ID M3-IRF-01464

NU's disposition, while considering the SSE movements of the ESF Building and the Containment structure, neglects the SSE movements of the valve operator itself. The disposition that, since the valve will thermally move away from the interference during system operation or during a Design Basis Accident, no interaction condition exists, is not acceptable. During an SSE event, if the system is not operating, the valve will not thermally move away from the interference. For the RSS system, this is the more credible DBA case.

The subject valve operator for 3RSS*MOV20D is shown on Piping Location Isometric CI-RSS-7 Sheet 3, and the associated piping is analyzed in pipe stress analysis calculation NP(B)-X7919 Rev. 2.

According to the commodity clearance evaluation performed in the stress analysis calculation, 'locations with a clearance less than 1" are identified on the piping location isometrics'. However, PLI CI-RSS-7 Sh. 3 does not show the 3/4" clearance identified in this DR.

Also, according to the commodity clearance evaluation, locations where piping displacements exceed 1" are evaluated in Attachment F of the stress analysis calculation. The valve operator is modeled in the stress analysis as NP618. According to Attachment F, SRSS of the total movement at NP618 exceeds 1". Yet, the 3/4" clearance between the valve operator and the ESF building steel has not been identified or evaluated.

Comments on Second Response
ID M3-IRF-01950

We concur with NU that the combined SSE, time history, and dead weight displacement of the valve operator plus the ESF building displacement is less than 0.2 inches.

This, however, assumes that the interfering steel displacements are the same as the ESF building floor displacements, in other words, the auxiliary steel movement is not amplified beyond the building floor movement. Considering that the margin available is less than 0.05", this assumption should be justified in the Design Engineering evaluation.

Since a commodity clearance evaluation for an 'as-built' condition was not performed in the existing stress analysis calculation, and the addition of the pyrocrete patch was not evaluated by design engineering as recommended in the work performance guidelines, we view this as a discrepant level 4 condition.

NU concurred with the level 4 designation during a May 20, 1998 teleconference.

Northeast Utilities
Millstone Unit 3

ICAVP
Discrepancy Report

DR No. DR-MP3-0725

Review Group: System
Review Element: System Design
Discipline: Mechanical Design
Discrepancy Type: Calculation
System/Process: HVX
NSC Significance level: 4

DR RESOLUTION ACCEPTED

Potential Operability Issue
○ Yes
◉ No

Date FAXed to NU:

Date Published: 1/10/98

Discrepancy: SLCRS Exhaust Fans 3HVR*FN12A/B Operating Point

Description: During review of the supplementary leak collection and release system (SLCRS) exhaust fan compliance with Regulatory Guide 1.52, Rev. 2, paragraph C.3.l a discrepancy was identified regarding evaluation of fan operation under all operating conditions.

Reg. Guide 1.52, Rev. 2, paragraph C.3.l requires the system fan, mounting, and ductwork connections to be designed, constructed, and tested in accordance with Section 5.7 and 5.8 of ANSI N509-1976.

ANSI N509-1976 Section 5.7.1 requires that:

1) The system designer shall prepare a system characteristic curve for design and limiting conditions under which the fans will be required to operate.

2) The fan shall be selected to operate on the stable portion of its pressure curve under all operating conditions.

Note 2 on P&ID EM-148E-10 states that the SLCRS flow rate of 9500 cfm represents the specified design flow rate also used for system balancing. System operability is demonstrated by technical specification surveillance flows of 7,600 to 9,800 cfm.

On an SIS signal, with power available to both divisions, fans 3HVR*FN12A and 3HVR*FN12B both start and operate in parallel until one fan is shut down.

Discrepancies:

1) Review of the fan curve included in PDCR MP3-92-024 for the 38.5 inch diameter wheel indicates that at an airflow of 7,600 cfm the fan could be operating at or very near the unstable portion of the fan curve. A calculation that evaluates this condition was not found.

2) Operation of fans 3HVR*FN12A and 3HVR*FN12B in parallel would result in the fans operating in a potentially unstable portion of the fan curve. A calculation that evaluates this condition with the new fan wheels installed was not found.

		Valid	Invalid	Review Needed	Date
Initiator:	Stout, M. D.	☒	☐	☐	12/16/97
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: 5/21/98

RESOLUTION: First Response

NU has concluded that Discrepancy Report DR-MP3-0725 has identified a condition not previously discovered by NU which requires correction.

(Item numbers correspond to the two discrepancies listed above)
(2) The SLCRS System is not designed for parallel operation of fans 3HVR*FN12A/B, however, a Safety Injection Signal does actuate both fans. Surveillance testing with both fans running verifies that system performance meets the requirements of the Technical Specification. It is not known whether fans 3HVR*FN12A/B are performing near or in the unstable region of the fan curve in this mode of operation. FSAR section 6.2.3.4 states "Capacity and performance of (the SLCRS) fans conform to the required conditions and ratings and are in compliance with AMCA test codes and certified ratings program." NU has no calculation to support this statement when both SLCRS fans are operating simultaneously. CR-M3-98-0404 has been written to address this discrepancy. The approved corrective action plan to this CR requires preparation of a calculation to evaluate the performance of both fans 3HVR*FN12A/B during the phenomenon of parallel operation. Need for further corrective action will be determined depending upon the results of the calculation. Completion of calculation/corrective action required prior to startup.NU concurs that this is a Significance Level 3 issue.

(1) At 7600 CFM, which is the minimum acceptable airflow per the Technical Specification, the fan curve prepared by the Buffalo Forge factory, and based on the system total pressure loss determined by calculation PBV-45AF, confirms that each fan (equipped with a 38.5" diameter wheel) will operate just to the right of the peak. This is the lower end of the stable region, but 7600 CFM is the minimum acceptable airflow, so there is very low probability that the fan will enter the unstable region of operation. Normal operation of the SLCRS System places fan performance well within the stable region of the fan curve. No calculation is considered necessary because the fan manufacturer, Buffalo Forge, prepared the fan curve based on our system pressure loss calculation and the operating characteristics of their model 730 L-17 SWSI centrifugal fan fitted with a 38.5" diameter wheel. This condition is not a discrepancy.

Attachments:
CR M3-98-0404 with approved corrective action plan.

Second Response (M3-IRF-2127)

NU has concluded that Discrepancy Report DR-MP3-0725 has identified a condition not previously discovered by NU which requires correction. System performance during single fan and parallel fan operation was analyzed as part of the corrective action for CR M3-98-0404.

In regard to item 1, single fan operation has been evaluated in M3-EV-98-0061, Rev. 0, Technical Evaluation for SLCRS 3HVR*FN12A/B Fan Flow During Single and Parallel Fan Operation at Minimum Technical Specification Flow. A copy of this document is attached. It was concluded that single fan operation will be in the stable region of the manufacturer's fan curve. This conclusion is explained in detail in the Technical Evaluation.

Item 2. The parallel operation of two fans will be verified by a special test (SPROC), and the results included in the next revision to this Technical Evaluation. This test, which is being tracked by AR 98001841-04, will collect measurements of vibration, static pressure differential across the fan and flow rates for each of the fans, first in single fan alignment and then in parallel alignment. A detailed description of the test methodology will be found in the attached Technical Evaluation. There is no change in system design parameters or system operation resulting from this evaluation. The SPROC test will be performed before startup. Meanwhile, the possibility of unstable fan performance when SLCRS fans are operating simultaneously was considered by examining the results of past system tests. Two drawdown tests were performed in 1992 with the fans running in parallel. Both tests were successful; the negative pressure was drawn smoothly and remained steady after equilibrium was reached.

As discussed in the S&L/NU meeting of 4/14/98 at Millstone, this issue is downgraded to Significance Level 4.

Attachments:
M3-EV-98-0061, Rev. 0 Technical Evaluation for SLCRS 3HVR*FN12A/B Fan Flow During Single and Parallel Operation at Minimum Technical Specification Flow
Action Request Report (A10) for AR 98001841

Third Response (M3-IRF-02348)

NU has concluded that this issue, reported in DR-MP3-0725, has identified a CONFIRMED SIGNIFICANCE LEVEL 4 condition which requires correction.

In accordance with the approved corrective action for CR M3-98-0404, a special procedure (SPROC) was written to test parallel operation of the SLCRS fans 3HVR*FN12A/B. The test was performed on 5/9/98. Results of the test are reported in Revision 1 of Technical Evaluation M3-EV-98-0061, (incorporating SPROC EN98-3-12), a copy of which is attached to this transmission. At issue is the ANSI N509, sec. 5.7.1 requirement: "...The fan shall be selected to operate on the

stable portion of its pressure curve under all operating conditions....." Based on the successful test results summarized in Technical Evaluation M3-EV-98-0061, Rev. 1, NU concludes that parallel operation of fans 3HVR*FN12A/B is stable and is not an operability concern. FSAR Table 1.8-1 will be revised to take exception to the R.G. 1.52 requirement to conform to ANSI N509, section 5.7.1. Corrective action is being tracked by AR 98001841-05 and will be completed post startup. System performance and operability are in compliance with MP3 design and licensing bases.

Attachments:
M3-EV-98-0061, Rev. 1 Technical Evaluation for SLCRS 3HVR*FN12A/B Fan Flow During Single and Parallel Operation at MinimumTechnical Specifications Flow including SPROC EN98-3-12, Rev. 0

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.	☒	☐	☐	5/21/98
VT Lead:	Neri, Anthony A	☒	☐	☐	5/21/98
VT Mgr:	Schopfer, Don K	☒	☐	☐	5/22/98
IRC Chmn:	Singh, Anand K	☐	☐	☐	
Date:	5/21/98				

SL Comments: Comments on First Response

Disagree with response to item 1. At 7,600 cfm the fan curve included as Attachment 2 in PDCR MP3-92-024 shows the operating point at essentially the top of the curve. Small changes in system pressure due to wind gusts or Unit 1 or 2 airflows in the Unit 1 stack could result in the fan operating in an unstable portion of the fan curve. NU should confirm with the fan vendor what the minimum airflow for stable fan operation is and revise the allowable fan airflow accordingly.

