Sargent & Lundy LLC

Don K. Schopfer
Vice President
312-269-6078

November 14, 1997
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 nine (9) 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.

DR No. DR-MP3-0160
DR No. DR-MP3-0266
DR No. DR-MP3-0285
DR No. DR-MP3-0287
DR No. DR-MP3-0388
DR No. DR-MP3-0440
DR No. DR-MP3-0494
DR No. DR-MP3-0559
DR No. DR-MP3-0626

I have also enclosed the following seven (7) DRs that have been determined invalid. No action is required from Northeast Utilities for these seven DRs. The basis for their invalid determination is included on the document.

A001

DR No. DR-MP3-0303
DR No. DR-MP3-0327
DR No. DR-MP3-0398
DR No. DR-MP3-0567
DR No. DR-MP3-0576
DR No. DR-MP3-0595
DR No. DR-MP3-0625

I have also enclosed the following three (3) DRs for which the NU resolutions have been reviewed and accepted by S&L.

DR No. DR-MP3-0105
DR No. DR-MP3-0151
DR No. DR-MP3-0200

I have also enclosed the one (1) DR for which the NU resolution has been reviewed but not accepted. S&L comments on this resolution has been provided.

DR No. DR-MP3-0269

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

Yours very truly,

D. K. Schopfer
Vice President and ICAVP Manager

DKS:spr
Enclosures
Copies:
E. Imbro (1/1) Deputy Director, ICAVP Oversight
T. Concannon (1/1) Nuclear Energy Advisory Council
J. Fougere (1/1) NU
m:\icavp\corr\97\nr1114-b.doc

Northeast Utilities
Millstone Unit 3

ICAVP
Discrepancy Report

DR No. DR-MP3-0160

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

DR VALID

Potential Operability Issue
○ Yes
◉ No

Date FAXed to NU:

Date Published: 11/17/97

Discrepancy: Inconsistency between FSAR Section 6.2.1.1.2 & drawings w/ respect to spray water drainage paths

Description: FSAR Section 6.2.1.1.2 states that spray water will not drain into the lower reactor cavity and incore instrumentation tunnel because the neutron shield arrangement blocks all paths below the nozzles.

A review of drawings 12179-EM-2E Revision 12, 12179-EM-2F Revision 12, 12179-EM-2G Revision 11, 12179-EM-2A Revision 14, and 12179-EC-50G Revision 10 shows that only part of the upper reactor cavity is covered by shielding. Otherwise, water from quench spray and containment recirculation spray can enter the upper and lower reactor cavities.

Calculation US(B)-257 Revision 1 accounts for accumulation of containment spray water in the reactor cavity.

FSAR Section 6.2.1.1.2 states that spray water that falls into the refueling cavity drains to the containment floor via the reactor cavity drain system and the biological shield wall penetrations for the reactor coolant lines.

Drawing 12179-EM-2E shows that any water that enters the upper reactor cavity can fall into the reactor vessel annulus. Drawing 12179-EM-2F shows that the neutron shield tank and the tank support arrangement block drainage to the incore instrumentation tunnel from the reactor vessel annulus. Instead, water collected in the reactor vessel annulus will drain through the biological shield wall penetrations for the reactor vessel coolant lines as stated above.

In conclusion, the FSAR, calculations, and drawings show how spray water is collected in the refueling cavity and routed to the containment floor. Therefore, FSAR section 6.2.1.1.1is inconsistent with other design documentation in regard to spray water drainage into the lower refueling cavity.

		Valid	Invalid	Review Needed	Date
Initiator:	Feingold, D. J.	☒	☐	☐	11/4/97
VT Lead:	Neri, Anthony A	☒	☐	☐	11/4/97
VT Mgr:	Schopfer, Don K	☒	☐	☐	11/7/97
IRC Chmn:	Singh, Anand K	☒	☐	☐	11/12/97

Date:

INVALID:

Date:

RESOLUTION:

RESOLUTION:

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

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

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

SL Comments:

Review Group: System
Review Element: System Design
Discipline: Mechanical Design
Discrepancy Type: Licensing Document
System/Process: QSS
NRC Significance level: 3

DR VALID

Potential Operability Issue
( ) Yes
(•) No

Date FAXed to NU:

Date Published: 11/17/97

Discrepancy: Minimum RWST Level During ECCS Suction Switchover in FSAR and in US(B)-295

Description: CCN 1 to Calculation US(B)-295, Rev. 5 calculates the RWST drawdown time from the minimum ECCS suction switchover level to uncovery of ECCS suction by using the value of 19'-2" from FSAR Figure 6.3-6 as the minimum ECCS suction switchover level.

FSAR Section 6.3.2.2.3 and FSAR Figure 6.3-6 state that the minimum RWST level during ECCS suction switchover is 19'-2".

The discrepancy is that the minimum RWST level during ECCS suction switchover is 18.90 ft, calculated from the inputs to US(B)-295 as follows:

MINIMUM VALUE FOR RWST LOW-LOW LEVEL TRIP
(It is assumed to trip only one the two RHS pumps due to single failure in control system):

Inside Diameter of RWST = 59'-0"
RWST Volume level = (59'-0"/2)^2(3.14159)(1 ft)(1728 cuin/cuft)/(231 cuin/gal)
= 20,451 gal/ft level

Low-Low Level Setpoint = 25.417 ft
Level Switch/Trip Circuit Accuracy = - 2.000 ft
Minimum Low-Low Level Trip = 23.417 ft

MAXIMUM RWST OUTFLOW AFTER* THE LOW-LOW LEVEL TRIP:

2 CHS pumps = 820 gpm
2 SI pumps = 890 gpm
2 QSS pumps = 6500 gpm
TOTAL = 8210 gpm

* The manual ECCS suction switchover from RWSTsuction to RCS/sump suction is assumed to take 10 minutes

1 RHS pump** = 5100 gpm

** It is assumed that one RHS pump does not automatically trip on low-low level and it is assumed that the operator response time to manually identify and trip it is 2 minutes.

THE MAXIMUM VOLUME OF WATER TAKEN FROM THE RWST AFTER THE LOW-LOW LEVEL TRIP:
(8210 gpm)(10 min) + (5100 gpm)(2 min) = 92,300 gal

THE MAXIMUM RWST DRAWDOWN AFTER THE LOW-LOW LEVEL TRIP:
92,300 gal / 20,451 gal/ft level = 4.513 ft

The inputs to US(B)-295 imply that the minimum RWST level during ECCS suction switchover is:
23.417 ft - 4.513 ft = 18.90 ft

This discrepancy in minimum RWST level during ECCS suction switchover also affects the minimum RWST drawdown time that is calculated in CCN1 to US(B)-295 of 33.4 minutes from the minimum RWST level at the termination of manual suction switchover to the top of the ECCS suction. This drawdown time is also affected by the use of urealistically high QSS flows as discussed in DR-MP3-0440, but the effect is to compute a conservatively short drawdown time.

