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U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555-0001

**SUSQUEHANNA STEAM ELECTRIC STATION
SUPPLEMENTAL INFORMATION FOR LICENSE
AMENDMENT REQUEST EXTENDING COMPLETION
TIMES IN SUPPORT OF 480V ESS LOAD CENTER
TRANSFORMER REPLACEMENTS
PLA-7451**

Docket No. 50-388

- References:
1. Letter PLA-7384, "Susquehanna Steam Electric Station [Proposed] Unit 2 Operating License No. NPF-22 Temporary Change to Allow Replacement of the Unit 1 480V ESS Load Center Transformers in Unit 2 Technical Specifications 3.8.7 and 3.7.1," dated January 28, 2016, (Accession ML16029A031).
 2. NRC letter, "Supplemental Information Needed for Acceptance of Requested Licensing Action Re: Proposed Request for Temporary Change of Unit 2 Technical Specifications 3.7.1 and 3.8.7, dated March 24, 2016 (TAC No. MF7298), (Accession ML16060A230).

Susquehanna Nuclear, LLC is providing requested supplemental information for a License Amendment Request (LAR) affecting Susquehanna Steam Electric Station (SSES) Unit 2 Technical Specifications (TS). The proposal (Reference 1) affects TS 3.8.7 "Electrical Power Systems – Distribution Systems – Operating" and TS 3.7.1 "Plant Systems – RHRSW System and UHS." The proposed changes increase the Completion Time for Condition C of TS 3.8.7 and Condition A and B of TS 3.7.1 from 72 hours to 7 days in order to accommodate 480V ESS Load Center Transformer replacements on Unit 1.

Reference 2 requests supplemental information from Susquehanna Nuclear, LLC to support the NRC in reviewing the LAR subject of reference 1, with an opportunity to provide the requested information by April 6, 2016. Attachment 1 provides responses to these requests. Enclosure 1 provides a list of affected equipment for each transformer. Enclosure 2 contains a set of single line diagrams depicting the portion of the Susquehanna AC distribution system involved in this LAR.

Susquehanna Nuclear, LLC has reviewed the information supporting a finding of no significant hazards consideration and the environmental consideration provided to the NRC in Reference 1. The additional information provided by this submittal does not affect the bases for concluding that the proposed license amendment does not involve a

significant hazards consideration. Furthermore, the additional information does not affect the bases for concluding that neither an environmental impact statement nor an environmental assessment need to be prepared in connection with the proposed amendment.

There are no new regulatory commitments associated with this response.

If you have any questions or require additional information, please contact Mr. Jason Jennings, Manager of Nuclear Regulatory Affairs, at (570) 542-3155.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on: APRIL 6, 2016

Sincerely,



J. A. Franke

Attachment 1: Response to Request for Additional Information

Enclosures: 1. Affected Loads Listed by Transformer
2. Applicable Drawings

Copy: NRC Region I
Mr. J. E. Greives, NRC Sr. Resident Inspector
Ms. T. E. Hood, NRC Project Manager
Mr. M. Shields, PA DEP/BRP

Attachment 1 to PLA-7451

**Susquehanna Nuclear, LLC
Supplemental Information Needed for
Acceptance of Requested Licensing Action Re:
Amendment Request for Temporary Change of
Unit 2 Technical Specifications 3.7.1 and 3.8.7**

Response to Request for Additional Information

- 1) The overall plant single line diagram, the electrical single line diagrams of the 4160 volt (V) switchgear and the 480 V LCs are needed to show where the LC transformers 1X210, 1X220, 1X230, and 1X240 are connected. This information enables the NRC staff to verify the list of Unit 2 common loads affected by de-energization with limiting conditions for operating or technical requirements for operations implications provided in Table 1 in the enclosure to the LAR. Including these diagrams in the submittal will enable the NRC staff to understand the affected electrical power distribution system due to the replacement of the LC transformer(s) and to verify the affected common safety-related loads that are being supplied from the four Class 1 E 480V ESS LCs, in addition to the motor control centers (MCCs) mentioned in the Table 1.

Response:

The overall plant single line diagram, E-1 Sh. 1, has been provided in Enclosure 2. The electrical single line diagrams showing where the LC transformers 1X210, 1X220, 1X230, and 1X240 are connected can be seen in drawings E-8 Sh. 4 for Unit 1 and E-8 Sh. 8 for Unit 2.

The copy of drawing E-8 Sh. 8 provided in Enclosure 2 includes an interim drawing change notice (IDCN) issued against the current revision of the drawing. The copy provided is the latest version of this drawing and reflects the plant today.

- 2) In addition, the drawing(s) showing the MCCs (such as 0B517, 1Y216, 1B217, 1Y216, 0527, 1B226, 1B227, and 1Y226) indicated in Table 1 are also needed to enable the NRC staff to make an assessment regarding the reliability of the proposed analysis.

Response:

The drawings showing 480V ESS MCCs connected to the four (4) affected Unit 1 480 V ESS Load Centers are provided in Attachment 2 under the E-9 series drawings. Drawings showing loads affected by 280-120V AC distribution panels listed in Table 1 such as 1Y216 and 1Y226, are provided in Attachment 2 under the E-15 series drawings. An overall plant single line diagram for 280-120V AC distribution panels, E-10 Sh.1, has also been provided.