Agree with response for item 2. Results of the calculation that evaluates parallel fan operation is needed to determine final significance level of the DR.

Comments on Second Response

Agree with NU's response that single fan operation at 7600 cfm is slightly to the right of the peak on the fan curve and on the stable side of the curve. Also agree that parallel operation of the fans is unlikely to result in the filter housing design pressure being exceeded.

Agree with NU's response and Technical Evaluation M3-EV-98-0061, Rev. 1 that during parallel operation of the fans the operating point will be to the left of the peak on the fan curve. This operating point may result in unstable operation. This does not meet the licensing basis requirement to select the fan to operate on the stable portion of its pressure curve under all

operating conditions. This is considered to be a significance Level 3 discrepancy which is in disagreement with the significance level 4 classification proposed by NU.

The final significance level of the DR is pending the results of the parallel fan operation test (SPROC).

Comments on Third Response

References:

1) AMCA Publication 201, Appendix A
2) 1992 ASHRAE Systems and Equipment Handbook, chapter 18
3) Fan Engineering 8th Edition published by Buffalo Forge Company

The results of the SPROC for parallel operation of the fans indicate that each fan operates to the left of the peak on the fan curve. The fans operate far enough to the left of the peak on the curve to avoid fluctuating load conditions on the fans. The test results indicate that there were no significant changes in the fan vibration levels (see DR-MP3-0762 regarding fan vibration levels exceeding ANSI N509-1976 limits). Operating the fans on the left side of the peak on the fan curve does not meet the specific requirements of Reg. Guide 1.52, Rev. 2 nor recommended industry practice (ref. 1 & 2).

Agree with NU that this is a Level 4 discrepancy since the test results indicate that fan operation is stable which meets the intent of RG 1.52, Rev. 2 and ANSI N509-1976.

Northeast Utilities
Millstone Unit 3

ICAVP
Discrepancy Report

DR No. DR-MP3-0738

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

DR RESOLUTION ACCEPTED

Potential Operability Issue
( ) Yes
(•) No

Date FAXed to NU:

Date Published: 12/20/97

Discrepancy: Supply and Return Air Registers

Description: During review of the charging pump and component cooling water pump area ventilation system and the MCC and rod control area air conditioning system a discrepancy regarding the safety and seismic classification of the supply and return air registers was identified.

FSAR Table 3.2-1 identifies these systems as QA Category I and Seismic Category I systems.

Specification 2170.430-565 states that the supply air registers shall be Agitair Type DDHO with Type "O" opposed action valve and the return air registers shall be Agitair Type DHFO with Type "O" opposed action valve. The specification does not identify the registers as QA I, Seismic Category I components.

Failure of the opposed action valve in the supply and return air registers to remain in position following a seismic event would affect the air distribution and the ability of the ventilation system to perform it's safety function.

		Valid	Invalid	Review Needed	Date
Initiator:	Stout, M. D.	☒	☐	☐	12/2/97
VT Lead:	Neri, Anthony A	☒	☐	☐	12/9/97
VT Mgr:	Schopfer, Don K	☒	☐	☐	12/11/97
IRC Chmn:	Singh, Anand K	☒	☐	☐	12/16/97

Date:

INVALID:

Date: 5/19/98

RESOLUTION: First Response

NU has concluded that DR-MP3-0738 does not represent a discrepant condition. As indicated in the MNPS-3 FSAR Table 3.2-1, the charging pump and component cooling water pump area ventilation system and the MCC and rod control area air conditioning system are QA Category 1 and Seismic Category 1 systems. This is confirmed by correspondence letter from NU to the NRC dated 9/26/85, that in accordance to Amendment 15 of the FSAR, these systems are QA 1 Seismic Cat 1

The question, 'The specification does not identify the registers as QA I, Seismic Category I components' can be clarified by referencing to specification 2170.430-565 Rev.9, Installation of Ventilation and Air Conditioning Systems, which is a Nuclear Safety Related document. As specified on page 1-3, Furnished

By The Contractor, item k, registers and diffusers with accessories, are work covered by this specification. Also, on page 2-11, HVAC Systems Classification, identifies those systems which are Seismic Category I, this implies that all components as part of the HVAC system will be QA I, Seismic Category I. Page 2-16 identifies the charging pump and component cooling water pump area ventilation system and the MCC and rod control systems as QA Category I and SM, the 'S" meaning Seismic, which determines its construction requirements. On page 2-22 an explanation of the duct system mentions all fittings, cross joints, turning vanes, hangers, etc., and accessories as shown on the Engineers drawings.

On drawings 2170.430-565-131D through 134D, this shows the ductwork identified by Spec 2170.430-565, which includes the Grilles, Registers, Diffusers and Accessories, as identified on page 2-41 of the Spec. Therefore, since the ductwork is installed to the requirements of QA Category I Seismic Category 1, then the registers, being an integral component of the ductwork, are also QA Category I Seismic Category I. Details of the registers and dampers (valves) are on reference drawings AS-401-1 and AS-603-1 from Spec 2170.430-565 Rev.9.

The seismic construction of the system ensures that the components, including the registers and dampers (valves) will perform their intended safety function in the event of a seismic occurrence.

Conclusion:
Design of the charging pump and component cooling water pump area ventilation system and the MCC and rod control area air conditioning systems is a QA Category I Seismic Category 1 system based on the requirements of GDC-2, Design bases for protection against natural phenomena; GDC-4, Environmental and dynamic effects design bases; GDC-5, Sharing of structures, systems and components; and Reg Guide 1.29 Seismic design classifications of system components. The system is constructed and components installed in accordance with Spec 2170.430-565 to meet these requirements. The drawings reflect the implementation of the design and specification, so therefore, it is concluded that the registers being an integral component mounted to the ductwork in accordance with the seismic requirements of Spec 2170.430-565 are QA Category I Seismic Category 1. Any future purchase of components, i.e., registers, will be in accordance with the NUQAP (Northeast Utilities Quality Assurance Program) which satisfies the requirements of RG 1.123 Quality Assurance Requirements for the Control of Procurement of Items and Services for Nuclear Power Plants. Since there is no corrective action required, this DR is not a restraint to the unit start-up.

Attachments:
1. Excerpts from Letter to the NRC from NU, dated 9/26/85
2. Spec 2170.430-565 Rev.9, drawings AS-401-1 and AS-603-1

Second Response (M3-IRF-2092)

NU has concluded that Discrepancy Report DR-MP3-0738 has identified a condition not previously identified by NU which requires correction.

NU has written CR M3-98-2014 to address the seismic qualifications of air registers with adjustable blades. The approved corrective action for this CR will generate an engineering evaluation to define the component specific seismic qualification requirements applicable to ventilation registers with adjustable blades. Specification 2170.430-565 imposed Seismic Category I requirements, but did not require component specific seismic qualification documentation for ventilation registers. Although the adjustable blades may be moved to control air flow, their position is set during initial system balancing only, and not subject to further movement during routine operation or surveillances. The blades are turned by an adjusting screw that also locks the assembly against movement by forces applied directly to the damper blades. In an earthquake, no mechanism exists to move the blades into the closed position, thereby blocking airflow through the register. Corrective action will be completed post startup. Since MP3 design and licensing bases are not affected by this issue,

NU considers this a Significance Level 4 discrepancy.

Attachments:
CR M3-98-2014 with approved corrective action.

Supplemental Response (M3-IRF-2344)

Per telephone conference on 5/5/98, S&L has requested additional justification for deferring a Seismic Qualification Review of air registers installed in seismic duct systems.

NU has concluded that this issue reported in DR-MP3-0738 has identified a CONFIRMED SIGNIFICANCE LEVEL 4 condition which requires correction.

Millstone Unit 3 Maintenance removed a 46" x 22" register from the Auxiliary Building ventilation system on May 7, 1998 for cleaning and inspection. Mr. T. J. Tracy of Unit 3 Design Engineering inspected the register and recorded as-built measurements. Inspection results are contained in 25212-ER-98-0162 (copy attached). The register consists of a 20 Ga sheet metal frame, fixed horizontal blades on the front, and adjustable horizontal damper blades in the rear. An adjusting screw accessible through the fixed blades controls the position of the damper blades. As shown in the attached Engineering Record Correspondence, an eccentric post on the adjusting screw engages an elongated slot in the sliding plate. Rotation of the screw moves the sliding plate which in turn rotates the individual damper blades.

The unit selected for inspection weighed approximately 25 lbs, light enough to be vigorously shaken by hand during the

inspection. The position of the damper blades remained fixed during and after the shaking. Additionally, torque applied by hand to an individual blade failed to move the sliding plate or otherwise alter the position of the damper blades.

The physical inspection confirms previously stated conclusions that this component is seismically rugged and that the damper blades are not subject to repositioning during a seismic event.

As stated in M3-IRF-02092, the approved corrective action for CR M3-98-2014 will perform an engineering evaluation to establish the seismic qualifications of these components. Meanwhile, NU maintains that there is no credible failure mode that would result in blocked or restricted air flow through these registers, and deferral of corrective action is justified.

Conclusion:
As detailed above, a field inspection was performed on a seismic register with adjustable blades, and recorded in Engineering Record Correspondence 25212-ER-98-0162. The physical inspection confirms previously stated conclusions that this component is seismically rugged and that the damper blades are not subject to repositioning during a seismic event.

As stated in M3-IRF-02092, the approved corrective action for CR M3-98-2014 will perform an engineering evaluation to establish the seismic qualifications of these components. Meanwhile, NU maintains that there is no credible failure mode that would result in blocked or restricted air flow through these registers, and deferral of corrective action is justified.

Attachments:
Engineering Record Correspondence 25212-ER-98-0162

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.	☒	☐	☐	5/20/98
VT Lead:	Neri, Anthony A	☒	☐	☐	5/20/98
VT Mgr:	Schopfer, Don K	☒	☐	☐	5/21/98
IRC Chmn:	Singh, Anand K	☐	☐	☐	
Date:	5/19/98				

SL Comments: Comments on First Response

NU's response does not adequately address the seismic qualification of the supply and return air registers furnished by Specification 2170.430-565.