		Valid	Invalid	Review Needed	Date
Initiator:	Wakeland, J. F.	☒	☐	☐	10/13/97
VT Lead:	Neri, Anthony A	☒	☐	☐	10/14/97
VT Mgr:	Schopfer, Don K	☒	☐	☐	10/20/97
IRC Chmn:	Singh, Anand K	☒	☐	☐	11/13/97

Date:

INVALID:

Date:

RESOLUTION:

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:	Wakeland, J. F.	☐	☐	☒	
VT Lead:	Neri, Anthony A	☐	☐	☒	
VT Mgr:	Schopfer, Don K	☐	☐	☒	
IRC Chmn:	Singh, Anand K	☐	☐	☒	

Date:

SL Comments:

Northeast Utilities
Millstone Unit 3

ICAVP
Discrepancy Report

DR No. DR-MP3-0285

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

DR VALID

Potential Operability Issue
○ Yes
◉ No

Date FAXed to NU:

Date Published: 11/17/97

Discrepancy: Design spec 2214.602-040 is not in agreement with FSAR Section 6.5.2.1 w/ respect to pH.

Description: FSAR Section 6.5.2.1 states that the quench spray system is designed to contain a solution of boric acid with a pH as low as 4.4. However, quench spray pump design specification 2214.602-040 through Addendum 6, page 1-4 states that the pumped solution will have a pH range of 5 to 10.8. This is inconsistent with range specified in the FSAR.

		Valid	Invalid	Review Needed	Date
Initiator:	Feingold, D. J.	☒	☐	☐	11/4/97
VT Lead:	Neri, Anthony A	☒	☐	☐	11/4/97
VT Mgr:	Schopfer, Don K	☒	☐	☐	11/7/97
IRC Chmn:	Singh, Anand K	☒	☐	☐	11/12/97

Date:

INVALID:

Date:

RESOLUTION:

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

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

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

Date:

SL Comments:

Northeast Utilities
Millstone Unit 3

ICAVP
Discrepancy Report

DR No. DR-MP3-0287

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

DR VALID

Potential Operability Issue
○ Yes
◉ No

Date FAXed to NU:

Date Published: 11/17/97

Discrepancy: Calculation 3-ENG-106 data discrepancy.

Description: The purpose of calculation 3-ENG-106, Rev. 1, is to calculate instrument channel uncertainty for the 3SWP*FIS36A and B flow switches, providing start permissives to the control building air conditioning condensers, signaling that there is sufficient service water flow through the condensers.

Page 6, item 7, "Seismic Effect (SE) states that the start/trip switches are Seismic Category I and qualified for safety application per ITT Barton Seismic Analysis Report R3-580A-9. However, the reason for this qualification is to ensure physical integrity and circuit integrity only. Per P&IDs EM-133D & 151D switches 3SWP*FIS36A & B are used to provide permissive signals to the control building air conditioning chiller condensers to indicate that there is sufficient service water flow. Hence, they perform a safety function. In which case SE component should be considered, as recommended by Attachment 4 of NUSCo procedure NEAM 41 titled - Setpoint Calculations. Per section 2.3 of this attachment the effect of vibration (seismic effect) should be included in determination of the actual setpoint.

		Valid	Invalid	Review Needed	Date
Initiator:	Hindia, R.	☒	☐	☐	11/6/97
VT Lead:	Neri, Anthony A	☒	☐	☐	11/6/97
VT Mgr:	Schopfer, Don K	☒	☐	☐	11/7/97
IRC Chmn:	Singh, Anand K	☒	☐	☐	11/13/97

Date:

INVALID:

Date:

RESOLUTION:

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:	(none)	☐	☐	☒	
VT Lead:	Neri, Anthony A	☐	☐	☒	
VT Mgr:	Schopfer, Don K	☐	☐	☒	
IRC Chmn:	Singh, Anand K	☐	☐	☒	

Date:

SL Comments:

Review Group: System
Review Element: System Design
Discipline: Mechanical Design
Discrepancy Type: Licensing Document
System/Process: QSS
NRC Significance level: 3

DR VALID

Potential Operability Issue
( ) Yes
(•) No

Date FAXed to NU:

Date Published: 11/17/97

Discrepancy: QSS & RSS Spray Effective Times in the FSAR are not consistent with calcualtion US(B)-266.

Description: Calculation US(B)-266 Revision 1 identifes QSS & RSS effective spray times for a Main Steam Line Break (MSLB). These effective spray times compare with FSAR Tables 6.2-24 and 6.2-25 as follows:

	QSS Spray Effective Time (sec)	RSS Spray Effective Time (sec)
Min ESF w/o offsite power		
Calc US(B)-266	71.2	724.3
FSAR Tbls 6.2-24/25		
25% Reactor Power	75.2	755.2
75% Reactor Power	76.3	756.3
Max ESF w/o offsite power		
Calc US(B)-266	52.2	698.8
FSAR Tbls 6.2-24/25		
25% Reactor Power	not available	not available
75% Reactor Power	not availabie	not available

Based on the above comparison, the effective spray times listed in the FSAR are non-conservative. The FSAR values are non-conservative because the values listed in the FSAR are longer than those used in the containment analysis for the MSLB. A longer spray effective time could lead to higher containment temperature and pressures during the transient.

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

Date:

INVALID:

Date:

RESOLUTION:

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:	(none)	☐	☐	☒	
VT Lead:	Neri, Anthony A	☐	☐	☒	
VT Mgr:	Schopfer, Don K	☐	☐	☒	
IRC Chmn:	Singh, Anand K	☐	☐	☒	

Date:

SL Comments:

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

DR VALID

Potential Operability Issue
○ Yes
◉ No

Date FAXed to NU:

Date Published: 11/17/97

Discrepancy: P(R)-1096 Contains QSS Flow Data For Unrealistic System Operating Conditions

Description: The purpose of P(R)-1096, Rev. 0 is to determine QSS system flow rates for operation of one or two undegraded pumps as a function of containment pressure and RWST level. The results section (p. 3) of Calculation P(R)-1096 states that one undegraded QSS pump would produce a system flow of 5200 gpm and two undegraded QSS pumps would produce a system flow of 6500 gpm. These results do not represent realistic system operating conditions.

These results were taken from the plots of system resistance on pp. 18 and 24 of Calculation P(R)-1096. These plots do not include post-accident containment pressure (which, as a minimum, is 8.0 psig, the CDA setpoint per Techincal Specification Table 3.3-4) and the plots do not include the elevation head difference between the QSS spray nozzles and the RWST level (which is a minimum of 94.3 ft). These effects are included in the system supply curves provided on pp. 19 and 25 of P(R)-1096 (for undegraded QSS pumps), on pp. 6 and 7 of US(B)-312, Rev. 0 (for 10% degraded QSS pumps).

Using these supply curves in conjunction with limiting system operating conditions, the maximum QSS system flow is approximately 5938 gpm and the minimum QSS system flow is approximately 3798 gpm.

The unrealistic flows provided in the results section of P(R)-1096 (p. 3) do not affect the validity of the supply curves (QSS flow v. containment pressure and RWST level) that are used as input to the LOCTIC containment pressurization/depressurization analyses. There is only one calculation which used the overestimated flows of 5200 gpm for one QSS pump 6500 gpm for two QSS pumps as input: CCN 1 to US(B)-295, Rev. 5. Because the purpose of US(B)-295 is to calculate the minimum RWST drawdown time and drawdown level flows, use of the overestimated QSS flows results in conclusions which are conservative, but valid.The purpose section of the calculation should be revised to clarify the intent of the calculation so that the results are not misinterpreted.