Drawing E-9 Sh. 43 provided in Attachment 2 has an IDCN issued against it, as seen on page 1 of Attachment 2. The information presented in the copy of E-9 Sh. 43 along with the changes documented in the corresponding IDCN form the latest revision of this drawing and reflects the plant today.

Enclosure 1 to PLA-7451

**Susquehanna Nuclear, LLC
Supplemental Information Needed for
Acceptance of Requested Licensing Action Re:
Amendment Request for Temporary Change of
Unit 2 Technical Specifications 3.7.1 and 3.8.7**

Affected Loads Listed by Transformer

Transformer	1X210 (E-1 sh 1)						
480 V ESS	1B210 (E-8 sh 4)						
Load Center	1B210 (E-8 sh 4)						
480 V MCC or other load	1B217 (Rx Area MCC E-9 sh 45)	1B216 (Rx Area MCC E-9 sh 11)	*1B219 (Rx Area MCC E-9 sh 54)	1B116 (Turb Area MCC E-9 sh 1)	0B517 (ESSW Pump House MCC E-9 sh 40)	*0B516 (Diesel Generator MCC E-9 sh 39)	Spare (5)
Affected Equipment	HV-G33-1F042 Rx Wtr Clean Up Return Iso Vlv E-165 Sh 4	1V208A RCIC Pump Rm Unit Cooler E-220 Sh 1	*1B219 normally powered via 1B210; can be aligned to 1B230 via 1-ATS-219.	1EP01 480/277V Turb Bldg Essential Lighting Panel E-264 Sh 2	0V521A ESW Pump Cooling Fan E-207 Sh 1	*0B516 normally powered via 1B210; can be aligned to 2B210 via 0-ATS-516	
	1EP07 Rx Bldg 480/277V Essential Lighting Panel E-264 Sh 2	1V210A RHR Pump Rm Unit Cooler E-223 Sh 1	HV-E11-1F015A RHR Inject Outboard Iso Vlv E-153 Sh 25	1S106A Rx Fdwtr Pump Turbine Turing Gear E-128 Sh 3	0V521C ESW Pump Cooling Fan E-207 Sh 1	0K507A1 EDG Air Compressor E-259 Sh 8	
	HV-G33-1F104 Rx Wtr Clean Up Bypass Vlv E-165 Sh 4	1V211A Core Spray Pump Rm Unit Cooler E-222 Sh 1	HV-B31-1F031A Rx Recirc Pump Disch Vlv E-151 Sh 10	1S106B Rx Fdwtr Pump Turbine Turing Gear E-128 Sh 3	1V506A RHRSW Pump Cooling Fan E-207 Sh 3	0K507A2 EDG Air Compressor E-259 Sh 8A	
	1V222A Emerg Switchgear Rm Cooler (Fan) E-192 Sh 45	HV-E11-1F010A RHR Cross Hdr Shutoff Vlv E-153 Sh 41	HV-B31-1F032A Rx Recirc Pump Disch Bypass Vlv E-151 Sh 14	1P103A TBCCW Pump E-147 Sh 1	OPP509 480/277V ESSW Pump House Dist Panel E-64 Sh 3	0P514A EDG Fuel Oil Xfer Pump E-257 Sh 1A	
	1C226A Hydrog/Oxyg Analyzer Panel E-267 Sh 2	Spares (2)	HV-E11-1F007A RHR Min Flow Inj Vlv E-153 Sh 26	HV-10513 Condensate Reject Hand Control E-132 Sh 8	2V506A RHRSW Pump Cooling Fan E-207 Sh 5	HV-01110A EDG Cooler in 'B' Loop Supply Vlv E-146 Sh 10	
	HV-B21-1F020 Steam Line Equalizer Vlv E-181 Sh 5	HV-E11-1F004A RHR Pump Suction Vlv E-153 Sh 19	Spare	HV-10514 Condensate Make up and Ctrl E-132 Sh 8	OTS595A RHR Spray Pond Drain Pump transfer switch	0P531A EDG Stby Jacket Water Pump E-259 Sh 2	
	HV-E11-1F016A RHR Containment Spray Outboard Vlv E-153 Sh 95	HV-E11-1F006A RHR Shutdown Cooling Suction Vlv E-153 Sh 20		0EP08 480/277V Circ Wtr Pump House Essent Light Panel E-264 Sh 2	0P595A1/A2 RHR Spray Pond Drain Pumps E-150 Sh 28	HV-01122A EDG Cooler out 'A' Loop Return Vlv E-146 Sh 9A	
	HV-15112 RHR Rx Head Spray Vlv E-153 Sh 113	HV-08693A Ctrl Structure Chill Wtr ESW Ctrl Vlv E-214 Sh 17		1K104 Turb Lo Res Vapor Extractor E-115 Sh 10	HV-01222A RHRSW Spray Pond Bypass Vlv E-150 Sh 32	0P533A EDG Stdbby Lube Oil Pump E-259 Sh 5	
	HV-E11-1F021A RHR Containment Spray Vlv E-153 Sh 29	HV-E11-1F104A RHR Heat Exch. Vent Vlv E-153 Sh 27		1K105 Turb Lo Mist Eliminator E-115 Sh 10	HV-01201A1 RHRSW Spray Pond Drain Vlv E-150 Sh 34	HV-01120A EDG Cooler out 'B' Loop Return Vlv E-146 Sh 10A	