Agree with NU's response that Specification 2170.430-565 identifies the charging pump and component cooling water pump area ventilation system and the MCC and rod control area air conditioning system as QA Category I and Seismic Category I systems. However, the specification does not specify the seismic qualification requirements for the supply and return air registers.

The opposed action valve (damper) in the supply and return air registers is typically used during air balance of the system to adjust airflow at the register. Failure of the opposed action valve to remain in place following a seismic event would result in changes to the system air distribution that would place the system in an unanalyzed condition.

NU's response should provide evidence that the supply and return air registers have been seismically qualified and that the opposed action valve does not change position.

Comments on Second and Supplemental Responses

On May 19, 1998 NU faxed a copy of A/R Assignment No 98007718-02 that states "Revise description of assignment 2 per discussion with ICAVP Contractor (S&L) and NRC. Perform a Technical Evaluation to define the component specific seismic qualification requirements applicable to ventilation air terminal registers. The TE will 1) establish the system based mission requirements for this component during a seismic event; 2) survey seismic requirements for comparable components from other plants licensed to IEEE 344-75 (or later); and 3) reflect the as-built dimensions contained in 25212-ER-98-0162 when developing the seismic qualification requirements. Implement the requirements, if any, determined by the Technical Evaluation."

Based on the information provided by NU and the corrective action described in Assignment No. 98007718-02 for CR M3-98-2014 noted above this is considered to be a significance level 4 discrepancy.

Northeast Utilities
Millstone Unit 3

ICAVP
Discrepancy Report

DR No. DR-MP3-0745

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

DR RESOLUTION ACCEPTED

Potential Operability Issue
○ Yes
● No

Date FAXed to NU:

Date Published: 1/10/98

Discrepancy: Incomplete close-out on Licensee Event Report (LER) commitments.

Description: The corrective actions to an LER committed to monitoring outside air temperature every 8 hours. It then directs the plant staff to take actions when the outside air temperature drops below 20 degrees Fahrenheit. A commitment record was revised on March 24, 1997 to eliminate the need for monitoring the outside air temperature. The corrective actions in the LER were not revised.

LER 92-020-00 was written on September 23, 1992. NU commitment was "Outside air temperature will be monitored every 8 hours. If outside air temperature drops below 20 degrees Fahrenheit, one train of Auxiliary Building Filter System will have its VIVs and temperature control dampers placed in automatic and the other train will be placed in the pull to lock and declared inoperable" (Commitment Record 17389).

NU letter B14279 was written on November 12, 1992. This letter was written to inform the NRC staff of "...the background, status, and course of action taken for resolution of the design deficiencies related to the Auxiliary Building Ventilation System (ABVS) and Supplementary Leak Collection and Release System (SLCRS) for Millstone Unit No. 3." The letter acknowledged additional actions required to support plant operation with an outside air temperature below 17 degrees Fahrenheit. These actions included adding non-safety grade temporary heat system inside the auxiliary building. Two Commitment Records 19216 and 19219 were written on November 12, 1992 and remain open.

Commitment Record 17389 was revised on March 24, 1997. The validation text states that " the monitoring of outside air temperature is no longer necessary after that PDCR MP3-93-067 installed a QA Cat 1 heating system to maintain the summer/winter temperature of the Aux building CHS/CCP within the design limits."

S&L considers the corrective action of installing the category 1 heating system to be the appropriate corrective action. However, the LER 92-020 corrective actions were not revised. Thus the Nuclear Regulatory Commision (NRC) was not notified of the change. This is considered to be inadequate close-out of regulatory commitments and to be a discrepancy.

		Valid	Invalid	Review Needed	Date
Initiator:	Pieniewicz, R.	☒	☐	☐	12/17/97

VT Lead:	Bass, Ken	☒	☐	☐	12/18/97
VT Mgr:	Schopfer, Don K	☒	☐	☐	12/23/97
IRC Chmn:	Singh, Anand K	☒	☐	☐	12/31/97

Date:

INVALID:

Date: 5/19/98

RESOLUTION: Disposition:

NU has concluded that the issue reported in DR-MP3-0745, has identified a NON-DISCREPANT condition. After reviewing LER 92-020 and the commitment records associated with the subject event, NU has concluded that, the temperature monitoring commitment was only a temporary measure. The Corrective Action section of the LER states: "With these settings, continued safe operation is based on maintaining Charging Pump and Component Cooling Water Pump and Heat Exchanger Area temperature above 32 degrees Fahrenheit. The following information shows that this is achievable through October 31, 1992□
□-□Historical meteorological data contained in section 2.3 of the FSAR shows that the lowest □□□minimum temperature during October over the 80 year period was 20 degrees Fahrenheit.
□- □based on a worst case outside temperature of 20 degrees Fahrenheit , the heat generated in the □□□charging pump and component cooling pump and heat exchanger area will raise temperature □□□above the required 32 degrees Fahrenheit.
□- outside air temperature will be monitored every 8 hours. If outside air temperature drops below □□□20 degrees Fahrenheit, one train of the Auxiliary Building Filter System will have its VIVs and □□temperature control dampers placed in automatic and the other train will be placed in pull to □□□lock and declared inoperable. Previous surveillance testing has shown that this configuration □□□operates satisfactorily."

The above paragraph indicates that those measures were intended to last through October 31, 1992 only. Since this was indicated in the LER, no further notification was necessary. Furthermore, the November 12, 1992 letter was written for information and to set the stage for a necessary temporary Technical Specification change. Letter B14290 requests that temporary Technical Specification change. This temporary Technical Specification change provided relief allowing continued plant operation during periods when outside air temperature dropped below 17 degrees Fahrenheit provided a temporary heating source is operating to maintain at least 32 degrees Fahrenheit within the charging pump/reactor plant component cooling water pump areas of the Auxiliary Building. Page 10 of letter B14290 states the following: "This proposed technical specification change would be temporary and would expire automatically upon achieving Mode 4 during startup of Cycle 5". Through the PI-6 program, Licensing Review Process, the commitment records were reviewed and validated. The Event Summary (letter B14279) and Temporary Licensing

Amendment (letter B14290) were viewed as NRC notifications of the temporary ambient air temperature surveillance commitment change. The LER 92-020-00 temperature monitoring commitment would only be applicable until the implementation of PDCR MP3-92-103 which had a restriction on operating below 17°F. until the NRC approved the non-QA heaters via the technical specification change for operability of the charging pumps. Although the corrective actions were adequate, CR M3-98-1968 was initiated to identify the NRC commitment as being closed within the commitment tracking system. This is considered an enhancement not a discrepancy. Under the current RAC 6 procedure, this NRC communication would have been more specific in terms of directly referencing the LER Commitment change versus implicitly referenced through Temporary Technical Specification amendments and Plant Event Summaries.

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

Conclusion:

NU has concluded that the issue reported in DR-MP3-0745, has identified a NON-DISCREPANT condition Based on reviewing the documentation associated with LER 92-020-00, although NU believes that the Nuclear Regulatory Commission was made aware of the temporary nature of the commitment. The corrective action of the LER as well as the request for a temporary technical specification change contained in letter B14290 indicate the temporary nature of both the commitment and temporary technical specification change and that there would be expiration of same. The Commitment Tracking system has been significantly improved with the implementation of RAC 06, Regulatory Commitment Management Program. CR M3-98-1968 has been written to track the official closure of commitment record 17389 in the Regulatory Commitment Database.

Significance level criteria do not apply here 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:	Spear, R.	☒	☐	☐	5/19/98
VT Lead:	Bass, Ken	☒	☐	☐	5/20/98
VT Mgr:	Schopter, Don K	☒	☐	☐	5/21/98
IRC Chmn:	Singh, Anand K	☐	☐	☐	
Date:	5/19/98				

SL Comments: S&L considers the corrective action defined in CR M3-98-1968 adequate to resolve the discrepancy. S&L considers this issue to be a Level 4 discrepancy as the NRC commitmnet was not closed prior to Discerpancy report DR-MP3-0745 being issued.

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: NA

DR RESOLUTION ACCEPTED

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-operated containment isolation valves (3RSS*MOV20D) for the Containment 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 inadequate administrative guidance on the definition of containment 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

		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: 5/20/98

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.

Revised Response:

Disposition:
NU has concluded that the issue reported in DR-MP3-0783 has identified a NON-DISCREPANT condition.
Further investigation revealed that human error occurred for LER 89-017 in that the operator did not know that the motor-operated containment isolation valves (3RSS*MOV20D) for the Containment Recirculation Spray header were tech spec 3.6.3 valves. Actions to address human error in 1989 are not necessary today because the sensitivity to Tech Spec 3.6.3 is much improved. Sensitivity has greatly improved through the restart effort(CMP, ICAVP, etc.) and procedure changes (i.e. OP 3260 Conduct Of Operations, DC 4 Procedure Compliance, etc.). Operators now have clear guidance in the Technical Requirements Manual (TRM). This guidance was approved in 1990 and now lists all valves that are to be considered section 3.6.3 valves. The basis for the list of valves is the FSAR Table 6.2-65. NU considers the actions taken to be sufficient and no further actions are required.
Significance Level criteria do not apply here as this is not a discrepant condition.

