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NUCLEAR ENGINEERING
CALCULATION / STUDY COVER SHEET
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File # R2-1

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** If N/A then line 15 is mandatory.

*15. NON-SYSTEM DESIGNATOR:

16. Affected Documents:

17. References: SE-B-NA-015, E-149 Sh1, E-149 Sh2, E-149 Sh6, E-149 Sh7

18. Equipment / Component #: 1C201, 2C201, HSS14901A

19. DBD Number: DBD076, DBD019

20. PREPARED BY		21. REVIEWED BY	
Print Name	<u>pm</u>	Print Name	<u>#CS</u>
Signature	<u>N/A BACKFIT EFFORT</u>	Signature	<u>N/A BACKFIT EFFORT</u>
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VERIFICATION OF EQUIPMENT

ISOLATION AT THE REMOTE

SHUTDOWN PANEL IN THE EVENT OF A

CONTROL ROOM FIRE

DCC15.0-A REV. 1

SEA

SEA-EE-018

0	7-7-87	<i>Salip Montetione</i>	<i>H.C. Sawhney</i>	<i>J.M. DeKorte</i>
REVISION NO.	DATE	PREPARED BY	REVIEWED BY	APPROVED BY

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1.0 Introduction

As part of the 10CFR50 Appendix R Analysis for the PP&L Susquehanna plants, one of the scenarios requiring evaluation is a postulated fire in the Control Room and its resulting impact on the capability to safely shut down the two units. This analysis was performed and documented in SE-B-NA-015 (Reference 4.1). A major consideration in this analysis was the capability to isolate fire-damaged safe shutdown Control Room cables from outside the Control Room. This is necessary to ensure that the damaged portion of the affected safe shutdown component circuit is isolated such that local operability of the component is maintained regardless of the damaged Control Room cables.

For a fire in the Control Room necessitating evacuation, plant shutdown actions are performed at the respective Remote Shutdown Panels (RSP) of each Unit. Isolation of Control Room cables capability is provided at the RSP via transfer switches. This analysis documents all equipment operable from the RSP for which isolation capability is built in to the circuit logic such that a fire in the Control Room will not disable the operability of the component. Note that all components operated from the RSP, and not strictly Appendix R safe shutdown components, were reviewed for isolation capability. This report does not ensure that all components required to operate for safe shutdown, for a fire in the Control Room, are isolatable from the RSP. The report addresses those safe shutdown components operable from the RSP that are isolatable. In other words, some safe shutdown components affected by a fire in the Control Room may be operable only from a local panel, and may or may not be isolatable. This case is not addressed as part of this SEA.

2.0 Objective

The purpose of this evaluation is to document all those components operable from the RSP that are isolatable in the event of a Control Room Fire. This review does not address the isolation of any Appendix R safe shutdown components that are not operable from the RSP.

3.0 Recommendations and Conclusions

Based on the results of this study, as summarized in the "RSP Equipment Isolation Summary" (Attachment 1), the following components were identified as lacking total isolation capability at the RSP:

MSIV - HV-B21-1F022A,B,C,D - Indication only isolatable
MSIV - HV-B21-2F022A,B,C,D - Indication only isolatable
SRV - PSV-B21-1F013A,B,C - Indication not isolatable
SRV - PSV-B21-2F013A,B,C - Indication not isolatable

Further investigation (Reference 4.3) has concluded that the lack of total isolation capability for the MSIVs and SRVs is not a concern for the following reasons:

- a. The MSIVs can be closed from the RPS Distribution Panels by tripping the appropriate breaker.

- b. The indication for the SRVs at the RSP is not by itself a reliable source of indication and would not be relied upon for monitoring SRV position status. The reason for this is that position indication for the SRVs relies on the energization of a relay which is not a conclusive direct means of determining valve position. Other indications such as reactor vessel level and pressure would be relied upon to indirectly monitor SRV position.