	1C291A Containment Rad Monitor Panel E-267 Sh 5A	Spare		HV-10107 Main Steam Steam Jacket Air Ejector Iso Vlv E-123 Sh 23	HV-01224A1 RHRSW Spray Pond Hdr Vlv E-150 Sh 33	HV-01112A EDG Cooler in 'A' Loop Supply Vlv E-146 Sh 9	
	*HV-08602A Emerg Switchgear Rm Chill Wtr Bypass Vlv E-214 Sh 13	HV-E11-1F028A RHR Containment Spray Vlv E-153 Sh 96		HV-10109 Steam Seal Evap Main Steam Supply E-123 Sh 4A	HV-01224A2 RHRSW Spray Pond Hdr Vlv E-150 Sh 33A	0P532A EDG Pre Lube Pump E-259 Sh 6	
	HV-B21-1F032A Feedwater Inlet Stop Chk Vlv E-181 Sh 3	HV-E11-1F047A RHR Heat Exch. Shell Side Inlet Vlv E-153 Sh 21		1V223 Remote Shutdown Panel Room Fan E-192 Sh 44	0X512 480/240-120V Xfrmr supply to 0C578	0X507 480/277V Xfrmr supply to 0C577A	
	1K205A Containm. Instru Gas Compressor E-258 Sh 6	HV-E11-1F003A RHR Heat Exch. Shell Side Outlet Vlv E-153 Sh 91		HV-10111 Rx Fdwtr Pump Turbine Main Steam Supply Iso Vlv E-123 Sh 4B	0C578 ESSW Pumphouse HVAC Control Panel E-207 Sh 2	0C577A EDG HVAC Panel E-193 Sh 2	
	1S237A Rx Protect Sys MG Set Motor E-157 Sh 1	HV-E11-1F073A RHRSW to RHR Crosstie Vlv E-150 Sh 5		1PP100 480V Turb Bldg Pwr Dist Panel E-64 Sh 2	HV-01201A2 RHRSW Spray Pond Drain Vlv E-150 Sh 34	0E508A EDG Jacket Wtr Heater E-259 Sh 4	
	HV-E21-1F005A Core Spray Inbnd Inject Shutoff Vlv E-155 Sh 3	1X800 SPDS power to 1Y688 E-25 Sh 8		Spare	OLP16 480/277V ESSW Pumphouse Lighting Panel E-264 Sh 11	0E525A EDG Lube Oil Heater E-259 Sh 7	
	HV-E21-1F004A Core Spray Outboard Inject Vlv E-155 Sh 1	Spare	1B216 cntd (E-9 sh 11)			Normal supply to 0X201 Aux Pwr Supp to Xfrmr 101 E-64 Sh 3	
	1P208B Stdbby Liquid Ctrl Inject Pump E-166 Sh 2	HV-E21-1F031A Core Spray Pump Min Flow Bypass Vlv E-155 Sh 2	1E440A Containment Hydrogen Recombiner Elec Heater Assemb			0V512A EDG Vent Supp Fan E-193 Sh 1	
	1D653A 250 VDC ESS A Battery Charger E-26 Sh 1A	HV-E21-1F001A Core Spray Supp. Pool Suction Vlv E-155 Sh 4	1X216 Transformer to 120 VAC Distrib Panel 1Y216 E-25 Sh 1			0E570A EDG Space Htr E-259 Sh 12	
	1X290 480/208-120V Heat Trace Panels Xfrmr E-64 Sh 2	1CBE001 Manual Bypass Switch to 1D241	1Y216 120 VAC Distrib Panel E-10 Sh 1			Norm Supp to 2D613 125 VDC Batt Chgr for U2 E-26 Sh 1B (alt supp port diesel gen)	
	18C290 Stdbby Liquid Ctrl heat trace panel E-64 Sh 2	1X218 Xfrmr to 1D214 E-25 Sh 13	Spare				
	18C291A H2/O2 Analyzer Heat Trace panel E-64 Sh 2	1D241 Alt Power Supp to 1Y218	1P210A Rx Bldg Circ Cooling Wtr Pump E-147 Sh 13			0P530A EDG Jacket Wtr Circ Pump E-259 Sh 3	
	*HV-08603A Emerg Switchgear Rm Chill Wtr Supply Vlv E-214 Sh 13	1C159A Turb Bldg Stack Vent Vacuum Pump E-204 Sh 10	HV141F021 Main Stm Line Drain to Condenser (via 1B262062) E-9 Sh 13			Norm Supp to 1D613 125 VDC Batt Chgr for U1 E-26 Sh 1 (alt supp port diesel gen)	
	1C216A Rx Bldg Stack Vent Vacuum Pump E-204 Sh 10	HV-E11-1F017A RHR Inject Outbrd Iso Vlv E-153 Sh 24	HV-14182A Rx Wtr Clean Up Disch Iso Vlv E-165 Sh 19			Alt Pwr Supp to 0X213 Aux Pwr Supp to ESS Xfrmr 211 E-64 Sh 3	
	Spare	1C215A Hydrog Recombiner Pwr Supp Panel E-187 Sh 1	HV-14182B Rx Wtr Clean Up Disch Iso Vlv E-165 Sh 20				
	0V201A Rx Bldg Recirc Fan E-192 Sh 7						
	Spares (4)						

*HV-08602A and HV-08603A Emerg Switchgear Rm Wtr Valves are electrically disabled.