		Valid	Invalid	Review Needed	Date
Initiator:	Wakeland, J. F.	☒	☐	☐	11/2/97
VT Lead:	Neri, Anthony A	☒	☐	☐	11/1/97
VT Mgr:	Schopfer, Don K	☒	☐	☐	11/6/97
IRC Chmn:	Singh, Anand K	☒	☐	☐	11/12/97

Date:

INVALID:

Date:

RESOLUTION:

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:	(none)	☐	☐	☒	
VT Lead:	Neri, Anthony A	☐	☐	☒	
VT Mgr:	Schopfer, Don K	☐	☐	☒	
IRC Chmn:	Singh, Anand K	☐	☐	☒	

Date:

SL Comments:

Northeast Utilities
Millstone Unit 3

ICAVP
Discrepancy Report

DR No. DR-MP3-0494

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

DR VALID

Potential Operability Issue
- ○ Yes
- ◉ No

Date FAXed to NU:

Date Published: 11/17/97

Discrepancy: Design inputs to Calc P(R) 1194 are not consistent with the latest controlled document

Description: Attachment 1 of Calculation No. P(R) 1194, Rev. 2, "ESF Bldg Flood Study: Maximum Flood Height in the ESF Bldg due to a Pipe Break," identifies the potential flooding sources for each cubicle in the ESF Bldg. For each of the flooding sources (pipelines), the highest potential pressure in the line was identified from the Stress Data Package for each system and recorded in Attachment 1. This pressure was used to determine the potential flow rate from a crack in the line. For the SWP system the Stress Data Package is in Calculation No. SDP-SWP-D1370M3, Rev. 10, for the QSS in Calculation No. SDP-QSS-01358M3, Rev. 6 and for the RSS in Calculation No. SDP-RSS-01361M3, Rev. 4. For Cubicles "C," "E," "K," "J," "L," and "P," the value for the pressure in Attachment 1 for some of the SWP, QSS and RSS lines differs from the value in the Stress Data Package.

Cubicle "C": Lines RSS010-13-2 and RSS010-18-2

Cubicle "E": Line SWP003-59-3

Cubicle "J": Lines QSS012-24-2 and QSS008-32-4

Cubicle "K" Lines RSS010-5-2, RSS012-12-2, RSS010-18-2, RSS010-19-2 and RSS010-32-4

Cubicle "L" Lines RSS010-3-2, RSS010-5-2, RSS010-8-2, RSS010-9-2, RSS010-20-2, RSS010-33-4, RSS010-35-4, RSS008-46-2, RSS008-52-2 and RSS004-124-2

Cubicle "P" Line SWP003-59-3

This does not change the conclusions of the calculation because either the pressure is lower reducing the consequences of a flood or the break in the pipe is still bounded by other breaks with a greater flow rate.

		Valid	Invalid	Review Needed	Date
Initiator:	Launi, C. M.	☑	☐	☐	11/3/97
VT Lead:	Neri, Anthony A	☒	☐	☐	11/4/97
VT Mgr:	Schopfer, Don K	☒	☐	☐	11/10/97
IRC Chmn:	Singh, Anand K	☒	☐	☐	11/12/97

Date:

INVALID:

Date:

RESOLUTION:

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:	(none)	☐	☐	☒	
VT Lead:	Neri, Anthony A	☐	☐	☒	
VT Mgr:	Schopfer, Don K	☐	☐	☒	
IRC Chmn:	Singh, Anand K	☐	☐	☒	

Date:

SL Comments:

Northeast Utilities
Millstone Unit 3

ICAVP
Discrepancy Report

DR No. DR-MP3-0559

Review Group: Configuration
Review Element: System Installation
Discipline: Electrical Design
Discrepancy Type: Installation Implementation
System/Process: RSS
NRC Significance level: 3

DR VALID

Potential Operability Issue
○ Yes
◉ No

Date FAXed to NU:

Date Published: 11/17/97

Discrepancy: Tray covers not in accordance with design documents

Description: 1. The Cable and Raceway Program (TSO2) indicates that tray 3TX768N has covers top and bottom. The Cable Tray Cover Location and Identification drawing, EE-34TB, Rev. 1, indicates no covers are required and no covers were observed installed on this tray.

2. The Cable and Raceway Program indicates that tray 3TK755O is 14 feet long. Based on field observation, this tray section is over 26 feet long. Since cable lengths used in calculations may be computed from raceway lengths, it is important to have reasonably correct data.

3. Tray 3TC764O has a bottom cover on the horizontal 90 degree turn in the run installed in the field. Tray Cover Identification and location drawing EE-34TB Rev. 1 and the Cable and Raceway Program (TSO2) do not indicate that this cover is installed.

The following material condition was noted.

Cable Tray 3TK753N is corroded presumably from a dripping of fluid from a floor penetration directly above the tray – based on signs of previous dampness. This tray is not covered, therefore, the cables within the tray are exposed to this fluid flow.

		Valid	Invalid	Review Needed	Date
Initiator:	Sarver, T. L.	☒	☐	☐	11/7/97
VT Lead:	Neri, Anthony A	☒	☐	☐	11/7/97
VT Mgr:	Schopfer, Don K	☒	☐	☐	11/10/97
IRC Chmn:	Singh, Anand K	☒	☐	☐	11/13/97

Date:

INVALID:

Date:

RESOLUTION:

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:	(none)	☐	☐	☒	
VT Lead:	Neri, Anthony A	☐	☐	☒	
VT Mgr:	Schopfer, Don K	☐	☐	☒	
IRC Chmn:	Singh, Anand K	☐	☐	☒	

Date:

Date:

SL Comments:

Northeast Utilities
Millstone Unit 3

ICAVP
Discrepancy Report

DR No. DR-MP3-0626

Review Group: Programmatic
Review Element: Corrective Action Process
Discipline: Mechanical Design
Discrepancy Type: Licensing Document
System/Process: N/A
NRC Significance level: 3

DR VALID

Potential Operability Issue
( ) Yes
(•) No

Date FAXed to NU:

Date Published: 11/17/97

Discrepancy: Consistency Between Final Safety Analysis Change Request (FSARCR) 97-MP3-289 and Millstone 3 SER

Description: FSARCR 97-MP3-289 changes the time that the Reactor Coolant Pumps (RCPs) can operate without cooling water from 20 minutes to 10 minutes. The safety evaluation screening did not identify that the Millstone 3 SER (page 9-12) contains a response by the Licensee that the "RCPs can function satisfactorily for 20 minutes without component cooling water flow." Consequently, the change is inconsistent with the Millstone 3 SER.