The RSP Equipment Isolation Summary (Attachment 1) documents all equipment operable from the RSP that are isolatable from the Control Room such that proper functioning of the equipment from the RSP is assured regardless of a fire in the Control Room.

4.0 References

Reference drawings are identified for each transfer switch on Attachment 2.

In addition, the following references were utilized in performing this evaluation:

- 4.1 SE-B-NA-015, "Plant Shutdown in the Event of a Control Room Fire," Revision 0.
- 4.2 Schematic Diagrams - Remote Shutdown Panels:
 - E-149, Sh. 1, Rev. 9
 - Sh. 2, Rev. 8
 - Sh. 6, Rev. 6
 - Sh. 7, Rev. 8
- 4.3 Record of Conversation between H. Sawhney (NPE-Electrical) and A. White (NPE-Systems) "MSIV and SRV Isolation", dated 6/26/87.

5.0 Assumptions/Inputs

The following assumptions were made for the purpose of conducting this evaluation:

- 5.1 The transfer switch information identified on the Schematic Diagrams for Remote Shutdown Panels 1C201 and 2C201 (Reference 4.2) is assumed to be accurate and fully comprehensive.
- 5.2 Annunciators/alarms at the RSP are not necessary for achieving safe shutdown and hence, were not analyzed for isolation capability.

6.0 Method

The following steps were performed in order to conduct this evaluation:

- 6.1 Reviewed all drawings referenced on the Schematic Diagrams for Remote Shutdown Panel Transfer Switches (Reference 4.2).

- 6.2 Compiled the action and function of each Transfer Switch contact (refer to Attachment 2).
- 6.3 All components identified in 6.2 were sorted by system and analyzed for isolation capability (refer to Attachment 1).
- 6.4 Based on the RSP Equipment Isolation Summary (Attachment 1), components which lack complete isolation capability were identified in Section 3.0.

7.0 Results

The following transfer switches are located on the RSP and were analyzed to determine those components that are isolatable at the RSP in the event of a Control Room fire:

7.1 RSP 1C201 Transfer Switches -

<u>Transfer Switch</u>	<u>Attachment 2 Pages</u>
HSS-14901A	1-5
HSS-14902A	6-11
HSS-14902B	12-17
HSS-14903A	18-23
HSS-14903B	24-29
HSS-14904A	30-35
HSS-14905A	36-41
HSS-15110A	42-44
HSS-15111A	45-49
HSS-15111B	50-55
HSS-15112A	56-62
HSS-15112B	63-68
HSS-15113A	69-74
HSS-15113B	75-79
HSS-15114A	80-84
HSS-15114B	85-90
HSS-15115A	91-96
HSS-15115B	97-102
HSS-15116A	103-108
HSS-15116B	109-113
HSS-15117A	114-119
HSS-15117B	120-125

7.2 RSP 2C201 Transfer Switches -

<u>Transfer Switch</u>	<u>Attachment 2 Pages</u>
HSS-24901A	126-131
HSS-24902A	132-137
HSS-24902B	138-143
HSS-24903A	144-149
HSS-24903B	150-155

HSS-24904A	156-161
HSS-24905A	162-168
HSS-25110A	169-171
HSS-25111A	172-175
HSS-25111B	176-180
HSS-25112A	181
HSS-25112B	182-184
HSS-25113A	185-190
HSS-25113B	191-196
HSS-25114A	197-202
HSS-25114B	203-209
HSS-25115A	210-215
HSS-25115B	216-221
HSS-25116A	222-227
HSS-25116B	228-234
HSS-25117A	235-240
HSS-25117B	241-246
HSS-25118A	247

The review of each of the RSP Transfer Switches, documented in the "RSP Transfer Switch Isolation Verification Worksheets" (Attachment 2), established a list of those components that are operable from the RSP. These components and the extent to which they are isolated for a Control Room fire, are documented in the "RSP Equipment Isolation Summary" (Attachment 1).