Transformer		1X220 (E-1 sh 1)						
480 V ESS Load Center		1B220 (E-8 sh 4)						
480 V MCC or other load	1B227 (Rx Area MCC E-9 sh 45)	1B226 (Rx Area MCC E-9 sh 12)	*1B229 (Rx Area MCC E-9 sh 54)	1B126 (Turb Area MCC E-9 sh 1)	0B527 (ESSW Pump House MCC E-9 sh 40)	*0B526 (Diesel Generator MCC E-9 sh 41)	1K107A (U1 Instr Air Compressor E-258 Sh 1)	Spares (4)
Affected Equipment	HV-B21-1F032B Feedwater Inlet Stop Chk Vlv E-181 Sh 3	1V211B Core Spray Pump Rm Unit Cooler E-222 Sh 1A	*1B229 normally powered through ISO Swing Bus MG Set (1G203/1S247/1C247) from 1B220; can be aligned to 1B240 via 1-ATS-229.	1P109D Turbine Generator Bearing Lift Pump E-115 Sh 11	0V521B ESW Pump Cooling Fan E-207 Sh 1	*0B526 normally powered via 1B220; can be aligned to 2B220 via 0-ATS-526		
	Spare	1EP03 480/277V Rx Bldg Essential Lighting Panel E-246 Sh 2		1P109E Turbine Generator Bearing Lift Pump E-115 Sh 11	0V521D ESW Pump Cooling Fan E-207 Sh 1	0K507B1 EDG Air Compressor E-259 Sh 8B		
	1C226B Hyd/Oxyg Analyzer Panel E-267 Sh 2	HV-E11-1F004B RHR Pump Suction Vlv E-153 Sh 10	HV-E11-1F015B RHR Inject Outboard Iso Vlv E-153 Sh 16	1P109F Turbine Generator Bearing Lift Pump E-115 Sh 11	1V506B RHRSW Pump Cooling Fan E-207 Sh 3	0K507B2 EDG Air Compressor E-259 Sh 8C		
	HV-E21-1F004B Core Spray Outboard Inj Vlv E-155 Sh 1	HV-E21-1F031B Core Spray Min Flow Bypass Vlv E-155 Sh 2	HV-B31-1F031B Rx Recirc Pump Disch Vlv E-151 Sh 10	1P109C Turbine Generator Bearing Lift Pump E-115 Sh 11	0PP511 ESW Pump House Dist Panel E-264 Sh 11	0P514B EDG Fuel Oil Xfer Pump E-257 Sh 1B		
	HV-E21-1F005B Core Spray Inbrd Inj Shutoff Vlv E-155 Sh 3	HV-E11-1F016B RHR Containment Spray Outboard Vlv E-153 Sh 114	HV-B31-1F032B Rx Recirc Pump Disch Bypass Vlv E-151 Sh 14A	1P109G Turbine Generator Bearing Lift Pump E-115 Sh 11	2V506B RHRSW Pump Cooling Fan E-207 Sh 5	HV-01110B EDG Cooler in 'B' Loop Supply Vlv E-146 Sh 10B		
	PV-C12-1F003 Control Rod Drive Water Pressure Throttle Vlv E-169 Sh 4	1X226 480/208-120V Xfrmr to 1Y226 E-25 Sh 1	HV-E11-1F007B RHR Min Flow Inj Vlv E-153 Sh 93	1P109H Turbine Generator Bearing Lift Pump E-115 Sh 11	0TS595B RHR Spray Pond Drain Pump transfer switch	0P531B EDG Stby Jacket Water Pump E-259 Sh 2		
	HV-E11-1F021B RHR Containment Spray Vlv E-153 Sh 29	1Y226 120V Inst AC Dist Panel E-10 Sh 1	Spare (2)	1P109J Turbine Generator Bearing Lift Pump E-115 Sh 11	0P595B1/B2 RHR Spray Pond Drain Pumps E-150 Sh 28	HV-01122B EDG Cooler out 'A' Loop Return Vlv E-146 Sh 9C		
	1EP08 480V/277V Rx Bldg Essential Lighting Panel E-264 Sh 2	HV-E11-1F028B RHR Flow to Supp Pool Vlv E-153 Sh 12		1P109A Turbine Generator Bearing Lift Pump E-115 Sh 11	HV-01222B RHRSW Spray Pond Bypass Vlv E-150 Sh 4	0P533B EDG Stdbby Lube Oil Pump E-259 Sh 5		