Conclusion:
NU has concluded that the issue reported in DR-MP3-0783 has

identified a NON-DISCREPANT condition. Further investigation revealed that human error occurred for LER 89-017 in that the operator did not know that the motor-operated containment isolation valves (3RSS*MOV20D) for the Containment Recirculation Spray header were tech spec 3.6.3 valves. Actions to address human error in 1989 are not necessary today because the sensitivity to Tech Spec 3.6.3 is much improved. Sensitivity has greatly improved through the restart effort(CMP, ICAVP, etc.) and procedure changes (i.e. OP 3260 Conduct Of Operations, DC 4 Procedure Compliance, etc.). Operators now have clear guidance in the Technical Requirements Manual (TRM). This guidance was approved in 1990 and now lists all valves that are to be considered section 3.6.3 valves. The basis for the list of valves is the FSAR Table 6.2-65. NU considers the actions taken to be sufficient and no further actions are required.Significance Level criteria do not apply here 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:	Spear, R.	☒	☐	☐	5/20/98
VT Lead:	Bass, Ken	☒	☐	☐	5/20/98
VT Mgr:	Schopfer, Don K.	☒	☐	☐	5/21/98
IRC Chmn:	Singh, Anand K.	☐	☐	☐	
Date:	5/20/98				

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

S&L concurs that this is not a discrepant item based upon the additional information NU provided verifying that the referenced final guidance is included in the Technical Reference Manual. The Regulatory Commitment Management Program, RAC 06, should ensure that future commitments are revised or closed when committed actions are accomplished.

Northeast Utilities
Millstone Unit 3

ICAVP
Discrepancy Report

DR No. DR-MP3-0809

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

DR RESOLUTION ACCEPTED

Potential Operability Issue
○ Yes
◉ No

Date FAXed to NU:

Date Published: 1/22/96

Discrepancy: Unable to confirm through procedure review that an NRC commitment is satisfied.

Description: Safety Evaluation Report (SER) 9-64 committed to:

1. Monitoring the length of time that the diesel generators operate at no load or at low load (< 20% full load) conditions.

2. For each 24hrs of no load or low load operation run the diesel for one hour at > 50% load.

A review of the operating procedures confirm that Item 1 (above) of this committment is addressed in OP 3346A, "Emergency Diesel Generator" and OPS Form 3346A-13, "EDG - Data Sheet."

However, the review did not reveal how the station documents that the second part of the commitment that the diesel be run at > 50% load is satisfied once it has been determined that the diesel has operated at the no load or low load condition. There is no place on OPS Form 3346A-13 to document that Item 2 (above) has been satisfied to provide confirmation that the entire commitment has been met.

In addition, the instructions in OP 3346A for filling out OPS Form 3346A-13 are very imprecise by using the terms "prestart portion", "initial portion", "appropriate section", and "complete." Since the steps in data sheet OPS Form 3346A-13 are not numbered or in sections titled "prestart ", "initial ", "appropriate", it is unclear how the operators know what they must do.

		Valid	Invalid	Review Needed	Date
Initiator:	Tamlyn, Tom	☒	☐	☐	12/29/97
VT Lead:	Bass, Ken	☒	☐	☐	12/30/97
VT Mgr:	Schopfer, Dor V.	☒	☐	☐	1/12/98
IRC Chmn:	Singh, Anand K	☒	☐	☐	1/17/98

Date:

INVALID:

Date: 5/19/98

RESOLUTION: Disposition:
NU has concluded that Discrepancy Report DR-MP3-0809 does not represent a discrepant condition. Each time the engine is run, the operator is required to sign a line in OPS FORM 3346A-13 to confirm that OP 3346A, Precautions 3.1 and 3.2 have been reviewed. Precaution 3.1 restricts operation below 20%. Precaution 3.2 provides further instruction to prevent wet stacking, directing that the engine be operated at greater than

50% for one hour following each 24 hour operation below 50%. OPS FORM 3346A-13 also requires the operator to record the number of unloaded test starts, which is obtained from the Diesel Operating Log, OPS Form 3346A-14/15. As a check to determine the need to run the engine at increased load, the EDG Data Sheet is reviewed by the Shift Manager and the System Engineer. Review of the Operating Log by the Equipment Operator, the Unit Supervisor, the Shift Manger and the OPS Assistant is recorded on OPS Form 3346A-14/15. Any necessary run time at increased load is calculated by the operators and confirmed by the System Engineer.

Following identification of the need to run the engine at increased load, a new OPS Form 3346A-13 will be used. At the line "Reason for start," the Operator will enter "Run engine to satisfy OP 3346A, Precaution 3.2," or an equivalent statement.

The instructions in OP 3346A direct the operator to OPS Forms 3346A-13, 14 and 15 when data is required to be entered. Headings and instructions contained in the forms clearly show the operator which section or steps to use.
The verb "COMPLETE" used in OP 3346 is appropriate and directs the Operator to make entries in all fields, using NA were appropriate.

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

Conclusion:
NU has concluded that Discrepancy Report DR-MP3-0809 does not represent a discrepant condition. Precautions 3.1 and 3.2 of OP 3346A direct operation of the engines at elevated load following extended light load or no load operation. A sign off in OPS FORM 3346-13 ensures adherence to these precautions. The Operator and the Shift Manager are required to review the EDG Data Sheet and Operating Log to identify the need to run the engine at elevated load and calculate the necessary run time. The System Engineer routinely reviews the run log for confirmation. The Operators clearly understand the interface instructions between OP 3346A and OPS Forms 3346A-13, 14 and 15.Significance level criteria do not apply as this is not a discrepant condition.

Revised response:

Disposition:
NU has concluded that the issues reported in DR-MP3-0809 have identified CONFIRMED SIGNIFICANCE LEVEL 4 conditions which require correction. This is a follow-up to M3-IRF-01895 resulting from a conference held on 4/15/98. NU will enhance the procedure interfaces by revising OP 3346A and OPS Forms 3346A-13, 14 and 15 so that the headings in the Forms are consistent with instructions in the operating procedure. NU will revise the interface between OP 3346A and OPS Form 3346A-13 to direct that engine operation below 50% load be properly recorded. OSCAR Feedback Form Number

2743 was generated to correct interface difficulties between OP 3346A and OPS Forms 3346A-13, 14 and 15. The next revision to procedure OP 3346A will ensure that when the Operator is branched from OP 3346A to an OPS Form, that instructions will clearly show which portions of the form must be completed. OSCAR Feedback Form Number 3485 was generated to preclude the possibility that engine operation below 50% load will not be recorded. The next revision to OP 3346A and associated OPS Forms will include instructions to record any extended time that the engine is operated unloaded or at reduced load.

Conclusion:
NU has concluded that the issues reported in DR-MP3-0809 have identified CONFIRMED SIGNIFICANCE LEVEL 4 conditions which require correction. This is a follow-up to M3-IRF-01895. OSCAR feed back forms have been issued to require a revision to ensure that the headings in the OPS Forms 3346A-13, 14 and 15 are consistent with instructions in operating procedure OP 3346A, and to ensure that any extended engine operation below 50% load will be properly recorded.

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.	☒	☐	☐	5/19/98
VT Lead:	Bass, Ken	☒	☐	☐	5/20/98
VT Mgr:	Schopfer, Don K	☒	☐	☐	5/21/98
IRC Chmn:	Singh, Anand K	☐	☐	☐	
Date:	5/19/98				

SL Comments:

Northeast Utilities
Millstone Unit 3

ICAVP
Discrepancy Report

DR No. DR-MP3-0835

Review Group: System
Review Element: System Design
Discipline: I & C Design
Discrepancy Type: Calculation
System/Process: HVX
NRC Significance level: 4

DR RESOLUTION ACCEPTED

Potential Operability Issue
- ○ Yes
- ◉ No

Date FAXed to NU:

Date Published: 1/10/98

Discrepancy: Incorrect calculation methodology for: NSP-107,108,109,124-HVR, & SP-3HVR-29

Description: The calculations described below incorrectly calculate the instrument setpoints for their respective Fluid Components International (FCI) flow switches. The term "FS" (full scale) used throughout these calculations has been improperly associated with the nominal range of the switches in terms of the process (100 ft/sec); however, because of the nature of these switches, FS should have referred to the actual instrument (millivolt signal) range of each switch as provided by the vendor (FCI) in the form of unique calibration curves and/or tables. After the probable uncertainties are calculated in millivolts, the resulting process uncertainty ranges can be determined from the FCI calibration curves/tables.

1. Calculation NSP-107-HVR documents the setpoints for flow switches 3HVR*FS52A and B which start alternate supply fans, 3HVR*FN14A and B respectively, on loss of flow from the primary supply fans.

2. Calculation NSP-108-HVR documents the setpoints for flow switches 3HVR*FS98A and B which start alternate supply fans, 3HVR*FN13A and B respectively, on loss of flow from the primary supply fans.

3. Calculation NSP-109-HVR documents the setpoint for flow switch 3HVR*FS27B which provides a permissive signal to start exhaust fan 3HVR*FN6A on low flow from exhaust fan 3HVR*FN6B.

4. Calculation NSP-124-HVR documents the setpoints for flow switches 3HVR*FS102A and B, and 3HVR*FS103A and B which start respective A/C units on loss of flow in the interconnecting ductwork.

5. Calculation SP-3HVR-29 documents the setpoints for flow switches 3HVR*FS88A and B which start redundant exhaust fans, 3HVR*FN12A and B inversely, on loss of flow from the running fan.

		Valid	Invalid	Review Needed	Date
Initiator:	Reed,William.	☒	☐	☐	12/19/97
VT Lead:	Neri, Anthony A	☒	☐	☐	12/19/97
VT Mgr:	Schopfer, Don K	☒	☐	☐	12/23/97
IRC Chmn:	Singh, Anand K	☒	☐	☐	12/31/97

Date:

INVALID:

Date: 5/21/98

RESOLUTION: RESPONSE #1

Disposition:

NU has concluded that Discrepancy Report, DR-MP3-0835, does not represent a discrepant condition. The calculations listed in this DR reference the FCI EEQ qualification report and a FCI correspondence as the source of the performance data used in development of the instrument uncertainties. The qualification reports provide performance test results (see attached for an example) as percent of full scale flow (% FS) where full scale flow is 100 feet per second. This establishes the qualified component uncertainties in relation to flow not the instrument millivolt output signal which is why the calculations establish the overall component uncertainty in relation to the flow rate. After adjusting the process flow setpoint to accommodate for the calculated uncertainty the corresponding millivolt value can be taken from the unique calibration data curve for the specific instrument. This is a scaling conversion in order to place the compensated process setpoint in terms of the instrument signal for the purpose of calibration. The calculation methodology used in these calculations are consistent with FCI and industry practices. Significance level criteria does not apply as this is not a discrepant condition.