The evaluation showed that the following components are not totally isolatable from the RSP for a Control Room fire:

- MSIV - HV-B21-1F022A,B,C,D
- MSIV - HV-B21-2F022A,B,C,D
- SRV - PSV-B21-1F013A,B,C
- SRV - PSV-B21-2F013A,B,C

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ATTACHMENT 1

RSP EQUIPMENT ISOLATION SUMMARY



RSP EQUIPMENT ISOLATION SUMMARY - UNIT 1

system	Component	Isolation Capability			Total Isolation	Transfer Switch	Attach. 2 T.S. Sh. No.	Remarks
		Power	Control	Indication				
RCIC	HV-E51-1F007	Yes	Yes	Yes	Yes	HSS-14905A	Sh. 1,2	
	HV-E51-1F008	Yes	Yes	Yes	Yes	HSS-14904A	Sh. 1,2	
	HV-E51-1F010	Yes	Yes	Yes	Yes	HSS-14902B	Sh. 2,3,4	
	HV-E51-1F012	Yes	Yes	Yes	Yes	HSS-14903B	Sh. 3,4	
	HV-E51-1F013	Yes	Yes	Yes	Yes	HSS-14904A	Sh. 2,3,4	
	HV-E51-1F022	Yes	Yes	Yes	Yes	HSS-14903B	Sh. 5,6	
	HV-E51-1F031	Yes	Yes	Yes	Yes	HSS-14902A	Sh. 2,3,4	
	HV-E51-1F059	Yes	Yes	Yes	Yes	HSS-14902B	Sh. 4,5,6	
	HV-E51-1F060	Yes	Yes	Yes	Yes	HSS-14903A	Sh. 4,5,6	
	HV-E51-1F062	Yes	Yes	Yes	Yes	HSS-14904A HSS-14903A	Sh. 4,5,6 Sh. 6	
	HV-E51-1F084	Yes	Yes	Yes	Yes	HSS-14905A	Sh. 4,5,6	
	RCIC Controller Output & RCIC Pump Flow Signals To TMS	N/A	Yes	N/A	Yes	HSS-14901A	Sh. 2	Relays K1 & K2 energized to Select Signals from Panel 1C201A
	FT-E51-1N003	Yes	N/A	N/A	Yes	HSS-14901A	Sh. 1	
	FV-E51-1F019	Yes	Yes	Yes	Yes	HSS-14903A	Sh. 2,3,4	
	E51-R600/ FIC-14903	N/A	Yes	N/A	Yes	HSS-14901A	Sh. 1	
	HV-E51-15012	Yes	Yes	Yes	Yes	HSS-14903A	Sh. 1,2	
	HV-E51-1F045	Yes	Yes	Yes	Yes	HSS-14903B	Sh. 1,2	
	HV-E51-1F046	Yes	Yes	Yes	Yes	HSS-14902A	Sh. 5,6	
	1P-219	Yes	Yes	Yes	Yes	HSS-14902B	Sh. 1,2	
	1P-220	Yes	Yes	Yes	Yes	HSS-14902A	Sh. 1,2	
	SI-15001 A/B	N/A	N/A	Yes	Yes	HSS-14901A	Sh. 2	
	RCIC Turbine Governor 48V DC Power	Yes	N/A	N/A	Yes	HSS-14902A	Sh. 4	
	RCIC Turbine Remote Trip Control Power	Yes	N/A	N/A	Yes	HSS-14902B	Sh. 6	
RCIC Turbine Governor Ramp Control	N/A	Yes	N/A	Yes	HSS-14901A	Sh. 5		
RHR	HV-E11-1F003A	Yes	Yes	Yes	Yes	HSS-15112A	Sh. 4	
	HV-E11-1F003B	Yes	Yes	Yes	Yes	HSS-15116A	Sh. 1,2	
	HV-E11-1F004B	Yes	Yes	Yes	Yes	HSS-15114A	Sh. 1,2	
	HV-E11-1F006A	Yes	Yes	Yes	Yes	HSS-15112B	Sh. 2	
	HV-E11-1F006B	Yes	Yes	Yes	Yes	HSS-15113B	Sh. 1,2	