	*HV-08601B Emerg Switchgear Rm Chill Wtr Return Vlv E-214 Sh 13	HV-E11-1F047B RHR Heat Exch Disch Vlv E-153 Sh 107		1P109B Turbine Generator Bearing Lift Pump E-115 Sh 11	HV-01201B1 RHRSW Spray Pond Drain Vlv E-150 Sh 34	HV-01120B EDG Cooler out 'B' Loop Return Vlv E-146 Sh 10C		
	1D663 250 VDC ESS Battery Charger E-26 Sh 1A	Spare (2)		1S106C Rx Feedwtr Pump Turbine Turning Gear E-128 Sh 3	HV-01224B1 RHRSW Spray Pond Hdr Vlv E-150 Sh 8	HV-01112B EDG Cooler in 'A' Loop Supply Vlv E-146 Sh 9B		
	Spare	HV-08693B Ctrl Structure Chilled Wtr ESW Ctrl Vlv E-214 Sh 21		Spare	HV-01224B2 RHRSW Spray Pond Hdr Vlv E-150 Sh 8A	0P532B EDG Pre Lube Pump E-259 Sh 6		
	1V222B Emerg Switchgear Rm Cooler (Fan) E-192 Sh 8	Spare	1B226 cntd (E-9 sh 12)	1P103B Turb Bldg Closed Cooling Wtr E-147 Sh 1	0X513 480/240-120V Xfrmr supply to 0C579	0X508 480/240-120V Xfrmr to 0C577B		
	1S237B Rx Protect Sys MG Set Motor E-157 Sh 1	HV-E21-1F001B Core Spray Pool Suction Vlv E-155 Sh 4	1C142B Instrum Air Dryer Panel B E-258 Sh 2C	1EP02 480/277V Turb Bldg Essential Lighting Panel E-264 Sh 2	0C579 ESSW Pumphouse HVAC Control Panel E-207 Sh 4	0E525B EDG Lube Oil Heater E-259 Sh 7		
	Spares (2)	Spare (2)	HV-E11-1F104B RHR Heat Exch Vent Vlv E-153 Sh 94	1P111 Turbine Generator Turning Gear Oil Pump E-115 Sh 6	HV-01201B2 RHRSW Spray Pond Drain Vlv E-150 Sh 34	0E508B EDG Jacket Wtr Heater E-259 Sh 4		
	1C291B Containment Rad Monitoring Sys Panel E-267 Sh 5B	HV-E11-1F003B RHR Heat Exch Discharge Vlv E-153 Sh 11	1X128 480/208-120V Xfrmr to 1D131 E-25 Sh 13	1S103 Main Turning Gear Motor		Normal Pwr Supp to 0X203 Aux Supp to ESS Xfrmr 201 E-64 Sh 3		
	Spare	1X801 SPDS Power Supply E-25 Sh 8	1D131 120V Instrum AC UPS	1S104 Turbine Generator Piggy Back Motor E-115 Sh 9		0V512B EDG Vent Supp Fan E-193 Sh 1A		
	0V201B Rx Bldg Recirc Fan E-192 Sh 7	HV-E11-1F010B RHR Cross Hdr Shutoff Vlv E-153 Sh 112	1Y128 Alt Pwr Supp 120V Instr AC UPS			0E570B EDG Space Htr E-259 Sh 12		
	Spares (8)	1V209A HPCI Pump Room Unit Cooler E-221 Sh 1	HV-E11-1F006B RHR Shutdown Cooling Pump Suction Vlv E-153 Sh 36			Norm Supp to 2D623 125 VDC Batt Chgr for U2 E-26 Sh 1B (alt supp port diesel gen)		
		1V210B RHR Pump Room Unit Cooler E-223 Sh 3	1C215B Hydrog Recombiner Pwr Supp Panel			0P530B EDG Jacket Wtr Circ Pump E-259 Sh 3		
		Spare	1E440B Containment Hydrog Recombiner Elec Heater E-187 Sh 1			Norm Supp to 1D623 125 VDC Batt Chgr for U1 E-26 Sh 1 (alt supp port diesel gen)		
		HV-E11-1F017B RHR Flow to RPV Vlv E-153 Sh 14	Spares (8)			Norm Pwr Supp to 0X211 Aux Supply to ESS Xfrmr 111 E-64 Sh 3		