Conclusion:

NU has concluded that Discrepancy Report, DR-MP3-0835, does not represent a discrepant condition. Since, the calculation methodology used in these calculations are consistent with FCI and industry practices. Significance level criteria does not apply as this is not a discrepant condition.

RESPONSE #2

Disposition:
NU has concluded that this issue reported in DR-MP3-0835 has identified a CONFIRMED SIGNIFICANCE LEVEL 4 condition which requires correction.

NU believes the methodology provided by Fluid Components, Inc. (FCI) letter to Mr. Brian Furguson, dated October 1, 1985, (provided as an attachment to M3-IRF-01414) is the appropriate and correct methodology for determining the probable errors associated with these types of instruments. NU also believes it is inappropriate to differ from the manufacturer approved methodology that is in accordance with Regulatory Guide 1.105 requirements for determining the probable errors without sufficient justification or evidence that the manufacturer methodology is in error. Although, the manufacturer methodology and associated calculations are in accordance with Regulatory Guide 1.105 requirements it should not be construed

as a requirement for NU to apply Regulatory Guide 1.105 requirements to these setpoints.

Millstone Unit 3 design and licensing basis in regard to Regulatory Guide 1.105, Revision 1, applies to protective instruments and alarms in systems important to safety. A system important to safety is defined as those systems that are necessary to ensure (1) the integrity of the reactor coolant pressure boundary, (2) the capability to shut down the reactor and maintain it in a safe condition, or (3) the capability to prevent or mitigate the consequences of accidents that could further result in potential offsite exposures comparable tothe guideline exposures of 10CFR Part 100, "Reactor Site Criteria". The Regulatory Guide Position sections C1 through C6 provides further guidance indicating that the requirements of the Regulatory Guide are to be applied in the development of setpoints with appropriate margins to account for expected uncertainties between the setpoint and the limiting safety settings contained in the Technical Specifications. This provides clarification that the protective instruments and alarms in systems important to safety whose limiting safety settings for which we must maintain margin for uncertainty are listed in Technical Specifications.

The subject flow switches setpoints are not an analytic limit, limiting safety setting, or safety limit or credited in the accident analysis. The function of these switches is to sense the loss of air flow to the associated fan which is indicative of either a fan failure or duct blockage. As such these switches perform a flow no-flow (go no-go) function where the setpoint is an arbitrarily selected value that is low enough to avoid fan cycling due to normal system fluctuations but high enough to sense loss of airflow. Additionally, the setpoints were adjusted to provide an arbitrary but consistent time response between trains by setting the flow switches to the same time delay. For example, the selected setpoint for 3HVR*FS52A and B provides a 30 second response time in sensing a supply fan failure although, the coast down characteristics for each supply fan is different. Similarly, the time delay selected for flow switches 3HVR*FS98A and B was arbitrarily selected to provide a 14 second response time in sensing a exhaust fan failure. The resulting changes to the response time involved with completing the startup function is readily accommodated within the required time limitation of 120 seconds. The system design has considerable time margin since the system design is based on a 60 second response time. Therefore, the additional response-time introduced due to the instrumentation uncertainties is bounded by this considerable system margin.

A review of the these calculations has identified several minor errors which require correction, for example: 1) Calculations were not revised to reflect the span change from a span of 0 to 100 FPS to a typical span of 1 to 80 FPS. 2) The contributing terms in section 3 are defined in terms of FPS when they are actually in terms of %. 3) The Drift, Seismic, and DBA terms are not correlated as recommended by manufacturer from the

setpoint value used in the qualification report to actual setpoint. 4) The calculation needs to be revised to clearly state the design and licensing basis for the setpoint (e.g., the time delay values are arbitrarily selected values, coincident seismic event and LOCA is not considered credible). 5) Remove the "Error in Reading Flow Curve" term since, FCI has switched to using data tables. 6) These calculations are inconsistent with identifying the methodology for dealing with the issuance of new flow curves and data tables.

Although, these calculations contain errors the net result is that existing instrument uncertainty values are larger than the corrected values. For example, flow switch 3HVR*FS52A(B) has an existing system error with an Upper and Lower Limit of + 2.24 and - 4.00 FPS respectively. Correcting these minor errors resulted in 3HVR*FS52A(B) having a system error with an Upper and Lower Limit of + 1.6 and -2.9 FPS respectively (see attached). By correcting these errors the uncertainty values are reduced and are bounded by the existing uncertainty values therefore, the existing uncertainties are conservative.

Item 1: Each FCI flow switch is provided with a unique calibration flow curve or data table that defines the non-linear mV relationship to the logarithmic flow rate. These unique calibration curves and tables are developed by measuring the flow switch mV output signal while varying the input flow signal from its Lower Range-Limit to its Upper Range-Limits in 0.1 FPS increments. This results in the flow switches being calibrated for a typical input span of 1 to 80 FPS while establishing the non-linear output (mV) span relationship that varies substantially from switch to switch. Although, the input is logarithmic it bears a known relationship to a step change in flow, whereas the non-linear output requires at a minimum a second order polynomial to define this relationship. Using the non-linear signal introduces additional complexity and calculation errors in determining the instrument actuation point (setpoint), when applying square-root sum-of-squares method to a second order polynomial as required by ISA-RP67.04. Therefore, it is inappropriate to use the non-linear output span in determining the instrument actuation point and uncertainty values.

NU has concluded that methodology stated within item 1 of this DR to be technically incorrect for the following reasons; 1) The flow curves in calculation NSP-107-HVR Rev 0, have been superseded by data tables in NSP-107-HVR Rev 0, Calculation Change Notice (CCN) 02, dated October 19, 1993. 2) Span is the algebraic difference between upper and lower range values (Span = Full Scale mV - Zero Scale mV = 261 mV - 819 mV = -558 mV) not simply the zero-velocity mV value as stated. 3) This method does not consider or compensate for the switch output characteristics that are non-linear and revise acting with an elevated offset. 4) Environmentally induced instrument errors in the qualification report are provided as a function of flow not mV due to the non-linearity of the output signal. 5) The calibration flow curves and data tables for these flow switches are from the manufacturer where the mV value is dependent upon flow. NU

has concluded that recommended methodology is inappropriate for this application when the above is considered.

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

Item 2: See above discussion and Item 1 disposition.

Item 3: The auxiliary building ventilation inlet plenum for fans 3HVR*FN6A and B receives exhaust from several different ventilation systems with varying flows. The set point for the pressure controller was established by the system requiring the least amount of pressure at the plenum to obtain its design flow rate during normal and DBA conditions. This resulted in flow rates that were in excess of the design flow rates for the balance of the ventilation systems connected to the plenum. These ventilation systems were then flow balanced to obtain their design flow rates with a constant plenum pressure. The function of the pressure controller 3HVR*PIC104A (B) to maintain the inlet plenum at a constant pressure by modulating the inlet vanes 3HVR*MOD140A and B regardless of which ventilation system or ventilation alignment is discharging into the plenum. This ensures the design flow rates for the ventilation system are being maintained within acceptable limits during normal and DBA conditions. Considering this the function of these switches to sense the reduction of air flow through the fan that is indicative of either fan failure or duct blockage and ability to start the redundant fan remains unaffected.

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

Item 4: See above discussion and Item 1 disposition.

Item 5: These setpoints for flow switches 3HVR*FS52A/B were revised per CCN 02 to NSP-107-HVR Rev 0, from 15.9 ft/sec (dec) and 29.9 ft/sec (dec) to 19.7 ft/sec (dec) and 15.0 ft/sec respectively. See above discussion and Item 1 disposition for additional information.

Item 6: See above discussion and Item 1 disposition.

Item 7: See above discussion and Item 1 disposition.Condition Report (CR) M3-98-2257 dated April 29, 1998, has been written to document and provide the necessary corrective actions to resolve these calculation discrepancies. The corrective actions have been approved for post startup implementation. These calculation will be revised as necessary to include the proper setpoint methodology, applicable contributing uncertainty terms, and design basis information and a consistent approach in dealing with revisions to the flow curves and tables within the calculation. The conclusion reached by these calculation remains valid since, the existing uncertainty values bounds the corrected uncertainty values. Additionally, these switches perform a flow no-flow (go no-go) function where the setpoint is an arbitrarily selected value. They are not analytic limits, limiting safety

settings, or safety limit nor are they credited in the accident analysis. NU considers these calculation errors to be minor in nature that do not impact the design or licensing basis of any system. Based upon this NU considers overall subject of this DR to be a Significance Level 4 issue.