RSP EQUIPMENT ISOLATION SUMMARY - UNIT 1 (Cont'd)

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stem	Component	Isolation Capability			Total Isolation	Transfer Switch	Attach. 2		Remarks
		Power	Control	Indication			T.S.	Sh. No.	
	HV-E11-1F006C	Yes	Yes	Yes	Yes	HSS-15112B	Sh.	3	
	HV-E11-1F006D	Yes	Yes	Yes	Yes	HSS-15113B	Sh.	3,4	
	HV-E11-1F007B	Yes	Yes	Yes	Yes	HSS-15115A	Sh.	3,4	
	HV-E11-1F008	Yes	Yes	Yes	Yes	HSS-15113A	Sh.	1,2	
	HV-E11-1F009	Yes	Yes	Yes	Yes	HSS-15112A	Sh.	2,3	
	HV-E11-1F010A	Yes	Yes	Yes	Yes	HSS-15111A	Sh.	4,5	
	HV-E11-1F010B	Yes	Yes	Yes	Yes	HSS-15113B	Sh.	2,3	
	HV-E11-1F011B	Yes	Yes	Yes	Yes	HSS-15115A	Sh.	5	
	HV-E11-1F015B	Yes	Yes	Yes	Yes	HSS-15116A	Sh.	4,5,6	
	HV-E11-1F016A	Yes	Yes	Yes	Yes	HSS-15111B	Sh.	3	
	HV-E11-1F016B	Yes	Yes	Yes	Yes	HSS-15113B	Sh.	4,5	
	HV-E11-1F017A	Yes	Yes	Yes	Yes	HSS-15111A	Sh.	3	
	HV-E11-1F017B	Yes	Yes	Yes	Yes	HSS-15114A	Sh.	2,3	
	HV-E11-1F022	Yes	Yes	Yes	Yes	HSS-15111B	Sh.	1,2	
	HV-E11-1F023	Yes	Yes	Yes	Yes	HSS-15113A	Sh.	3,4	
	HV-E11-1F024B	Yes	Yes	Yes	Yes	HSS-15114B	Sh.	3,4	
	HV-E11-1F026B	Yes	Yes	Yes	Yes	HSS-15116A	Sh.	3,4	
	HV-E11-1F027B	Yes	Yes	Yes	Yes	HSS-15115B	Sh.	5	
	HV-E11-1F028B	Yes	Yes	Yes	Yes	HSS-15115A	Sh.	1,2	
	HV-E11-1F028A	Yes	Yes	Yes	Yes	HSS-15112B	Sh.	4	
	HV-E11-1F040	Yes	Yes	Yes	Yes	HSS-15112B	Sh.	1,2	
	HV-E11-1F047B	Yes	Yes	Yes	Yes	HSS-15115B	Sh.	1,2	
	HV-E11-1F048B	Yes	Yes	Yes	Yes	HSS-15115B	Sh.	3,4	
	HV-E11-1F048A	Yes	Yes	Yes	Yes	HSS-15111A	Sh.	1	
	HV-E11-1F049	Yes	Yes	Yes	Yes	HSS-15114A	Sh.	3,4,5	
	HV-E11-1F103B	Yes	Yes	Yes	Yes	HSS-15115B	Sh.	2,3	
	HV-E11-1F104B	Yes	Yes	Yes	Yes	HSS-15116A	Sh.	2,3	
	HV-E11-1F129B	Yes	Yes	N/A	Yes	HSS-15115B	Sh.	5	
	HV-E11-15112	Yes	Yes	Yes	Yes	HSS-15111A	Sh.	2	
	PV-E11-1F051B	N/A	Yes	N/A	Yes	HSS-15116B	Sh.	4	
	1P-202B	Yes	Yes	Yes	Yes	HSS-15114B	Sh.	1,2	
	FI-15105/ FT-1N015B	N/A	N/A	Yes	Yes	HSS-15110A	Sh.	1	
	RHR Flow Signal from RSP 1C201 Connected to TMS	N/A	N/A	Yes	Yes	HSS-15110A	Sh.	3	