*HV-08601B Emerg Switchgear Rm Wtr Valve electrically disabled.

Transformer	1X230 (E-1 sh 1)						
480 V ESS Load Center	1B230 (E-8 sh 4)						
480 V MCC or other load	1B237 (Rx Area MCC E-9 sh 9)	1B236 (Rx Area MCC E-9 sh 19)	*1B219 (Rx Area MCC E-9 sh 54)	0B136 (Ctrl Struct H&V Rm MCC E-9 sh 37)	*0B536 (Diesel Gen MCC E-9 sh 43)	0E145A (Control Structure A/C Unit Heater E-242 Sh 5)	Spare
Affected Equipment	HV-11210A RHR Heat Exchr Serv Wtr Inlet Vlv E-150 Sh 10	1V413A Drywell Area Unit Cooler Fan E-224 Sh 1	*1B219 normally powered via 1B210; can be aligned to 1B230 via 1-ATS-219. See loads under 1B210.	0V109A Stby Gas Trtment fan E-201 Sh 5	*0B536 normally powered via 1B230; can be aligned to 2B230 via 0-ATS-536		
	HV-11215A RHR Heat Exchr Serv Wtr Outlet Vlv E-150 Sh 9	1K205B Containment Instrum Gas compressor E-258 Sh 6		Spare	OK507C1 EDG Air Compressor E-259 Sh 8D		
	HV-15766 Containment Atmos. Ctrl Isolation Vlv E-171 Sh 5	1V417A Drywell Area Unit Cooler Fan E-224 Sh 1		0V115A Control and Computer Room Flr A/C Unit Fan A E-229 Sh 1	OK507C2 EDG Air Compressor E-259 Sh 8E		
	HV-E11-1F103A RHR Heat Exchr Vent Vlv E-153 Sh 27	HV-E11-1F027A RHR containment spray E-153 h 28		0P170A Control Structure Chill Wtr Circ Pump E-214 Sh 5	0P514C EDG Fuel Oil Xfer Pump E-257 Sh 10		
	HV-E11-1F075A RHRSW Crosstie Vlv E-150 Sh 5	HV-12603 Containment Instru Gas Compressor Suction Iso Vlv E-172 Sh 2		0V117A Control and Computer Room Flr A/C Unit Fan A E-229 Sh 4	HV-01110C EDG Cooler in 'B' Loop Supply Vlv E-146 Sh 10D		
	HV-E11-1F024A RHR Test Line Vlv E-153 Sh 23	1V412A Drywell Area Unit Cooler Fan E-224 Sh 1		0EP01 480/277V Essential lighting Panel for Ctrl Structure	0P531C EDG Stby Jacket Water Pump E-259 Sh 2		
	HV-E11-1F006C RHR Shutdown Cooling Suction Vlv E-153 Sh 20	1V414A Drywell Area Unit Cooler Fan E-224 Sh 1		0TS601 Trsfr Switch to 0EP01; norm from 0B136, alt from 0B146/Portable DG	HV-01122C EDG Cooler out 'A' Loop Return Vlv E-146 Sh 9E		
	HV-E11-1F004C RHR Pump Suction Vlv E-153 Sh 19	1V411A Drywell Area Unit Cooler Fan E-224 Sh 1		0E144A Stby Gas Trtment Equip Rm Htr Coil E-242 Sh 4	0P533C EDG Stdbby Lube Oil Pump E-259 Sh 5		
	HV-E11-1F048A RHR Heat Exch. Shell Side Bypass Vlv E-153 Sh 18	1V416A Drywell Area Unit Cooler Fan E-224 Sh 1		0E143A Control room Emerg Fresh Air Htr Coil E-197 Sh 5	HV-01120C EDG Cooler out 'B' Loop Return Vlv E-146 Sh 10E		
	Spare	HV-E11-1F009 RHR Pump Suction Shutoff Vlv E-153 Sh 17		0S108 Ctrl Structure Passenger Elevator E-64 Sh 3	HV-01112C EDG Cooler in 'A' Supply Vlv E-146 Sh 9D		