Conclusion:
NU has concluded that this issue reported in DR-MP3-0835 has identified a CONFIRMED SIGNIFICANCE LEVEL 4 condition which requires correction. Condition Report M3-98-2257 has been written to identify minor discrepancies in calculations NSP-107-HVR, NSP-108-HVR, NSP-109-HVR, NSP-124-HVR, and SP- 3HVR-29 that were identified during the subsequent investigation into this DR. The corrective action plan for CR M3-98-2257 has been approved for post startup implementation. These calculation will be revised as necessary to include the proper setpoint methodology, applicable contributing uncertainty terms, and design basis information and provide a consistent approach in dealing with revision to the flow curves and tables. The conclusion reached by these calculation remains valid since, the existing uncertainty values bounds the corrected uncertainty values. Additionally, these switches perform a flow no-flow (go no-go) function where the setpoint is an arbitrarily selected value and they are not an analytic limit, limiting safety setting, or safety limit nor are they credited in the accident analysis. Additionally, NU has concluded that Regulatory Guide 1.105 requirements are not applicable to these devices and therefore are not required to have instrument uncertainties included in their setpoints.NU has concluded that recommended methodology in this DR is inappropriate for this application when all contributing attributes are considered. Additionally, the recommendation contradicts the manufacturer approved methodology that is in accordance with Regulatory Guide guidance and industry standard practices for determining the probable errors without providing sufficient justification or evidence that the manufacturer methodology is in error.NU considers these calculation errors to be minor in nature that do not impact the design or licensing basis of any system. Based upon this NU considers overall subject of this DR to be a Significance Level 4 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:	DeMarco, J.	☒	☐	☐	5/21/98
VT Lead:	Neri, Anthony A	☒	☐	☐	5/21/98
VT Mgr:	Schopfer, Don K	☒	☐	☐	5/22/98
IRC Chmn:	Singh, Anand K	☐	☐	☐	

Date: 5/21/98

SL Comments: RESPONSE #1

FCI provides one value (unique for each instrument) that represents full scale (FS) for each of the instruments associated

with the subject calculations; this value is the 'zero-velocity' value expressed in millivolts. The "millivolt vs flow velocity" calibration curves supplied by FCI are unique for each individual instrument and include this unique, zero-velocity millivolt, FS value. Other than the zero-velocity value, the curves provided by FCI do not depict a discernible beginning or end (URL/span) velocity; additionally, the relationship between the instrument's output (millivolts) and the process flow velocity (feet/second) is not linear but logarithmic.

When setting an instrument's actuation point (setpoint) in the field, the actual process flow velocity is unknown and the only measurable parameter is the millivolt output of the flow instrument. For actuation at a desired process flow velocity, the calibration curves provided by FCI are used to predict the millivolt output of an instrument at the desired velocity. Determination of the actuation point must consider all probable errors associated with calibrating the instrument (see ISA-RP67.04-Part II-1994) such that it actuates on or before the process reaches the desired flow velocity.

As an example of a proper calculational method for determining the probable errors associated with these types of instruments, consider the following summary of the itemized comments from a detailed review of calculation NSP-107-HVR Rev 0. (NOTE - The values given below have not been independently verified; actual values may vary slightly.):

1. The method used in step "Rev. 0, pg. 4, item 3.a" contains an error which was carried throughout the calculation. The value of ±0.67[%] FPS should be:

±0.67% FS = ±(0.0067)(874mv) = ±5.863 mV for switch A and
±0.67% FS = ±(0.0067)(973mv) = ±6.527 mV for switch B.

2. Based upon the methodology described above the resulting probable system error is:

+57.1 mV / -41.8 mV for switch A and
+70.0 mV / -52.9 mV for switch B.

3. The Startup test performed to obtain the instrument setpoint values determined one set of values valid only for the test conditions. These measured actuation point values actually represent the nominal values during normal operation. It is expected that these values would be different for DBA conditions.

4. The purpose of this calculation should be to determine the voltage values that will reasonably ensure that the respective switches trip when the values measured by test are reached.

5. The Rev. 0 process setpoint values should be 20 ft/sec (dec) for switch A and 33 ft/sec (dec) for switch B.

6. The Rev. 0 instrument setpoint values, per comments 16 and 18 above, should be 383 mV (inc) for switch A and 377 mV (inc)

for switch B.

7. Review of the FCI letter dated 10-1-85 (provided as an attachment to NU's response) revealed the error analysis to be based upon controlled (laboratory) conditions where the flow velocity is the known quantity varied over a selected span of 0 to 100 feet/second: this is how FCI generates the calibration curves.

RESPONSE #2

Based on a telecon among NU, NRC, and S&L on 5/18/98, this instrumentation is not classified as Tech Spec and is not subject to RG 1.105 error analysis.

S&L has reviewed NU's response and found it accceptable.

Northeast Utilities
Millstone Unit 3

ICAVP
Discrepancy Report

DR No. DR-MP3-0903

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

DR RESOLUTION ACCEPTED

Potential Operability Issue
( ) Yes
(•) No

Date FAXed to NU:

Date Published: 1/10/98

Discrepancy: Instrument Installation not in accordance with design documents and standards

Description: During system walkdowns the following installation discrepancies were observed. These discrepancies have the potential of affecting the accuracy and performance of the associated equipment.

1. Electrical Installation Specification E350 Rev 9, paragraph 3.3.11.1 states "Install a ground wire in parallel with the flexible conduit using approved bushing at each end. The ground wires shall not be twisted or spiraled around the flexible conduit, and shall be long enough to allow three inches of movement of one end of the flexible conduit relative to the other end, in any direction." Contrary to this requirement the following instruments do not have the necessary three inches of slack in the ground wire: 3EGF*LS34B, 3EGF-LS28B, 3EGD-LT29B, and 3EGD-PDIS25B.

2. The following documents state that the use of Teflon Tape for sealing of instrument connections is forbidden and that grafoil tape shall be used as the thread sealant: I&C Technical Bulletin #102, Tubing Installation Specification SP-EE-212, and Piping Installation Specification SP-ME-570.

Contrary to this requirement the following instruments have Teflon Tape applied to their threaded connections: 3EGS*FG36A8, 3EGS*FG36B2, 3EGS*FG36B3, 3EGO-PI27B, 3EGF-PDIS22C, 3EGF-FT31A and 3HVR-FE10B.

Additionally, high pressure flex lines on Diesel Engine Gauge Panels A & B are threaded with Teflon Tape installed at the connections. There are many instances throughout the Diesel Generator where the use of Teflon Tape was discovered. Teflon Tape was also discovered inside the Containment on the Containment Hatch Controls pressure indicator.

3. Specification SP-EE-212 Revision 1, Section 1-8 "Painting" states "All unpainted items, stands, brackets, and supports for instruments and/or their tubing systems, except galvanized, stainless steel, monel, Carpenter 20, and copper surfaces, shall be given surface preparation and be painted in accordance with the specification for APPLICATION OF PROTECTIVE COATING MATERIALS". Contrary to this requirement all the tubing associated with the instruments on the Diesel Generator have been painted.

The following material condition was noted during the walkdown

This is not a configuration management issue.

1. The handle on the isolation valve for instrument 3EGO-PI27A is broken.

		Valid	Invalid	Review Needed	Date
Initiator:	Sarver, T. L.	☒	☐	☐	12/22/97
VT Lead:	Neri, Anthony A	☒	☐	☐	12/23/97
VT Mgr:	Schopfer, Don K	☒	☐	☐	12/23/97
IRC Chmn:	Singh, Anand K	☒	☐	☐	12/31/97

Date:

INVALID:

Date: 5/21/98

RESOLUTION: RESPONSE #1

Disposition:
NU has concluded that this issue reported in DR-MP3-0903 has identified a CONFIRMED SIGNIFICANCE LEVEL 4 condition which requires correction. CR M3-98-0680 has been written to track resolution of this item per RP4. NU has replaced (Ref AWOs M3-98-03913, 03914, 03916, and 03918.) the teflon tape on 3PHS*PI001, 3PHS*PI002, 3PHS*PI003, and 3PHS*PI004 (Containment Hatch Controls pressure indicator) with approved material in conformance with specification SP-EE-212. The other citations for the use of teflon tape on threaded connections all relate to components in the EDG and related systems. The prohibition on the use of teflon materials arises from a radiation environment degradation mechanism that would not limit usage in the EDG enclosure, however the governing specifications do not currently permit exceptions. NU will perform (See AR 98002860-02) an engineering review of the technical requirements in Specification SP-EE-212 and SP-ME-570 for use of teflon tape on an exception basis, document the results of the review, and change the specifications as appropriate. This evaluation is not startup related. Inspection of the broken valve handle shows that a portion of the plastic valve handle is broken off. The handle is functional as is, thus this item is judged to be cosmetic only.

Conclusion:
NU has concluded that this issue reported in DR-MP3-0903 has identified a CONFIRMED SIGNIFICANCE LEVEL 4 condition which requires correction. CR M3-98-0680 has been written to track resolution of this item per RP4. NU has replaced (Ref AWOs M3-98-03913, 03914, 03916, and 03918.) the teflon tape on 3PHS*PI001, 3PHS*PI002, 3PHS*PI003, and 3PHS*PI004 (Containment Hatch Controls pressure indicator) with approved material in conformance with specification SP-EE-212.
The other citations for the use of teflon tape on threaded connections all relate to components in the EDG and related systems. The prohibition on the use of teflon materials arises from a radiation environment degradation mechanism that would not limit usage in the EDG enclosure, however the governing

specifications do not currently permit exceptions. NU will perform(See AR 98002860-02) an engineering review of the technical requirements in Specification SP-EE-212 and SP-ME-570 for use of teflon tape on an exception basis, document the results of the review, and change the specifications as appropriate. This evaluation is not startup related.
Inspection of the broken valve handle shows that a portion of the plastic valve handle is broken off. The handle is functional as is, thus this item is judged to be cosmetic only.

RESPONSE #2

Disposition:
NU has concluded that this issue reported in DR-MP3 0903 has identified a CONFIRMED SIGNIFICANCE LEVEL 4 condition which requires correction. This response supplements M3-IRF-01433. NU has concluded that the two new issues identified by the DRMP3-0903 has identified a NON-DISCREPANT condition.

1. This item discusses the Electrical Installation Spec E350 requirement to have 3" allowable movement in the ground bond for flex conduit. A walkdown of 3EGD-PDIS25B, 3EGF-LT29B, 3EGS*LS34B and 3EGF-LS34B reveals that the ground bond is securely fastened to the flex conduit with tie wraps. The conduit does have sufficient extra length to allow for 3" of movement, therefore, the ground bond is of sufficient length. Also, there is no device 3EGF*LS34B as called for in the DR, however there are devices 3EGS*LS34B and 3EGF-LS34B. There is no device 3EGD-LT29B as called for in the DR, however there is a 3EGF-LT29B. The ground bonds for the flexible conduit on all of these devices were found to be acceptable. Therefore this is not a discrepant condition and this item is considered closed.

3. The tubing cited as being painted is associated with instruments provided by the Diesel Generator supplier. As vendor supplied tubing it is not required to meet the installation specification, SP-EE-212 Rev. 1. Therefore this item is non-discrepant.

