Oyster Creek Oct. 2 - 9, 2006 Operator Licensing Exam Handouts

Reactor Vessel Level/Pressure/Temperature Instruments Flow Diagram, Drawing No. GE 148F712, Rev. 45

3.4 EMERGENCY COOLING

Applicability: Applies to the operating status of the emergency cooling systems.

Objective: To assure operability of the emergency cooling systems.

Specifications:

in

A. Core Spray System

NOTE: LCO 3.0.C.2 is not applicable to the Core Spray System

1. The Core Spray System shall be OPERABLE at all times with irradiated fuel in the reactor

vessel with an absorption chamber water volume of at least 82,000 ft³ except as specified Table 3.4.1, or as noted below.

2. If Specification 3.4.A.1 is not met the reactor shall be PLACED IN the COLD SHUTDOWN CONDITION and no work shall be performed on the reactor or its connected systems which could result in lowering the reactor water level to less than 4'8" above TOP OF ACTIVE FUEL.

Table	3.4.1
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Condition	Requirement	Provided:
Any active loop component becomes inoperable. -OR-	The Reactor may remain in operation for a period not to exceed 15 Days.	Both Emergency Diesel Generators are OPERABLE.
Two or more active loop components in the same loop (System 1 or System 2) are inoperable provided no two components are redundant.		The Redundant active loop components within the same loop as the inoperable components are verified OPERABLE on a daily basis.
		Specification 3.4.A.3 is met unless only a core spray booster pump is inoperable.
One Emergency Diesel Generator is inoperable.	The Reactor may remain in operation for a period not to exceed 7 Days. (Refer to Section 3.7.C.2)	All core spray equipment connected to the OPERABLE emergency diesel generator is OPERABLE.

Amendment No.: 75, 153, 167, 211, 241, 247 Corrected by letter of 10/13/04

OYSTER CREEK

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-15 - 1 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2	Condition	Requirement	Provided:		
	Condition	Requirement			
	One core spray loop (System 1 or System 2) or its core spray	The Reactor may remain in operation for a period not to exceed	Both Emergency Diesel Generators are OPERABLE.		
	header delta-P instrumentation becomes inoperable. -OR- Both of the redundant components in a loop (System 1 or System 2) are inoperable.	7 Days.	The remaining loop (System 1 or System 2) has no inoperable components and is verified daily to be OPERABLE.		
	Two of the four redundant	The Reactor may remain in	Specification 3.4.A.3 is met. Both Emergency Diesel		
	active loop components in the core spray system not in the	operation for a period not to exceed 7 Days.	Generators are OPERABLE.		
	same loop (System 1 or System 2) are inoperable.	i Days.	The Redundant active loop components within the same		
	-OR- Two or more non-redundant		loop as the inoperable components are verified OPERABLE on a daily basis.		
	active loop components are inoperable in both loops (System 1 and System 2).		Specification 3.4.A.3 is met.		
	Shutdown or Refuel Mode				
	Condition	Requirement	Provided:		
	Maintenance or modifications of core spray systems, their power supplies, or water	Maintain reduced core spray system availability as follows:	The Reactor is maintained in the COLD SHUTDOWN CONDITION or in the REFUEL MODE with the		
	supplies.	1.At least one core spray pump, and	reactor coolant system		
		system components necessary to deliver rated core spray to the reactor vessel, must remain	maintained at less than 212°F and vented.		
		OPERABLE to the extent the pump and any necessary valves can be started or operated from the control	-AND-		
		room or from local control stations.	No work is performed on the reactor vessel and connected		
		2. The Fire protection system is OPERABLE to the extent that one diesel driven fire pump is capable of providing water to the core spray system.	systems that could result in lowering the reactor water level to less than 4'8" above the TOP OF ACTIVE FUEL.		
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Amendment No.: 75, 153, 167, 211, 231, 247