	HV-B31-1F023A Recirc Pump Suction Vlv E-151 Sh 9	HV-G33-1F001 Rx Wtr Cleanup Inbrd Iso Vlv E-165 Sh 6		0V116A Battery Room Exhaust fan E-198 Sh 1	0P532C EDG Pre Lube Pump E-259 Sh 6		
	1V208B RCIC Pump Cooler E-220 Sh 3	1D240 120V Instrument AC UPS E-25 Sh 13		0V103A Control room A/C Unit Fan E-197 Sh 2	0X509 480/240-120V Xfrmr to 0C577C		
	1V211C Core Spray Pump Rm Unit Cooler E-222 Sh 1B	HV-E11-1F040 RHR Disch to Radwaste Outbrd Iso Vlv E-153 Sh 16		0P162A Ctrl Struct Chill Wtr Circ Pump E-214 Sh 4	0C577C DG HVAC Panel E-193 Sh 20		
	1V210C RHR Pump Rm Unit Cooler E-223 Sh 1	1E219 Stdbby Liquid Ctrl Heater A E-166 Sh 3		0V101A Control Rm Emerg Outside Air Supp Fan E-197 Sh 1	0E525C EDG Lube Oil Heater E-259 Sh 7		
	Spares (2)	HV-C41-1F006 Stdbby Liquid Ctrl Inject Vlv E-166 Sh 4	1B236 cntd (E-9 sh 19)	0P171A Ctrl Struct Chiller Emerg Condenser Pump E-214 Sh 6	0E508C EDG Jacket Wtr Heater E-259 Sh 4		
	HV-B21-1F016 Main Strm Line Drain Inbrd Iso Vlv E-170 Sh 2	1D653B 250 VDC ESS Batt Charger E-26 Sh 1	HV-11313 RBCCW Containment Iso Vlv E-147 Sh 4	0V118A Stby Gas Trtment Equip Rm Exh Fan E-202 Sh 1	Alt Pwr Supp to 0X201 Aux Supp to ESS Xfrmr 101 (norm 0B516) E-9 Sh 39		
	HV-E11-1F022 Rx Head Spray Shutoff Inbrd Vlv E-153 Sh 37	Spare	HV-B21-1F001 Rx Head Vent Vlv E-181 sh 1	Spare	0V512C EDG Supply Fan E-193 Sh 1B		
	HV-E21-1F015A Test Line to Supp Pool E-155 Sh 5	1P208A Stdbby Liquid Ctrl Inject Pump E-166 Sh 1	1E440C Containment H2 Recomb Elec Htr E-187 Sh 1	0V144A Stby Gas Trtment Equip Rm Fan E-202 Sh 2	0E570C EDG Space Heater E-259 Sh 12		
	HV-E41-1F002 HPCI Steam Supp Inbrd Iso Vlv E-150 Sh 16	1V415A Drywell Area Unit Cooler Fan E-224 Sh 1	1E220 Stdbby Liq Ctrl Heater B E-166 Sh 3	0C886A Stby Gas Trtment Syst Ctrl Panel E-242 Sh 3	2D633 125 VDC Battery Charger Unit 2 E-26 Sh 1B		
	Spares (2)	HV-11314 RBCCW Containment Iso Vlv E-147 Sh 3	1D656 Computer Power Supply Inverter E-25 Sh 3	0P122A Ctrl Struc Chiller Oil Pump E-214 Sh 3	0P530C EDG Jacket Wtr Circ Pump E-259 Sh 3		
	1P210B RBCCW Pump E-147 Sh 2	1X236 480-208/120V Xfrmr to 1Y236	*HV-08601A Emerg. Switchgear Rm Chill Wtr Return Vlv E-214 Sh 13	OK115A Ctrl Struc Chiller Pumpout Compressor E-214 Sh 3	1D633 125VDC Battery Charger for Unit 1 E-26 Sh 1		
	Spares (2)	1Y236 208/120V Instrum AC Dist Panel E-10 Sh 1	1V418A Drywell CRD Area Cooling Fan E-224 Sh 11	Spare	Normal Pwr Supp for 0X213 Aux Supply to ESS Xfrmr 211 E-64 Sh 3		