		Valid	Invalid	Review Needed	Date
Initiator:	Navarro, Mark	☒	☐	☐	11/12/97
VT Lead:	Ryan, Thomas J	☒	☐	☐	11/12/97
VT Mgr:	Schopfer, Don K	☒	☐	☐	11/12/97
IRC Chmn:	Singh, Anand K	☒	☐	☐	11/12/97

Date:

INVALID:

Date:

RESOLUTION:

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:	(none)	☐	☐	☒	
VT Lead:	Ryan, Thomas J	☐	☐	☒	
VT Mgr:	Schopfer, Don K	☐	☐	☒	
IRC Chmn:	Singh, Anand K	☐	☐	☒	

Date:

SL Comments:

Northeast Utilities
Millstone Unit 3

ICAVP
Discrepancy Report

DR No. DR-MP3-0303

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

DR INVALID

Potential Operability Issue
○ Yes
◉ No

Date FAXed to NU:

Date Published: 11/17/97

Discrepancy: FSAR Sec 6.2.2.3 on NPSHr for RSS pp is inconsistent w/ spec 2214.802-04 & drwg 2214.802-044-021

Description: FSAR Section 6.2.2.3 identifies the required net positive suction head for the containment recirculation pump as being 7.0 feet at 3,880 gpm. Pump design specification 2214.802-044 through Revision 1, page 4-4, and drawing 2214.802-044-021 Revision B specifies the required net positive suction head to be 14 feet at 3950 gpm. From drawing 2214.802-044-021 the required net positive suction head is estimated to be approximately 13 feet at 3,880 gpm.

Calculation US(B)-265 shows the required net positive suction head to be 7.0 feet at 3,880 gpm. This value is taken from Bingham-Willamette drawing 37955 received by Stone & Webster on March 16, 1981. Bingham-Willamette drawing 37955 shows a second net positive suction head required curve identified as the "1% Head Loss Curve". This drawing forms the basis of the containment spray pumps net positive suction head calculations. However, this drawing is not identifed in the plant data base, GRITS, as a design drawing related to the containment spray pumps 3RSS*P1A,B,C,D.

AAN COMMENT
LETS HOLD THIS ONE TILL WE FIND OUT WHAT NU IS DOING IN RESPONSE TO GL-97-04. I HAVE COPY OF GL

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

Date: 11/12/97

INVALID: Insufficient NPSH available to the containment recirculation spray pumps had been addressed by Northeast Utilities in LER 97-028. Modifications to correct this problem are planned under DCR M3-97045, Orifice / Nozzle Reduction / Valve Interlocks, Pump Vent Line. This modification is included in the scope of the ICAVP and will be reviewed when complete.

Date:

RESOLUTION:

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:	(none)				

~~Initiator (name)~~				
VT Lead:	Neri, Anthony A	☐	☐	☒
VT Mgr:	Schopfer, Don K	☐	☐	☒
IRC Chmn:	Singh, Anand K	☐	☐	☒
Data:		☐	☐	☒

SL Comments:

Northeast Utilities
Millstone Unit 3

ICAVP
Discrepancy Report

DR No. DR-MP3-0327

Review Group: System
Review Element: System Design
Discipline: I & C Design
Discrepancy Type: Calculation
System/Process: QSS
NRC Significance level: 3

DR INVALID

Potential Operability Issue
○ Yes
◉ No

Date FAXed to NU:

Date Published: 11/17/97

Discrepancy: Calculation SP-3QSS-5 is not done in accordance with R.G 1.105 requirements

Description: Calculation SP-3QSS-5, Rev. 1, addresses low temperature alarm setpoint for the RWST. (switch 3QSS-TS37).

Per Tech. Spec. sections 3.5.4.c & d minimum and maximum solution temperatures for RWST shall be 40°F and 50°F, respectively.

Per page 3 of this calculation the setpoint for switch 3QSS-TS37 is set at 41°F. The calculation in its present form does not account for or justify any uncertainties or establish margin in the setpoint determination process.

Per FSAR table 1-8, the commitment is to do setpoint calculations in accordance with the requirements of Reg. Guide 1.105, Rev. 1, dated November 1976. This calculation was initiated in January, 1983 and revised to revision1 in November, 1984. The calculation is not in agreement with paragraph C - Regulatory Position, of the Reg. Guide, item 1, which states that "The setpoint shall be established with sufficient margin between the technical specification limits for the process variable and nominal trip setpoints 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".

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

Date: 11/12/97

INVALID: NUSCo procedure NEAM 41 Attachment 4 (titled Setpoint Calculations) section 3.0 references Reg. Guide 1.105 (November, 1976). This Reg. Guide (section A) describes a method acceptable to the NRC staff for complying with the Commission's regulations with regards to ensuring that the instrument setpoints in systems important to safety initially are within and remain within the specified limits.

Section 1.0 of NUSCo procedure establishes method for the preparation of setpoint calculations to support operation of QA Category I systems and control devices. It also establishes a method
for bases for setpoints for non-QA Caregory I instrumentation

and control devices.

Per PMMS database & P&ID EM-115A-18 temperature switch 3QSS-TS23 is not a QA category I instrument and therefore the methodology required per Reg. Guide 1.105 does not apply.

Tech. Spec. 3.5.4.c & d requirements are satisfied by 3QSS-TI23 located in the control room panel 3CES-MCB-MB2. The annuciation is a back up to this indication.

Date:

RESOLUTION:

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:	(none)	☐	☐	☒	
VT Lead:	Neri, Anthony A	☐	☐	☒	
VT Mgr:	Schopfer, Don K	☐	☐	☒	
IRC Chmn:	Singh, Anand K	☐	☐	☒	

Date:

SL Comments:

Northeast Utilities
Millstone Unit 3

ICAVP
Discrepancy Report

DR No. DR-MP3-0398

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

DR INVALID

Potential Operability Issue
- ○ Yes
- ◉ No

Date FAXed to NU:

Date Published: 11/17/97

Discrepancy: Calculation P(T)0974 rev. 0 discrepancy.

Description: Calculation P(T)0974 is titled "Determine Maximum Sustained Pressure of Service Water System". The purpose and conclusions declare that the design pressure of several lines in the SWS can be lowered to 97 psig.

The application of Bernoulli's theorem was not correctly applied to determine the shut-off head of the service water pumps in this calculation. The static elevation difference between the pump discharge and pump impeller was added to the shutoff head which inturn overestimated the design pressure.

		Valid	Invalid	Review Needed	Date
Initiator:	Dionne, B. J.	☐	☒	☐	11/13/97
VT Lead:	Neri, Anthony A	☐	☒	☐	11/7/97
VT Mgr:	Schopfer, Don K	☐	☐	☐	
IRC Chmn:	Singh, Anand K	☐	☐	☐	

Date: 11/7/97

INVALID: This condition is not considered a DR since the calculation results in a conservative estimate for system pressure.

Date:

RESOLUTION:

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:	(none)	☐	☐	☒	
VT Lead:	Neri, Anthony A	☐	☐	☒	
VT Mgr:	Schopfer, Don K	☐	☐	☒	
IRC Chmn:	Singh, Anand K	☐	☐	☒	

Date:

SL Comments:

Northeast Utilities
Millstone Unit 3

ICAVP
Discrepancy Report

DR No. DR-MP3-0567

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

DR INVALID

Potential Operability Issue
○ Yes
◉ No

Date FAXed to NU:

Date Published: 11/17/97

Discrepancy: Calculation US(B)-265

Description: Calculation US(B)-265 (Rev. 0; CCN 1) determines the available NPSH for the RSS Pumps. The NPSH for various flow rates was transferred from Calculation ES-230 (Rev. 1).