RSP EQUIPMENT ISOLATION SUMMARY - UNIT 1 (Cont'd)

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Item	Component	Isolation Capability			Total Isolation	Transfer Switch	Attach. 2 T.S. Sh. No.	Remarks
		Power	Control	Indication				
ESW	OP-504B	Yes	Yes	Yes	Yes	HSS-15117A	Sh. 2,3,4	
	OP-504D	Yes	Yes	Yes	Yes	HSS-15117B	Sh. 2,3,4	
RHRSW	1P-506B	Yes	Yes	Yes	Yes	HSS-15117B HSS-15116B	Sh. 5,6 Sh. 5	
	HV-11210B	Yes	Yes	Yes	Yes	HSS-15117A	Sh. 5,6	
	HV-11215B	Yes	Yes	Yes	Yes	HSS-15116B	Sh. 1,2	
	HV-01222B	Yes	Yes	Yes	Yes	HSS-15116B	Sh. 2,3	
	HV-01224B1	Yes	Yes	Yes	Yes	HSS-15117A	Sh. 1,2	
	HV-01224B2	Yes	Yes	Yes	Yes	HSS-15117B	Sh. 1,2	
	FI-1N007B	Yes	N/A	Yes	Yes	HSS-15110A	Sh. 1	
	FI-11207B	Yes	N/A	Yes	Yes	HSS-15110A	Sh. 1	
	HV-1F073B	Yes	Yes	Yes	Yes	HSS-15113A	Sh. 5	
	MSIV	HV-B21-1F022A	N/A	No	Yes	No	HSS-14901A	Sh. 3
HV-B21-1F022B		N/A	No	Yes	No	HSS-14901A	Sh. 3	
HV-B21-1F022C		N/A	No	Yes	No	HSS-14901A	Sh. 4	
HV-B21-1F022D		N/A	No	Yes	No	HSS-14901A	Sh. 4	
SRV	PSV-B21-1F013A	Yes	Yes	No	No	HSS-15111B	Sh. 4	Indication is not isolated from control room.
	PSV-B21-1F013C	Yes	Yes	No	No	HSS-15112A	Sh. 1	
	PSV-B21-1F013B	Yes	Yes	No	No	HSS-15112B	Sh. 5	
Cont. Inst. Gas	SV-12651	Yes	Yes	Yes	Yes	HSS-15111B	Sh. 5,6	
	HV-12603	Yes	Yes	Yes	Yes	HSS-15112A	Sh. 5,6	
	SV-12605	Yes	Yes	Yes	Yes	HSS-15114B	Sh. 5,6	
SPM	LI-15776B2	N/A	N/A	Yes	Yes	HSS-15110A	Sh. 2	
	LT-15776B	N/A	N/A	Yes	Yes	HSS-15110A	Sh. 2	
	TI-15751	N/A	N/A	Yes	Yes	HSS-14901A	Sh. 2	
	TI-15752	N/A	N/A	Yes	Yes	HSS-15110A	Sh. 2	
	TI-15725B	N/A	N/A	Yes	Yes	HSS-15110A	Sh. 3	
	TI-15725B	N/A	N/A	Yes	Yes	HSS-15110A	Sh. 3	
CAC	PI-15728B	N/A	N/A	Yes	Yes	HSS-15110A	Sh. 2	
	PT-15728B	N/A	N/A	Yes	Yes	HSS-15110A	Sh. 2	
	TI-15790B2	N/A	N/A	Yes	Yes	HSS-15110A	Sh. 2	
	TI-15790B2	N/A	N/A	Yes	Yes	HSS-15110A	Sh. 2	

RSP EQUIPMENT ISOLATION SUMMARY - UNIT 1 (Cont'd)

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stem	Component	Isolation Capability			Total Isolation	Transfer Switch	Attach. 2 T.S. Sh. No.	Remarks
		Power	Control	Indication				
RRS	HV-B31-1F023B	Yes	Yes	Yes	Yes	HSS-14905A	Sh. 2,3,4	

NOTE: On Remote Shutdown Panel 1C201, position & bypass indication for each switch is indicated by lights.