*HV-08601A Emerg Switchgear Rm Wtr Valve electrically disabled.

Transformer	1X240 (E-1 sh 1)						
480 V ESS Load Center	1B240 (E-8 sh 4)						
480 V MCC or other load	1B247 (Rx Area MCC E-9 sh 10)	1B246 (Rx Area MCC E-9 sh 20)	*1B229 (Rx Area MCC E-9 sh 54)	0B146 (Ctrl Struct H&V Rm MCC E-9 sh 38)	0B546 (Diesel Gen MCC E-9 sh 44)	0E145B (Control Structure A/C Unit Heater E-242 Sh 5)	1K107B (Unit 1 Instrument Air Compressor E-258 Sh 1)
Affected Equipment	HV-11210B RHR Heat Exch Serv Wtr Inlet Iso Vlv E-150 Sh 11	HV-B31-1F023B Rx Recirc Pump Suction E-151 Sh 8	*1B229 normally powered via 1B220; can be aligned to 1B240 via 1-ATS-229. See loads under 1B220.	Spare	*0B546 normally powered via 1B240; can be aligned to 2B240 via 0-ATS-546		
	HV-11215B RHR Heat Exch Serv Wtr Outlet Iso Vlv E-150 Sh 12	HV-11345 RBCCW Containment Iso Vlv E-147 Sh 15		0C886B Standby Gas Treatment System Control Panel E-242 E3	0K507D1 EDG Air Compressor E-259 Sh 8F		
	Spare	HV-E11-1F048B RHR Heat Exch Bypass E-153 Sh 9		0V118B Standby Gas Treatment System Equip Rm Exh Fan E-202 Sh 6	0K507D2 EDG Air Compressor E-259 Sh 8G		
	1V112D Core Spray Pump Room Unit Cooler E-222 Sh 1C	HV-E51-1F007 RCIC Inboard Steam Line E-154 Sh 4		0V101B Control Structure Emerg Outside Air Supply Fan E-197 Sh 1	0P514D EDG Fuel Oil Xfer Pump E-257 Sh 1		
	1V210D RHR Pump Room Unit Cooler E-223 Sh 1	1X246 480/208-120V Xfrmr to 1Y246		Spare	HV-01110D EDG Cooler in 'B' Loop Supply Vlv E-146 Sh 10F		
	1V209B HPCI Pump Room Unit Cooler E-221 Sh 1	1Y246 208/120VAC Instrum AC Distribution Panel E-10 Sh 1		Stdby Gas Trtmt Sys Stack Vent Pump 0P560 and Panel 0C539A E-204 Sh 10	0P531D EDG Stby Jacket Water Pump E-259 Sh 2		
	1C142A Instrum Air Dryer Panel E-258 Sh 2B	*HV-08602B Emerg Switchgear Rm Wtr Bypass Vlv E-214 Sh 26		0V116B Battery Room Exh Fan E-198 Sh 4	HV-01122D EDG Cooler out 'A' Loop Return Vlv E-146 Sh 9G		
	Spares (2)	1C215D Hydrog Recombiner Pwr Supp Panel		0P170B Control Structure Chill Condenser Wtr Circ Pump E-214 Sh 5	0P533D EDG Stdbby Lube Oil Pump E-259 Sh 5		
	HV-E11-1F103B RHR Heat Exch Vent Vlv E-153 Sh 94	1E440D Containment Hydrog Recomb Elec Heater Assemb E-187 Sh 1		Spare	HV-01120D EDG Cooler out 'B' Loop Return Vlv E-146 Sh 10G		
	HV-E11-1F073B RHRSW to RHR Crosstie Vlv E-150 Sh 29	1D130 120V Inst AC UPS E-25 Sh 13		0V115B Control & Computer Rm Floor HVAC Fan E-229 Sh 3	HV-01112D EDG Cooler in 'A' Supply Vlv E-146 Sh 9L		
	HV-E11-1F004D RHR Pump Suction Vlv E-153 Sh 19	*HV-08603B Emerg Switchgear Rm Wtr Supp Vlv E-214 Sh 27		0P162B Control Struc Chill Wtr Circ Pump E-214 Sh 19	0P532D EDG Pre Lube Pump E-259 Sh 6		
	HV-E11-1F024B RHR Flow to Supp Pool E-153 Sh 13	1V417B Drywell Area Unit Cooler Fan E-224 Sh 1		0V117B Control & Computer Rm Floor HVAC Fan E-229 Sh 5	0X510 480/240-120V Xfrmr to 0C577D		
	HV-E11-1F075B RHRSW to RHR Crosstie Vlv E-150 Sh 5	HV-E11-1F027B RHR Containment Spray E-153 Sh 115		0E143B Control Rm Emerg Fresh Air Heating Coil E-197 Sh 5	0C577D DG HVAC Panel E-193 Sh 2D		
	HV-E11-1F006D RHR Shutdown Cooling Suction E-153 Sh 20	Spare		0V103B Control Rm AC Unit Fan E-197 Sh 13	0E525D EDG Lube Oil Heater E-259 Sh 7		
	HV-E21-1F015B Core Spray Test Return to Supp Pool E-155 Sh 5	1V414B Drywell Area Unit Cooler E-224 Sh 1		1EP05 480/277V Turb Bldg Essential Lighting Panel E-264 Sh 2	0E508D EDG Jacket Wtr Heater E-259 Sh 4		
	Spare (5)	HV-11346 RBCCW Containment Iso Vlv E-147 Sh 14		0E144B Stdbby Gas Trtmt Equip Rm Heating Coil E-242 Sh 4	Alt Pwr Supp to 0X203 Aux Supp to ESS Xfrmr 201 (norm 0B526) E-9 Sh 41		
		1EP04 Rx Bldg Essential Lighting Panel E-264 Sh 2		0P171B Control Struct Emerg Cond Wtr Circ Pump E-214 Sh 20	0V512D EDG Supply Fan E-193 Sh 1C		
		1V415B Drywell Area Unit Cooler E-224 Sh 1		0V144B Stdbby Gas Trtmt Equip Rm Unit Fan E-202 Sh 2	0E570D EDG Space Heater E-259 Sh 12		
		Spare		0K115B Pumpout compressor for Ctrl Struc Chill E-214 Sh 3	2D643 125 VDC Battery Charger D for Unit 2 E-26 Sh 1		
		1V416B Drywell Area Unit Cooler Fan E-224 Sh 1	1B246 cntd (E-9 sh 20)	0P122B Chiller 0K112B Oil Pump E-214 Sh 3	0P530D EDG Jacket Wtr Circ Pump E-259 Sh 3		
		1D666 Vital AC Power Supply E-25 Sh 3	1V413B Drywell Area Unit Cooler Fan E-224 Sh 1	0X604 480/240-120V Xfrmr to 0Y604 E-25 Sh 23	1D643 125VDC Battery Charger D for Unit 1 E-26 Sh 1		
		Spare	1V412B Drywell Area Unit Cooler Fan E-224 Sh 1	0Y604 240/120V Distribution Panel E-64 Sh 48	Alt Pwr Supp to 0X211 Aux Supp to ESS Xfrmr 111 (norm 0B526) E-9 Sh 41		
		1V411B Drywell Area Unit Cooler Fan E-224 Sh 1	HV-B21-1F002 Rx Head Vent Vlv E-181 Sh 1	0EP02 480/277V Control Struct Emerg Lighting Panel E-264 Sh 2			
		1X291B 480/208-120V Heat Trace Dist Xfrmr	HV-B21-1F005 Rx Head Vent Vlv E-181 Sh 1	0TS602 Tranf switch to 0X604, 0Y604, 0EP02; norm from 0B146, alt from 0B136			
		1BC291B H2/O2 Analyzer & CRM-B Heat Trace Panel E-64 Sh 1	1V418B Drywell CRD Area Cooling Fan E-224 Sh 11	0V109B Stby Gas Trtmt fan E-201 Sh 5			
		Spare	15204 Rx Bldg Service Elev E-64 Sh 1	Spare			

*HV-08602B and HV-08603B Emerg Switchgear Rm Wtr Valves are electrically disabled.