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:	DeMarco, J.	☒	☐	☐	5/21/98
VT Lead:	Neri, Anthony A	☒	☐	☐	5/21/98
VT Mgr:	Schopfer, Don K	☒	☐	☐	5/22/98
IRC Chmn:	Singh, Anand K	☐	☐	☐	

Date: 5/21/98

SL Comments: RESPONSE #1

This DR does not address item 1 regarding required slack in ground wire and did not address item 3 regarding painting of instrument tubing on the Diesel Generator.

RESPONSE #2

S&L has reviewed the second response and found it acceptable.
The DR remains valid as a Significance Level 4 based on item 2.

Northeast Utilities
Millstone Unit 3

ICAVP
Discrepancy Report

DR No. DR-MP3-1007

Review Group: Programmatic
Review Element: Corrective Action Process
Discipline: I & C Design
Discrepancy Type: Corrective Action Implementation
System/Process: N/A
NRC Significance level: NA

DR RESOLUTION ACCEPTED

Potential Operability Issue
○ Yes
● No

Date FAXed to NU:

Date Published: 2/7/98

Discrepancy: Inadequate Implementation Documentation

Description: Adverse Condition Report ACR 12875 Causal Factors Corrective Action Plan lists the following four corrective actions to be implemented.
1. Perform a review of all annunciator inputs (Performed as part of Operability Determination).
2. Perform MEPL on Diesel skid mounted instruments that input into the annunciator system.
3. Remove Non Cat 1 inputs from annunciators (B/J 3-96-057, for EGA-A[U1] & B/J 3-96-058, for EGA-B[U2]).
4. Issue design change to resolve separation problem.

The following are the problems associated with each Causal Factors Corrective Action.
1. The Operability Determination may have been part of the ACR; however, no section of the ACR is identified as such in order to verify its completion.
2. MEPL MP3-CD-843 was not included as part of the closure package to verify reclassification of select non-Cat. 1 inputs to the EDG annunciator
3. NCR 3-96-154 was not included as part of the closure package.
4. DCN (MMOD M3-96-571) unexplainably evolved into DCR M3-96067 and was not included as part of the closure package which permanently incorporates B/J 3-96-057 and B/J 3-96-058.

		Valid	Invalid	Review Needed	Date
Initiator:	Dombrowski, Jim	☒	☐	☐	1/27/98
VT Lead:	Ryan, Thomas J	☒	☐	☐	1/27/98
VT Mgr:	Schopfer, Don K	☒	☐	☐	1/29/98
IRC Chmn:	Singh, Anand K	☒	☐	☐	2/3/98

Date:

INVALID:

Date: 5/20/98

RESOLUTION: ----------
NU's First Response

NU has concluded that Discrepancy Report, DR-MP3-1007, 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 M3-98-0970 has been written to develop and track resolution of this item per

RP-4.

NU's Second Response

Background:
S & L's Considers the NU response stated in M2-IRF-01873 to Discrepancy Report DR-MP3-1007 unacceptable. S & L restates the discrepancy as follows:
This ACR was identified as a "Start-up" document. Unless a specific reason acceptably dispositions this ACR as to why verification of completion will be delayed till after plant start-up, this DR resolution is unacceptable.

Disposition:
NU has concluded that the issues reported in Discrepancy Report DR-MP3-1007 has identified a NON-DISCREPANT condition. The Operability Determination referenced in Item 1 was found located with the ACR in Nuclear Document Services (NDS). The MEPL evaluation identified in Item 2 is a retrievable document and was obtained from the Unit 3 MEPL group. NCR 3-96-154, referenced in Item 3, was obtained from NDS. DCR M3-96067, B/J 3-96-057 and BJ 3-96-058 noted in Item 4 were all obtained from NDS. Also obtained from NDS is a Memo dated 9/27/96 stating that MMOD M3-96571 was canceled to DCR M3-96067. CR M3-98-0970 was originally written to develop and track resolution of this item per RP-4. CR M3-98-0970 has been closed to CR M3-98-0135. CR M3-98-0135 will address the fact that this is not a discrepant condition.

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

Conclusion:
NU has concluded that the issues reported in Discrepancy Report DR-MP3-1007 has identified a NON-DISCREPANT condition. Appropriate documentation was referenced and is retrievable from Nuclear Records.

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

Attachments:
□Memo Nancy Nowlan to Marjorie Rauza, 9/27/96□
□ACR 012875
□NCR 3-96-154
□MEPL MP3-CD-843
□DCR M3-96067□
□Bypass Jumpers 3-96-057 and 3-96-058

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:	Caruso, A.						5/20/98

Initiator:	Gibson, A	☒	☐	☐	5/20/98
VT Lead:	Ryan, Thomas J	☒	☐	☐	5/20/98
VT Mgr:	Schopfer, Don K	☒	☐	☐	5/21/98
IRC Chmn:	Singh, Anand K	☐	☐	☐	

Date: 5/20/98

SL Comments:

S&L's Comments on NU's First Response

This ACR was identified as a "Start-up" document. Unless a specific reason acceptably dispositions this ACR as to why verification of completion will be delayed till after plant start-up, this DR resolution is unacceptable.

S&L's Comments on NU's Second Response

NU's response is acceptable.

1. The approved Operability Determination was transmitted as a part of the ACR 12875 (reference above attachments).

2. MEPL MP3-CD-843 was transmitted and verifies reclassification of select non-Cat. 1 inputs to the EDG annunciator (reference above attachments).

3. NCR 3-96-154 was also transmitted (reference above attachments).

4. The "Memo Nancy Nowlan to Marjorie Rauza, 9/27/96" provided the documentation cancelling DCN (MMOD M3-96-571), which was reserved for use to provide Emergency Diesel Generator changes, and the opening of the replacement DCR M3-96067. DCR M3-96067 was also transmitted (reference above attachments).
(Note: The change from a DCN (MMOD) to a DCR was in response to the latest changes in the Unit 3 Design Control Manual.)

Since the above closure documentation was available, this DR can be considered Non-Discrepant.

Northeast Utilities
Millstone Unit 3

ICAVP
Discrepancy Report

DR No. DR-MP3-1012

Review Group: System
Review Element: Change Process
Discipline: Mechanical Design
Discrepancy Type: Corrective Action Implementation
System/Process: DGX
NRC Significance level: 4

DR RESOLUTION ACCEPTED

Potential Operability Issue
( ) Yes
(•) No

Date FAXed to NU:

Date Published: 2/12/98

Discrepancy: Discrepancy in UIR 1298 Closure Package

Description: While reviewing the UIR 1298 Implementation package the following discrepancy was noted:

The approved Closure Request Report for UIR 1298, dated 8/01/97, states in Conclusion that "The design document has been identified that shows the crankcase vacuum pump capacity and discharge head. FSAR has been annotated (see enclosed annotated page) with the applicable design document referenced." The UIR 1298 Implementation Package contained a copy of FSAR Table 9.5-9, dated December 1994, which is assumed to be the reason for the Unresolved Item Report. Also enclosed with the Implementation Package is a copy of FSAR Table 9.5-9, page 1 of 3, dated March 1997 which we believe is intended to provide the resolution to the condition describe in the UIR. This copy has no annotations for the crankcase vacuum pump capacity and discharge head. No other FSAR pages were included with the Implementation Package. Thus, it could not be independently verified that a reference design document for the crankcase vacuum pump capacity and discharge head was identified and the FSAR was annotated with an applicable design document referenced.

		Valid	Invalid	Review Needed	Date
Initiator:	Obersnel,Bojan	☒	☐	☐	2/6/98
VT Lead:	Neri, Anthony A	☒	☐	☐	2/3/98
VT Mgr:	Schopfer, Don K	☒	☐	☐	2/6/98
IRC Chmn:	Singh, Anand K	☒	☐	☐	2/7/98

Date:

INVALID:

Date: 5/21/98

RESOLUTION: First disposition:
NU has concluded that the issue reported in Discrepancy Report, DR-MP3-1012, does not represent a discrepant condition. A review of the current annotated FSAR Table 9.5-9 shows that the reference for the crankcase vacuum pump capacity and discharge head is the Colt Operating Instruction Manual (OIM) 241-001A, Dwg. No. 11 910 288. A review of the current manual does indicate the crankcase vacuum pump capacity and discharge head specifications on drawing 11 910 288. The DICP for UIR 1298 is correct as written. The copy of the March 1997 FSAR shows the current version of the FSAR as indicated and confirms the values are unchanged as a result of the annotation effort. The annotated FSAR was done on a working copy of the FSAR but was not intended to be reflected in the official version.

Significance levels do not apply here as this not a discrepant condition.

Conclusion:
NU has concluded that the issue reported in Discrepancy Report, DR-MP3-1012, does not represent a discrepant condition. A review of the current annotated FSAR Table 9.5-9 shows that the reference for the crankcase vacuum pump capacity and discharge head is the Colt Operating Instruction Manual (OIM) 241-001A, Dwg. No. 11 910 288. A review of the current manual does indicate the crankcase vacuum pump capacity and discharge head specifications on drawing 11 910 288. The DICP for UIR 1298 is correct as written. The copy of the March 1997 FSAR shows the current version of the FSAR as indicated and confirms the values are unchanged as a result of the annotation effort. The annotated FSAR was done on a working copy of the FSAR but was not intended to be reflected in the official version.

Significance levels do not apply here as this not a discrepant condition.