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RSP EQUIPMENT ISOLATION SUMMARY - UNIT 2

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System	Component	Isolation Capability			Total Isolation	Transfer Switch	Attach. 2 T.S. Sh. No.	Remarks
		Power	Control	Indication				
RCIC	SI-25001 A/B	N/A	N/A	Yes	Yes	HSS-24901A	Sh. 2	
	HV-E51-2F007	Yes	Yes	Yes	Yes	HSS-24905A	Sh. 1,2	
	HV-E51-2F008	Yes	Yes	Yes	Yes	HSS-24904A	Sh. 1,2	
	HV-E51-2F010	Yes	Yes	Yes	Yes	HSS-24902B	Sh. 2,3,4	
	HV-E51-2F012	Yes	Yes	Yes	Yes	HSS-24903B	Sh. 3,4	
	HV-E51-2F013	Yes	Yes	Yes	Yes	HSS-24904A	Sh. 2,3,4	
	HV-E51-2F022	Yes	Yes	Yes	Yes	HSS-24903B HSS-24902A	Sh. 5,6 Sh. 6	
	HV-E51-2F031	Yes	Yes	Yes	Yes	HSS-24902A	Sh. 2,3,4	
	HV-E51-2F059	Yes	Yes	Yes	Yes	HSS-24902B	Sh. 4,5,6	
	HV-E51-2F060	Yes	Yes	Yes	Yes	HSS-24903A	Sh. 4,5,6	
	HV-E51-2F062	Yes	Yes	Yes	Yes	HSS-24904A HSS-24903A	Sh. 4,5,6 Sh. 6	
	HV-E51-2F084	Yes	Yes	Yes	Yes	HSS-24905A	Sh. 5,6	
	FV-E51-2F019	Yes	Yes	Yes	Yes	HSS-24903A	Sh. 2,3,4	
	E51-R600/ FIC-24903	N/A	Yes	N/A	Yes	HSS-24901A	Sh. 1	
	HV-E51-25012	Yes	Yes	Yes	Yes	HSS-24903A	Sh. 1,2	
	HV-E51-2F045	Yes	Yes	Yes	Yes	HSS-24903B	Sh. 1,2	
	HV-E51-2F046	Yes	Yes	Yes	Yes	HSS-24902A	Sh. 5,6	
	2P-219	Yes	Yes	Yes	Yes	HSS-24902B	Sh. 1,2	
	2P-220	Yes	Yes	Yes	Yes	HSS-24902A	Sh. 1,2	
	FT-E51-2N003	Yes	N/A	N/A	Yes	HSS-24901A	Sh. 1	
	RCIC Controller Signal & RCIC Pump Flow Signal To TMS	N/A	Yes	N/A	Yes	HSS-24901A	Sh. 2	
	RCIC Ramp Gen. & Signal Converter Initiation Signal	N/A	Yes	N/A	Yes	HSS-24901A	Sh. 3	
	LSH-25020	N/A	Yes	N/A	Yes	HSS-24901A	Sh. 3	
RCIC Turbine Speed Control Power Supply	Yes	N/A	N/A	Yes	HSS-24902A	Sh. 4		
RCIC Turbine Remote Trip Control Power	Yes	N/A	N/A	Yes	HSS-24902B	Sh. 6		
RHR	HV-E11-2F003A	Yes	Yes	Yes	Yes	HSS-25116A	Sh. 1,2	
	HV-E11-2F004A	Yes	Yes	Yes	Yes	HSS-25114A	Sh. 1,2	
	HV-E11-2F006B	Yes	Yes	Yes	Yes	HSS-25111A	Sh. 3	

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RSP EQUIPMENT ISOLATION SUMMARY - UNIT 2 (Cont'd)