1. The calculation for the screen loss is numerically incorrect. The screen loss according to Calculation ES-230 is 0.149 ft at 3300 gpm. The loss is proportional to the square of the flow. The calculation takes this input from Calculation ES-230 and inserts 0.0206 ft for a flow rate of 3880 gpm. According to the equation shown on Page 15, the loss should be 0.206 ft; ten times the value in the calculation. This underestimates the head loss and overestimates the available NPSH. However, due to the small nature of the loss, this does not affect the conclusions of the calculation.

2. The screen loss, 0.149 ft, is from Calculation ES-230. Calculation ES-230 references S&W Generic Calculation PE(P)-90 for the screen loss. Calculation PE(P)-90 is not available in the NU System according to IRF-0544. Therefore, there is no basis for the screen loss used in these calculations.

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

Date: 11/12/97

INVALID: NU has previously identified RSS pump NPSH issues in LER 97-028. DCR M3-97-045 is being generated to address these issues. A review of DCR M3-97-045 will be performed as part of the ICAVP when completed.

Date:

RESOLUTION:

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:	(none)	☐	☐	☒	
VT Lead:	Neri, Anthony A	☐	☐	☒	
VT Mgr:	Schopfer, Don K	☐	☐	☒	
IRC Chmn:	Singh, Anand K	☐	☐	☒	

Date:

SL Comments:

SE Comments:

Northeast Utilities
Millstone Unit 3

ICAVP
Discrepancy Report

DR No. DR-MP3-0576

Review Group: Operations & Maintenance and Testing
Review Element: Change Process
Discipline: I & C Design
Discrepancy Type: Licensing Document
System/Process: RSS
NRC Significance level: 3

DR INVALID

Potential Operability Issue
( ) Yes
(•) No

Date FAXed to NU:

Date Published: 11/17/97

Discrepancy: Current RSS Design Does Not Meet Technical Specifications Requirements

Description:

Tech. Specs. Surveillance Requirement 4.6.2.2.c. states: "Each Recirculation Spray System (RSS) shall be demonstrated operable at least once each refueling interval by verifying that on a CDA test signal, each recirculation spray pump starts automatically after a 660 +/- 20 second delay."

Current system design does not match the Tech. Specs requirement. Engineering & Design Change Request (E&DCR) TC-07844 changed the time delays to sequence pumps 3RSS*P1A & P1B ON at 650 seconds, and pumps 3RSS*P1C & P1D ON at 660 seconds after receipt of a CDA signal. The reason for the staggered start times was to prevent 2 pumps from simultaneously loading onto a single emergency diesel generator. The Tech. Specs. were not changed to reflect these staggered start times. This discrepancy was noted during the disposition of Requirement # REQ-MP3-RSS-0439, and the surveillance procedure (SP 3606.1, 2, 3, & 4) acceptance critera was questionable because of the conflict between Tech. Specs. and various other documents, including the FSAR.

The time delay (660 seconds) is a timer setpoint and the allowable tolerance is +/- 20 seconds. When the first pumps setpoint was changed to 650 seconds with a +/- 20 second tolerance, the lowest allowable delay time became 630 seconds, which is below the containment pressure and temperature analysis of 635 seconds and the Tech. Specs. lower tolerance level of 640 seconds. All of these problems were previously identified by Northeast Utilities (NU) in Adverse Condition Report # ACR M3-96-0497. The SRG Group also wrote Discrepancy Report # DR-MP3-0058 to address this issue. That DR did not address the discrepancy between design and the Tech. Spec. The ACR acknowledges that the Tech. Spec. does not differentiate between the first and second RSS pump start times, and it also states that the Tech. Spec. should have differentiated between them. There is, however, no proposed corrective action to change the Tech. Specs., and the statement is made that the containment analysis can accommodate the Technical Specification as written.

The procedures addressed in the ACR are SP 3448E51, "Diesel Sequencer Train A Actuation Timer Test" & I&C Form 3448E51-1, and SP 3448E52, "Diesel Sequencer Train B Actuation Timer Test" & I&C Form 3448E52-1. The procedure forms contain acceptance criteria errors and require correction. The procedures that address the Tech Specs. 4.6.2.2.c. requirements are SP

3606.1, 2, 3, & 4 (18 Month Sequencer Response Time Test), and related OPS Forms 3606.1-3, 2-3, 3-3, & 4-3, and they were not identified in the ACR. These procedures still use the Tech. Specs. acceptance criteria of 640 to 680 seconds, and do not reflect the new staggered start times of 650 and 660 seconds.

Based on the above, the new staggered start times of 650 and 660 seconds, with appropriate tolerances, do not meet the Tech. Specs. requirement, and the procedures acceptance criteria does not reflect the new staggered pump start times per the modification, as incorporated by E&DCR TC-07844. Furthermore, it does not appear that a Safety Analysis, 10CFR50.59 Review, or re-evaluation of the Safety Analysis was performed as required for a Tech. Specs. setpoint change.

		Valid	Invalid	Review Needed	Date
Initiator:	Petrosky,Al.	☐	☒	☐	11/9/97
VT Lead:	Bass, Ken	☐	☒	☐	11/12/97
VT Mgr:	Schopfer, Don K	☐	☐	☐	
IRC Chmn:	Singh, Anand K	☐	☐	☐	

Date: 11/9/97

INVALID: The Reportability Evaluation contained in ACR M3-96-0497, effective 6/1/96, states: " Technical Specification 4.6.2.2.c should have differentiated between the first and second RSS pumps (i.e., 650 and 660 seconds). However, the containment analysis can accomodate the technical specification as written." The procedure acceptance criteria meeets the tech. specs. requirement, and the "as-found" data is within the tech spec. limits.

No discrepant condition exists, and this Discrepancy Report is invalidated.

Date:

RESOLUTION:

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:	(none)	☐	☐	☒	
VT Lead:	Bass, Ken	☐	☐	☒	
VT Mgr:	Schopfer, Don K	☐	☐	☒	
IRC Chmn:	Singh, Anand K	☐	☐	☒	

Date:

SL Comments:

Northeast Utilities
Millstone Unit 3

ICAVP
Discrepancy Report

DR No. DR-MP3-0595

Review Grou stem
Review Eleme. .. System Design
Discipline: Mechanical Design
Discrepancy Type: Component Data
System/Process: QSS
NRC Significance level: 4

DR INVALID

Potential Operability Issue
○ Yes
◉ No

Date FAXed to NU:

Date Published: 11/17/97

Discrepancy: QSS and RSS spray nozzles are not listed in PDDS.

Descri, on: The design details for the SPRACo nozzles used in the quench and containment recirculation spray systems are provided in specification 2280.000-968 Revision 10, pages 8-14 through 8-18. However, the plant computer data base, PDDS, does not identify the spray nozzles as system components. Therefore, the design specification for the spray nozzles is not easily identified.