Second disposition:
NU has concluded that the issue reported in Discrepancy Report, DR-MP3-1082, has identified a NON-DISCREPANT condition. The crankcase vacuum pump takes its suction across the oil separator referred to in the Discrepancy Report Comments. It is the crankcase vacuum pump that is responsible for developing the 1.2" H2O @ 630 scfm that is shown on the 11 910 288 drawing. This is a vendor supplied "vapor extractor/blower". The information provided is the best available. This is a blower being used for vacuum purposes. The actual vacuum developed will be a function of the restriction and inleakage encountered. The maximum pressure drop across the oil separator is a reasonable limitation on the capacity of this blower(vacuum pump). The crankcase vacuum pump is not independently tested for capacity. The EDG as a unit is tested to ensure it performs its intended safety function. The butterfly valve between the engine and the oil separator is set for 1" H2O@ 630 scfm. The rating of this particular piece of vendor supplied equipment is not critical, only that it supports the EDG packaged unit in performing its safety function. The ratings provided bound the operation of the crankcase vacuum pump.

The current drawing 11 907 497 in the EDG vendor manual does not have "delete" written on it and has been reviewed to be current per the Vendor Technical Information Program.

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

Conclusion:
NU has concluded that the issue reported in Discrepancy Report, DR-MP3-1082, has identified a NON-DISCREPANT condition. The butterfly valve between the engine and the oil separator is set for 1" H2O@ 630 scfm. The rating of the crankcase vacuum

pump is not critical, only that it supports the EDG packaged unit in performing its safety function.

It is the crankcase vacuum pump that is responsible for developing the 1.2" H2O @ 630 scfm that is shown on the 11 910 288 drawing. The ratings provided bound the operation of the crankcase vacuum pump.
The crankcase vacuum pump is not indepndently tested for capacity. The EDG as a unit is tested to ensure it performs its intended safety function. The information provided is the best available.

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

Additional (third) NU disposition:
NU has concluded that the issue reported in DR-MP3-1012 has identified a CONFIRMED SIGNIFICANCE LEVEL 4 condition which requires correction. CR M3-98-2488 has been written to correct this issue post startup. The approved corrective action plan for CR M3-98-2488 will revise FSAR Table 9.5-9 to clarify the vendor information for diesel generator crankcase vacuum pump "Pump Capacity" and "Discharge Head".

Conclusion:
NU has concluded that the issue reported in DR-MP3-1012 has identified a CONFIRMED SIGNIFICANCE LEVEL 4 condition which requires correction. CR M3-98-2488 has been written to correct this issue post startup. The approved corrective action plan for CR M3-98-2488 will revise FSAR Table 9.5-9 to clarify the vendor information for diesel generator crankcase vacuum pump "Pump Capacity" and "Discharge Head".

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:	Obersnel,Bojan	☒	☐	☐	5/21/98
VT Lead:	Neri, Anthony A	☒	☐	☐	5/21/98
VT Mgr:	Schopfer, Don K	☒	☐	☐	5/21/98
IRC Chmn:	Singh, Anand K	☐	☐	☐	
Date:	5/21/98				

SL Comments: S&L comment on the first NU disposition:
NU disposition is not acceptable.
Please note that the referenced OIM drawing no. 11 910 288 is for Oil Separator (shown on the P&ID EM-116E as 3EGD-SP1A/B), and not for the Crankcase Vacuum Pump (3EGD-P1A/B). The specifications shown on this drawing are for the Oil Separator. Per OIM the drawing for the crankcase vacuum pump is the drawing no. 11 907 497. This drawing does not show crankcase vacuum pump capacity or discharge head. Also, the drawing may not be current, since there is a handwritten note "Delete!" written on it.

S&L comment on the second and additional NU disposition:

S&L agrees with the NU corrective action, which will revise FSAR Table 9.5-9 to clarify parameters provided for the crankcase vacuum pump. S&L also agrees that the discrepancy in the two parameters does not have an impact on plant safety, operation or reliability; the discrepancy is an editorial one, and the corrective action can thus be deferred until after the startup.

Northeast Utilities
Millstone Unit 3

ICAVP
Discrepancy Report

DR No. DR-MP3-1042

Review Group: System
Review Element: Corrective Action Process
Discipline: Mechanical Design
Discrepancy Type: Corrective Action Implementation
System/Process: SWP
NRC Significance level: NA

DR RESOLUTION ACCEPTED

Potential Operability Issue
( ) Yes
(•) No

Date FAXed to NU:

Date Published: 2/12/98

Discrepancy: Incomplete Closure Documentation for ACR 13429

Description: The Corrective Action Plan for ACR 13429 contained 5 items, designated A through E under A/R Tracking Number 96010210-01. These items were completed, and also resulted in the addition of a 6th item, Item F which in turn raised three new issues that were tracked under A/Rs 96010210-02, 97012710-02, and 9701019[illegible] Closure of 96010210-02 was documented in the closure package for ACR 13429, however no Closure Request Report was included for A/R 96010210-01, and no documentation was included regarding closure of the remaining two A/Rs, nor was there any information included to indicate whether closure of the reamaining two A/Rs is required for startup. Therefore closure of ACR 13429 is considered incomplete.

		Valid	Invalid	Review Needed	Date
Initiator:	Tenwinkel, J. L.	☒	☐	☐	2/3/98
VT Lead:	Neri, Anthony A	☒	☐	☐	2/3/98
VT Mgr:	Schopfer, Don K	☒	☐	☐	2/6/98
IRC Chmn:	Singh, Anand K	☒	☐	☐	2/7/98

Date:

INVALID:

Date: 5/21/98

RESOLUTION: Disposition:

NU has concluded that the issues reported in DR-MP3-1042 have identified NON- DISCREPANT conditions.

After the investigation of ACR 13429 five (5) corrective actions were required (designated A - E). Upon completion of these five items, an additional item was added (item F). Upon completion of corrective action F, three additional items were created. These items were tracked by A/R's 96010210-02, 97012710-05 (S&L DR has -02 which is believed to be a typographical error; it should be -05) and 97010197-03. The DR states that closure of A/R 96010210-02 was acceptable however, the other two assignments did not have complete documentation. Both A/R's (97012710-05 and 97010197-03) have been completed (12/19/97 and 1/22/98 respectively). These AR's were closed based on the completion of DCR M3-97097 which was PORC approved on 12/2/97. In addition, although all the AR's associated with ACR 13429 have been completed, the ACR is still open pending approval of the corrective actions from the MP3 Corrective Actions Department. Significance level criteria does not apply as this is not a discrepant condition.

Conclusion:

NU has concluded that the issues reported in DR-MP3-1042 have identified NON- DISCREPANT conditions. A/R's 97012710-05 97010197-03 have been completed on 12/19/97 and 1/22/98 respectively. These AR's were closed based on the completion of DCR M3-97097 which was PORC approved on 12/2/97. In addition, although all the AR's associated with ACR 13429 have been completed, the ACR is still open pending approval of the corrective actions from the MP3 Corrective Actions Department.

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:	Tenwinkel, J. L.	☒	☐	☐	5/21/98
VT Lead:	Nori, Anthony A	☒	☐	☐	5/21/98
VT Mgr:	Schopfer, Don K	☒	☐	☐	5/22/98
IRC Chmn:	Singh, Anand K	☐	☐	☐	

Date: 5/21/98

SL Comments: After receiving the NU response this DR was discussed by telecon on May 19, 1998. This discussion revealed that A/R 97012710-02 referenced in the "Closure Notes for A/R 96010210-01" should actually have been referenced as 97012710-05. Subsequent to the telecon, NU forwarded the closure documentation, associated with the various A/Rs, that was not included in the original package for ACR 13429. After review of the material submitted by NU, S&L concurs that this is no longer a discrepant condition.

Northeast Utilities
Millstone Unit 3

ICAVP
Discrepancy Report

DR No. DR-MP3-1050

Review Group: System
Review Element: Modification Design
Discipline: Structural Design
Discrepancy Type: Installation Implementation
System/Process: NEW
NRC Significance level: NA

DR RESOLUTION ACCEPTED

Potential Operability Issue
○ Yes
◉ No

Date FAXed to NU:

Date Published: 2/28/98

Discrepancy: Modification DCR M3-97580 references the incorrect specification for structural steel.

Description: Modification DCR M3-97580 implements repairs and corrections to the containment structure sump enclosure.

Page 2 of the modification package states that the modification is consistent with the original installation of the sump enclosure framing and specification 2199.142-993. RFI-845 specifically requested specification 2199.142-993 as referenced in DCR M3-97580. However, the response to the RFI, IRF-1467, stated that the wrong specification was requested and that the correct specification was 2199.292-993.

A review of specification 2199.292-993 confirms it to be the correct specification. However, no evidence is found which demonstrates that the work on the sump screens specified in the subject modification is performed in accordance with specification 2199.292-993.

		Valid	Invalid	Review Needed	Date
Initiator:	Feingold, D. J.	☒	☐	☐	2/19/98
VT Lead:	Neri, Anthony A	☒	☐	☐	2/19/98
VT Mgr:	Schopfer, Don K	☒	☐	☐	2/21/98
IRC Chmn:	Singh, Anand K	☒	☐	☐	2/25/98

Date:

INVALID:

Date: 5/21/98

RESOLUTION: Disposition:

NU has concluded that the issue reported in DR-MP3-1050 has identified a NON-DISCREPANT condition. Page 2 of Modification DCR M3-97580 requires the work to be completed in accordance with Specification SP-CE-247. The reference to specification 2199.292-993 on page 2 was intended only to show consistency with the original installation.

Note: The error in the referenced specification number has been addressed. See the enclosed Memo to MMOD M3-97580 File.

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

Conclusion:

NU has concluded that the issue reported in DR-MP3-1050 has

identified a NON-DISCREPANT condition. The modification was not required to be performed in accordance with specification 2199.292-993. The work was performed to SP-CE-247 as required by the modification package.

Significance Level criteria do not apply here 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.	☒	☐	☐	5/21/98
VT Lead:	Neri, Anthony A	☒	☐	☐	5/21/98
VT Mgr:	Schopfer, Don K	☒	☐	☐	5/22/98
IRC Chmn:	Singh, Anand K	☐	☐	☐	
Date:	5/21/98				

SL Comments: Based on Northeast Utilities' response, Sargent & Lundy considers the issue in DR-MP3-1050 an editorial error. Therefore, Sargent & Lundy accepts Northeast Utilities' resolution.