/stem	Component	Isolation Capability			Total Isolation	Transfer Switch	Attach. 2 T.S. Sh. No.	Remarks
		Power Control	Indication					
	HV-E11-2F006A	Yes	Yes	Yes	Yes	HSS-25113B	Sh. 1,2	
	HV-E11-2F006D	Yes	Yes	Yes	Yes	HSS-25111A	Sh. 4	
	HV-E11-2F006C	Yes	Yes	Yes	Yes	HSS-25113B	Sh. 3,4	
	HV-E11-2F007A	Yes	Yes	Yes	Yes	HSS-25115A	Sh. 3,4	
	HV-E11-2F008	Yes	Yes	Yes	Yes	HSS-25112B	Sh. 1,2	
	HV-E11-2F009	Yes	Yes	Yes	Yes	HSS-25113A	Sh. 1,2	
	HV-E11-2F010A	Yes	Yes	Yes	Yes	HSS-25113B	Sh. 4,5	
	HV-E11-2F010B	Yes	Yes	Yes	Yes	HSS-25111B	Sh. 3	
	HV-E11-2F011A	Yes	Yes	Yes	Yes	HSS-25115B	Sh. 5,6	
	HV-E11-2F015A	Yes	Yes	Yes	Yes	HSS-25116A	Sh. 4,5,6	
	HV-E11-2F016A	Yes	Yes	Yes	Yes	HSS-25114A	Sh. 3,4	
	HV-E11-2F017A	Yes	Yes	Yes	Yes	HSS-25114A	Sh. 2,3	
	HV-E11-2F022	Yes	Yes	Yes	Yes	HSS-25113A	Sh. 3,4	
	HV-E11-2F023	Yes	Yes	Yes	Yes	HSS-25111B	Sh. 1,2	
	HV-E11-2F024A	Yes	Yes	Yes	Yes	HSS-25114B	Sh. 3,4	
	HV-E11-2F026A	Yes	Yes	Yes	Yes	HSS-25116A	Sh. 3,4	
	HV-E11-2F027A	Yes	Yes	Yes	Yes	HSS-25114A	Sh. 5	
	HV-E11-2F028A	Yes	Yes	Yes	Yes	HSS-25115A	Sh. 1,2	
	HV-E11-2F040	Yes	Yes	Yes	Yes	HSS-25115A	Sh. 5,6	
	HV-E11-2F047A	Yes	Yes	Yes	Yes	HSS-25115B	Sh. 1,2	
	HV-E11-2F048A	Yes	Yes	Yes	Yes	HSS-25115B	Sh. 3,4	
	HV-E11-2F049	Yes	Yes	Yes	Yes	HSS-25111A	Sh. 1,2	
	HV-E11-2F103A	Yes	Yes	Yes	Yes	HSS-25115B	Sh. 2,3	
	HV-E11-2F104A	Yes	Yes	Yes	Yes	HSS-25116A	Sh. 2,3	
	HV-E11-2F129A	N/A	Yes	N/A	Yes	HSS-25115B	Sh. 5	
	HV-E11-25112	Yes	Yes	Yes	Yes	HSS-25113B	Sh. 2,3	
	PV-E11-2F051A	N/A	Yes	N/A	Yes	HSS-25116B	Sh. 4	
	2P-202A	Yes	Yes	Yes	Yes	HSS-25114B	Sh. 1,2	
	FI-25105/ FI-2N015A	N/A	N/A	Yes	Yes	HSS-25110A	Sh. 1	
	RHR Flow Signal to TMS	N/A	N/A	Yes	Yes	HSS-25110A	Sh. 3	
ESW	OP-504A	Yes	Yes	Yes	Yes	HSS-25117A	Sh. 2,3,4	
	OP-504C	Yes	Yes	Yes	Yes	HSS-25117B	Sh. 2,3,4	

RSP EQUIPMENT ISOLATION SUMMARY - UNIT 2 (Cont'd)