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

Date: 11/12/97

INVALID: Spray nozzles are not given a tag number. Therefore, they are not required to be identified in the PDDS.

Date:

RESOLUTION:

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:	(none)	☐	☐	☒	
VT Lead:	Neri, Anthony A	☐	☐	☒	
VT Mgr:	Schopfer, Don K	☐	☐	☒	
IRC Chmn:	Singh, Anand K	☐	☐	☒	

Date:

SL Comments:

Northeast Utilities
Millstone Unit 3

ICAVP
Discrepancy Report

DR No. DR-MP3-0625

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

DR INVALID

Potential Operability Issue
○ Yes
◉ No

Date FAXed to NU:

Date Published: 11/17/97

Discrepancy: Containment Sump Level Verification Before RSS Auto-Start

Description:

The Millstone Unit 3 Safety Evaluation Report (SER), Section 7.5.2, states that during accident conditions, the operator uses the Containment Water Level (Wide Level) instrument to verify that water is in the containment sump before allowing the Containment Spray Recirculation Pumps to start automatically.

At least two Emergency Operating Procedures (EOPs) did not incorporate this SER requirement.

Several Emergency Operating Procedures (EOPs) were reviewed for requirements to start the Containment Recirculation Spray System (RSS) Pumps during accident conditions. Three EOPs were identified which required either automatic or manual start of the RSS Pumps, either as an "Action/Expected Response" step, or as a "Response Not Obtained" step. These three procedures are:

(1) EOP 35 ECA-1.1, "Loss of Emergency Coolant Recirculation," Revision 7
(2) EOP 35 ES-1.3, "Transfer to Cold Leg Recirculation," Revision 6
(3) EOP 35 FR-Z.1, "Response to High Containment Pressure," Revision 8

Only one of these procedures (EOP 35 ECA-1.1, step 10.a) meets the Safety Evaluation Report (SER) requirement to use the Containment Water Level (Wide Level) instruments to verify that water is in the containment sump before starting the RSS Pumps in either automatic or manual mode. Procedure EOP 35 FR-Z.1 checks the sump level once, under "Response Not Obtained," but only after the fact, when the RSS Pump has failed to automatically start.

Based on the review of EOPs, it is conluded that the SER commitment to verify sump water level has not been met, and the EOPs are inadequate for the required verification.

		Valid	Invalid	Review Needed	Date
Initiator:	Petrosky,Al.	☐	☒	☐	11/13/97
VT Lead:	Bass, Ken	☐	☒	☐	11/14/97
VT Mgr:	Schopfer, Don K	☐	☐	☐	
IRC Chmn:	Singh, Anand K	☐	☐	☐	

Date: 11/13/97

INVALID: The SER requirement itself is no longer valid. When the SER ite

m became effective with Supplement 2, Supplement 0 stated that the RSS pumps were required to start automatically approximately 4 minutes after receipt of a CDA signal, and sump level was a critical factor.

By the time SER Supplement 4 was released in November 1985, it was identified that two calculations dealing with RSS pump start time and sump level were in error. As a result of correction of these errors, the RSS pump start time was changed to 660 seconds for the first train and 670 seconds for the second train. Previously, there was 9,000 gallons of water in the sump at pump start. With the new start times, that figure changed to 169,000 gallons of water on the containment floor.

Additionally, a more accurate level measuring system was installed to meet TMI requirements, and the new instrumentation also satisfied both narrow and wide range level indication requirements.

This almost tripled the previous pump startup time delay, allowing ample time for sump fill prior to pump start, and sump level was no longer such a great concern. Consequently, it appears that the SER item was not incorporated into the FSAR because it was already obsolete data.

Based on the above, this Discrepancy Report is invalidated.

Date:

RESOLUTION:

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:	(none)	☐	☐	☒	
VT Lead:	Bass, Ken	☐	☐	☒	
VT Mgr:	Schopfer, Don K	☐	☐	☒	
IRC Chmn:	Singh, Anand K	☐	☐	☒	

Date:

SL Comments:

Northeast Utilities
Millstone Unit 3

ICAVP
Discrepancy Report

DR No. DR-MP3-0105

Review Group: Accident Mitigation
Review Element: System Design
Discipline: Other
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: 9/11/97

Discrepancy: Westinghouse Comments On Safety System Functional Requirements Document and FSAR Chapter 15

Description: Westinghouse Letter NEU-96-614, "Northeast Utilities Service Company Millstone Unit 3 - Review of Safety Systems Functional Requirements," dated October 25, 1996, provides comments on the sections of the Safety System Functional Requirement report related to: Reactor Coolant System, Chemical Volume and Control System, Emergency Core Cooling System, Main Steam System, Main Feedwater System, Auxiliary Feedwater System, Containment Systems, Reactor Protection Systems, and Emergency Safety Features Actuation System. The comments were provided by the Westinghouse non-LOCA and LOCA analysis groups. Westinghouse provided these comments at the request of Northeast Utilities Service Company (NU).

Westinghouse Letter NEU-96-622, "Northeast Utilities Service Company Millstone Unit 3 - Review of Safety System Functional Requirements," dated November 15, 1996, provides comments on information contained in the Millstone 3 Safety Systems Functional Requirements Document from the Westinghouse Fluid Systems Group. Westinghouse provided these comments at the request of NU.

Westinghouse Letter NEU-97-536, "Northeast Utilities Service Company Millstone Unit 3 - Review of FSAR Chapter 15," dated April 8, 1997, provides comments on the accident analyses reported in FSAR §§15.0 and 15.4. Westinghouse provided these comments at the request of NU.

Westinghouse Letter NEU-97-537, "Northeast Utilities Service Company Millstone Unit 3 - Review of Steam Line Break M&E Information in FSAR Chapter 15," dated April 8, 1997, provides comments with respect to the steam and feedwater releases used in the radiological evaluations at Millstone 3. Westinghouse provided the comments at the request of NU.

The comments contained in NEU-96-614, NEU-96-622, NEU-97-536, and NEU-97-537 identify revisions to the initial conditions and nominal values used by Westinghouse in the analyses supporting the licensing of the Millstone 3 plant. These changes have not been incorporated into the FSAR. Therefore, the FSAR is inconsistent with the supporting analysis for the plant.

A review of applicable corrective action databases for Millstone 3 has not identified any pending FSAR change notice item that will incorporate the Westinghouse comments.

Review

		Valid	Invalid	Review Needed	Date
Initiator:	Peebles, W. R.	☒	☐	☐	9/3/97
VT Lead:	Raheja, Raj D	☒	☐	☐	9/3/97
VT Mgr:	Schopfer, Don K	☒	☐	☐	9/8/97
IRC Chmn:	Singh, Anand K	☒	☐	☐	9/8/97

Date:

INVALID:

Date: 11/10/97

RESOLUTION: Disposition:
NU has concluded that the issue reported in Discrepancy Report, DR-MP3-0105, does not represent a discrepant condition. The discrepancies associated with letters NEU-97-536 and NEU-97-537 were previously raised and addressed in the following DRS: DR-MP3-0021 (M3-IRF-00269), DR-MP3-0024 (M3 IRF 00296) and DR MP3-0022 (M3-IRF-00285).

The Safety Functional Requirements (SFR) manual summarizes relevant analytical inputs and assumptions for FSAR Chapter 15. The SFR may also contain other supplementary information not required to be in Chapter 15. Because of this, all SFR changes are not necessarily incorporated into Chapter 15. The comments in letters NEU-96-614 and 622 pertain directly to the SFR. Westinghouse provided these comments at NU's request. They also provided letters NEU-96-623, NEU 96 615, NEU 97 536 and NEU 97 537 to comment on FSAR Chapter 15. To verify consistency between the SFR changes and the FSAR, a selection of Westinghouse recommendations from letter NEU-96-622 was compared with the FSAR and FSARCRs. All selected comments were incorporated in either the FSAR or in an FSARCR.

The comments in letter NEU-96-614 were verified. There were only 2 changes required to the FSAR and none were to Chapter 15. The changes are described in items 5 and 6 in the letter. FSAR CR 97 MP3-307, initiated 7/11/97 against FSAR Chapter 9.3.4, Chemical and Volume Control, and approved 9/17/97, incorporated the changes. A third change was recommended in item 16. However, this change relates to an 1100 psia steam system. Unit 3 steam generators are rated for a design pressure of 1200 psia so this comment was not incorporated.

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-MP3-0105, does not represent a discrepant condition. The comments provided to NU in the Westinghouse letters have been incorporated into the FSAR or are currently in an FSAR CR (FSAR CR 97-MP3-307 contains changes from NEU-96-614) awaiting PORC approval. 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

Northeast Utilities
Millstone Unit 3

ICAVP
Discrepancy Report

DR No. DR-MP3-0105

~~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:	Peebles, W. R.	☒	☐	☐	11/10/97
VT Lead:	Raheja, Raj D	☒	☐	☐	11/10/97
VT Mgr:	Schopfer, Don K	☒	☐	☐	11/12/97
IRC Chmn:	Singh, Anand K	☒	☐	☐	11/13/97
Date:					

SL Comments:

Northeast Utilities
Millstone Unit 3

ICAVP
Discrepancy Report

DR No. DR-MP3-0151

Review Group: Accident Mitigation
Review Element: Change Process
Discipline: Other
Discrepancy Type: Licensing Document
System/Process: N/A
IRC Significance level: 4

DR RESOLUTION ACCEPTED

Potential Operability Issue
○ Yes
◉ No

Date FAXed to NU:

Date Published: 9/22/97

Discrepancy: FSAR Inconsistent with Calculations

Description: A review of the following documentation has concluded that a discrepancy exists with regard to documentation relating to estimated doses in the Millstone 3 (MP3) control room following a Loss of Coolant Accident (LOCA). The documents reviewed are:

1) MP3 FSAR, Chapter 15.6, Loss-of-Coolant Accident (LOCA) - Table 15.6-13

2) Calculation 88-019-97RA, Rev. 0, "Doses to the MP3 Control Room and Technical Support Center from a Unit 3 LOCA"

3) Calculation 88-019-98RA, Rev. 0, "Shine Dose to the MP3 Control Room and Technical Support Center from a Unit 3 LOCA"

The two calculations cited above form the basis for the estimated doses to the to MP3 control room and technical support center following a design basis LOCA at MP3. A review of the reported results in FSAR Table 15.6-13 concluded that the shine dose contribution in calculation 88-019-98RA may have been omitted from the values reported in the FSAR. These values appear to have been updated in 1992 by FSAR update 92-22, but the values apparently did not reflect the shine dose contribution.

UIR 104 addresses a letter to the NRC that provided updated control room dose estimates, but the dose calculations referenced above were not cited.

		Valid	Invalid	Review Needed	Date
Initiator:	Bennett, L A.	☒	☐	☐	9/5/97
VT Lead:	Raheja, Raj D	☒	☐	☐	9/5/97
VT Mgr:	Schopfer, Don K	☒	☐	☐	9/9/97
IRC Chmn:	Singh, Anand K	☒	☐	☐	9/16/97

Date:

INVALID:

Date: 11/5/97

RESOLUTION: Disposition:

NU has concluded that the issue reported in Discrepancy Report, DR-MP3-0151, does not represent a discrepant condition. As noted on Table 15, MP3 Control Room Results, (Page 33 of 37) and Table 16, TSC Results (Page 34 of 37) of calculation 88-019-

97RA, the shine contribution was added into the total results. It is also noted on the Tables that the shine value was obtained from Reference 13. The references section of calculation 88-019-97RA lists calculation 88-019-98RA as Reference 13. Calculation 88-019-97RA is the calculation of record for FSAR Tables 15.6-13 and 15.6-22 and also reflect the results from calculation 88 019-98RA. 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-MP3-0151, does not represent a discrepant condition. As indicated in Tables 15 and 16 of calculation 88-019-97RA, the shine dose from calculation 88-019-98RA was included in the Control Room and TSC results. The results of calculation 88 019-97RA are reported in the FSAR Tables. 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:	Bennett, L. A.	☒	☐	☐	11/5/97
VT Lead:	Raheja, Raj D	☒	☐	☐	11/6/97
VT Mgr:	Schopfer, Don K	☒	☐	☐	11/12/97
IRC Chmn:	Singh, Anand K	☒	☐	☐	11/13/97
Date:	11/5/97				
SL Comments:					

Northeast Utilities
Millstone Unit 3

ICAVP
Discrepancy Report

DR No. DR-MP3-0200

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

DR RESOLUTION ACCEPTED

Potential Operability Issue
○ Yes
◉ No

Date FAXed to NU:

Date Published: 10/3/97

Discrepancy: Mass Flow Capacity of Turbine Bypass Control Valves Is Not Verified.

Description: The accident analysis results reported in FSAR §15.1.4 is based on the assumption that the maximum capacity of any single steam dump, relief or safety valve is 277 lbm/sec at an inlet pressure of 1200 psia.

No data was found to support this assumption for the Turbine Bypass Control Valves (3MSS-PV47A/B/C, 3MSS-PV48A/B/C, and 3MSS-PV49A/B/C).

		Valid	Invalid	Review Needed	Date
Initiator:	Peebles, W. R.	☒	☐	☐	9/12/97
VT Lead:	Raheja, Raj D	☒	☐	☐	9/12/97
VT Mgr:	Schopfer, Don K	☒	☐	☐	9/22/97
IRC Chmn:	Singh, Anand K	☒	☐	☐	9/27/97

Date:

INVALID:

Date: 10/28/97

RESOLUTION: Disposition:
NU has concluded that Discrepancy Report, DR-MP3-0200, has identified a condition previously discovered by NU which requires correction. Sargent and Lundy could not find data to support that the flow capacity of the Turbine Bypass Control Valves (3MSS-PV47A/B/C, 3MSS-PV48A/B/C, and 3MSS-PV49A/B/C) did not exceed the 277 lb/sec @ 1200 psia. This flow capacity was assumed by the accident analysis of FSAR 15.1.4 for any single steam dump, relief, or safety valve. Note: 277 lb/sec = 997,200 lb/hr.