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stem	Component	Isolation Capability			Total Isolation	Transfer Switch	Attach. 2		Remarks
		Power	Control	Indication			T.S.	Sh. No.	
RHRSW	2P-506A	Yes	Yes	Yes	Yes	HSS-25116B HSS-25117A HSS-25117B	Sh. 7 Sh. 6 Sh. 5,6		
	HV-21210A	Yes	Yes	Yes	Yes	HSS-25117A	Sh. 5,6		
	HV-21215A	Yes	Yes	Yes	Yes	HSS-25116B	Sh. 1,2		
	HV-01222A	Yes	Yes	Yes	Yes	HSS-25116B	Sh. 2,3		
	HV-01224A1	Yes	Yes	Yes	Yes	HSS-25117A	Sh. 1,2		
	HV-01224A2	Yes	Yes	Yes	Yes	HSS-25117B	Sh. 1,2		
	FT-2N007A	N/A	N/A	Yes	Yes	HSS-25110A	Sh. 1		
	FI-21207A	N/A	N/A	Yes	Yes	HSS-25110A	Sh. 1		
	HV-2F073A	Yes	Yes	Yes	Yes	HSS-25113A	Sh. 5		
Cont. Inst. Gas	SV-22605	Yes	Yes	Yes	Yes	HSS-25111B	Sh. 4,5		
	HV-22603	Yes	Yes	Yes	Yes	HSS-25114B	Sh. 5,6		
	SV-22651	Yes	Yes	Yes	Yes	HSS-25116B	Sh. 5,6		
MSIV	HV-B21-2F022A	N/A	No	Yes	No	HSS-24901A	Sh. 4,5		
	HV-B21-2F022B	N/A	No	Yes	No	HSS-24901A	Sh. 4,5		
	HV-B21-2F022C	N/A	No	Yes	No	HSS-24901A	Sh. 4,5		
	HV-B21-2F022D	N/A	No	Yes	No	HSS-24901A	Sh. 4,5		
SPM	LI-25776A2	N/A	N/A	Yes	Yes	HSS-25110A	Sh. 2		
	LT-25776A	N/A	N/A	Yes	Yes	HSS-25110A	Sh. 2		
	TI-25751	N/A	N/A	Yes	Yes	HSS-24901A	Sh. 2		
	TI-25752	N/A	N/A	Yes	Yes	HSS-25118A	Sh. 1		
	TI-25725A	N/A	N/A	Yes	Yes	HSS-25110A	Sh. 3		
	TI-25725A	N/A	N/A	Yes	Yes	HSS-25110A	Sh. 3		
CAC	PI-25728A	N/A	N/A	Yes	Yes	HSS-25110A	Sh. 2		
	PT-25728A	N/A	N/A	Yes	Yes	HSS-25110A	Sh. 2		
	TI-25790A2	N/A	N/A	Yes	Yes	HSS-25110A	Sh. 2		
	TI-25790A2	N/A	N/A	Yes	Yes	HSS-25110A	Sh. 2		
RRS	HV-B31-2F023B	Yes	Yes	Yes	Yes	HSS-24905A	Sh. 3,4		
RPV	LI-24262	N/A	N/A	Yes	Yes	HSS-24901A	Sh. 2		
	PI-24262	N/A	N/A	Yes	Yes	HSS-24901A	Sh. 2		

RSP EQUIPMENT ISOLATION SUMMARY - UNIT 2 (Cont'd)

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Item	Component	Isolation Capability			Total Isolation	Transfer Switch	Attach. 2 T.S. Sh. No.	Remarks
		Power	Control	Indication				
SRV	PSV-B21-2F013A	Yes	Yes	No	No	HSS-25113A	Sh. 6	
	PSV-B21-2F013B	Yes	Yes	No	No	HSS-25113B	Sh. 6	
	FSV-B21-2F013C	Yes	Yes	No	No	HSS-25114A	Sh. 6	

NOTE: On Remote Shutdown Panel 2C201, position & bypass indication for each switch is indicated by lights.

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