FSAR chapter 10 Section 10.4.4.1 also states following: "The capacity of any single turbine bypass valve does not exceed 970,000 lb/hr of steam at the main steam supply system design pressure, 1185 psig, as supplied by the nuclear steam system supplier. The failure of a turbine bypass valve to close will not cause an uncontrolled plant cooldown and excessive reactivity excursion.

An Adverse Condition Report (ACR) M3-97-1173 was initiated by the 10CFR50.54f group on 04/24/97 to identify a concern that the maximum flow capacity of the Turbine Bypass Control Valves may exceed the 970,000 lb/hr stated by FSAR Sec. 10.4.4.1. Investigation for ACR M3-97-1173 determined that the vendor had not satisfied the requirement of the Stone and Webster Engineering Corporation (SWEC) Specification

2472.120-183, Technical Data Sheet 3-3, for a maximum permissible flow through these valves of 970,000 lb/hr @ 1200 psia. The corrective action for ACR M3-97-1173 includes an installation of a design modification to shorten the valve stroke to limit turbine bypass control valve maximum capacity to 970,000 lb/hr.

Conclusion:
NU has concluded that Discrepancy Report, DR-MP3-0200, has identified a condition previously discovered by NU which requires correction.

An Adverse Condition Report (ACR) M3-97-1173 was initiated on 04/24/97 to provide the corrective actions to address and resolve this issue. The corrective action for ACR M3-97-1173 includes an installation of a design modification to shorten the valve stroke to limit turbine bypass control valve maximum capacity to 970,000 lb/hr.

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:	Peebles, W. R.	☒	☐	☐	10/28/97
VT Lead:	Raheja, Raj D	☒	☐	☐	10/29/97
VT Mgr:	Schopfer, Don K	☒	☐	☐	11/12/97
IRC Chmn:	Singh, Anand K	☒	☐	☐	11/13/97
Date:					

SL Comments:

Northeast Utilities
Millstone Unit 3

ICAVP
Discrepancy Report

DR No. DR-MP3-0269

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

DR RESOLUTION REJECTED

Potential Operability Issue
○ Yes
◉ No

Date FAXed to NU:

Date Published: 10/3/97

Discrepancy: Chemistry action limits for RWST not specified.

Description: The FSAR assumes a value for the lower limit of pH for the RWST water so that the pH of the water recirculated within the containment after an accident is between a pH value of 7.0 and 7.5. Although the plant monitors the pH of the water on a weekly frequency, there are no limits or action statements provided to ensure that the plant meets the FSAR minimum value for pH.

FSAR, page 6.2-41 states "The minimum pH of the spray from the quench spray headers into the containment structure is 4.4. However, the final pH of the water in the containment structure sump after a DBA, including the contents of the RWST, is equal to or greater than 7.0 due to the neutralization effects of trisodium phosphate (TSP) located in ..."

The water chemistry is monitored weekly, including measuring and recording the pH. However, the chemistry procedure (CP 3802C) and the chemistry data sheet (Chem Form 3802C-1) do not provide either the limit on pH or actions to be taken, if the pH is less than 4.4.

As a consequence, the initial condition for pH may not be met, which could lead to a pH of less than 7.0 for the water recirculated in the containment following an accident. The bases for 3/4.5.4 Refueling Water Storage Tank states ... "This pH band minimizes the effect of chloride and caustic stress corrosion on mechanical systems and components. ... High temperatures and low pH, which could be present after a LOCA, tend to promote SCC. This can lead to the failure of necessary safety systems or components....Adjusting the pH of the recirculation solution to levels above 7.0 prevents a significant fraction of the dissolved iodine from converting to a volatile form. The higher pH thus decreases the level of airborne iodine in containment and reduces the radiological consequences from containment atmospheric leakage following a LOCA. Maintaining the solution pH greater than or equal to 7.0 also reduces the occurrence of SSC of austenitic stainless steel components in containment. Reducing SCC reduces the probability of failure of components."

Without adequate limits and corrective actions in place, it cannot be assured that the minimum pH as assumed in the FSAR and Tech Spec bases will be met.

		Valid	Invalid	Review Needed	Date
Initiator:	Pieniewicz, R.	☒	☐	☐	9/22/97
VT Lead:	Bass, Ken	☒	☐	☐	9/22/97
VT Mgr:	Schopfer, Don K				9/22/97

VT Mgr:	Schopfer, Don K	☒	☐	☐	9/22/97
IRC Chmn:	Singh, Anand K	☒	☐	☐	9/27/97

Date:

INVALID:

Date: 10/31/97

RESOLUTION: Disposition:
NU has concluded that the issue reported in Discrepancy Report, DR-MP3-0269, does not represent a discrepant condition. This item was previously identified by NU and dispositioned in OIR 201. The pH value of 4.4 corresponds to the pH associated with a boron concentration of 2900 ppm in the RWST. This boron concentration upper limit is identified in Technical Specification 3/4.5.4 and surveilled by SP-3859. Chemistry Department Procedure CP-3802C (10/1/97) specifies a boron concentration lower and upper limit of 2700-2900 ppm. As such, Technical Specifications would be in violation for the pH to be below 4.4. However, a level 3 program enhancement CR-M3-97-3551 was initiated to tie SP-3859 with FSAR Section 6.2.2.2, in the event the RWST upper boron concentration limit is increased. 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-MP3-0269, does not represent a discrepant condition. The pH value is derived from the boron concentration upper limit in the Technical Specifications (TS). TS surveillance and water chemistry controls on boron concentration in the RWST ensure that the minimum value for pH is met. A level 3 program enhancement CR-M3-97-3551 was initiated to provide a tie betweeen the FSAR and the TS surveillance procedure. Significance Level criteria do not apply here as this is not a discrepant condition.

Attachments: OIR-201 Closure Request

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:	Pleniewicz, R.	☐	☒	☐	10/31/97
VT Lead:	Bass, Ken	☐	☒	☐	10/31/97
VT Mgr:	Schopfer, Don K	☐	☒	☐	11/12/97
IRC Chmn:	Singh, Anand K	☐	☒	☐	11/13/97

Date: 10/31/97

SL Comments: Millstone Unit 3 presently uses a program provided by Combustion Engineering to correlate pH to boron concentration. Since this program predicts that the pH will be within 0.01 pH units of the minimum value stated in the FSAR, small variations of the pH of the water other than by boration could cause the final pH of the RWST to be lower than 4.4.

S&L is aware of occurrences at other nuclear plants where

inadvertent contamination of tanks has occurred. This has included acid intrusion into tanks which has significantly depressed the pH of the contained water. Therefore, a similar event is considered possible, although unlikely, for the RWST at Millstone Unit 3. This could lead to the pH being out of limits even with the boron concentration in specification.

pH is directly measured and recorded on the same periodicity as the boron concentration, however, no lower limit for the pH is provided. Without a lower limit specified for the pH, alerting plant personnel to take corrective action, it is possible to have a lower pH in the RWST than that stated in the FSAR.

S&L considers the response to this Discrepancy Report as Not Acceptable.