Shutdown or Refuel Mode				
Condition	Requirement	Provided:		
Maintenance or modifications of core spray systems, their power supplies, or water supplies while work is in progress having the potential to lower reactor water level below 4'8" TAF. -OR- The Reactor is in the startup mode for low power physics testing.	 Maintain reduced core spray system availability as follows: 1.At least one core spray pump in each loop, and system components necessary to deliver rated core spray to the reactor vessel, must remain OPERABLE to the extent that the pump and any necessary valves in each loop can be started or operated from the control room or from local control stations. 2.Fire protection system is OPERABLE to the extent that one diesel driven fire pump is capable of providing water to the core spray system. 3.Verify the systems in 1 & 2 above are OPERABLE every 72 hours. 	The Reactor is: In the REFUEL MODE with the reactor coolant system maintained at less than 212°F -OR- In the STARTUP MODE for the purpose of low power physics testing.		
The requirements for maintenance or modification	Initiate work to meet the requirements.	Specification 3.4.A.2 is met.		

- 3. In the event of inoperable active loop components the APLHGR of all the rods in any fuel assembly, as a function of average planar exposure, at any axial location shall not exceed 90% of the limits given in Specification 3.10.A. The action to bring the core to 90% of the APLHGR Limits must be completed within two hours after the component has been determined to be inoperable.
- 4. The core spray system is not required to be operable when the following conditions are met:
 - a. The reactor mode switch is locked in the "Refuel" or "Shutdown" position.
 - b. (1) There is an operable flow path capable of taking suction from the condensate storage tank and transferring water to the reactor vessel, and
 - (2) The fire protection system is OPERABLE to the extent that one diesel driven fire pump is capable of providing water to the core spray system, and
 - (3) These systems are verified to be OPERABLE on a weekly basis.

OYSTER CREEK	3.4-3	Amendment No.: 75, 153, 167,
		211, 231, 247
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с.	The reactor coolant system is maintained at less than 212 °F and vented (except during reactor vessel pressure testing).
d.	At least one core spray pump, and system components necessary to deliver rated core spray flow to the reactor vessel, must remain operable to the extent that the pump and any necessary valves can be started or operated from the control room or from local control stations, and the torus is mechanically intact. Verify the pump and components are OPERABLE, as described, on a weekly basis.
e.	(1) No work shall be performed on the reactor or its connected systems which could result in lowering the reactor water level to less than 4'8" above the TOP OF the ACTIVE FUEL and there is a minimum of 360,000 gallons of water available between the torus and condensate storage tank water inventories. At least two redundant core spray systems including core spray pumps and system components must remain operable as defined in d. above. At least one recirculation loop discharge valve and its associated suction valve shall be in the full open position. Verify the pumps and components are OPERABLE, as described, on a weekly basis.
	OR
	(2) The reactor vessel head, fuel pool gate, and separator-dryer pool gates are removed and the water level is above elevation 117 feet. When filling or draining the reactor cavity, a sufficient water inventory (between the condensate storage tank and the reactor cavity) to complete the flooding operation shall be maintained. The 360,000 gallons of water minimum requirement in (1) above does not apply during the filling and draining operation provided there is a sufficient amount of water to complete the flooding operation.

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3.4-4 Amendment No.: 75, 120, 153, 199, 204, 247

B. <u>Automatic Depressurization System</u>

B	·· · · ·	
	1.	Five electromatic relief valves, which provide the automatic depressurization and pressure relief functions, shall be operable when the reactor water temperature is greater than 212°F and pressurized above 110 psig, except as specified in 3.4.B.2 and during Reactor Vessel Pressure Testing consistent with Specifications 1.39 and 3.3.A.(i).
	2.	If at any time there are only four operable electromatic relief valves, the reactor may remain in operation for a period not to exceed 3 days provided the motor operated isolation and condensate makeup valves in both isolation condensers are verified daily to be operable.
	3.	If Specifications 3.4.B.1 and 3.4.B.2 are not met; reactor pressure shall be reduced to 110 psig or less, within 24 hours.
	4.	The time delay set point for initiation after coincidence of low-low-low reactor water level and high drywell pressure shall be set not to exceed two minutes.
C	с. <u>Сс</u>	ontainment Spray System and Emergency Service Water System
		NOTE: LCO 3.0.C.2 is not applicable to the Containment Spray System and Emergency Service Water System
	1.	The containment spray system and the emergency service water system shall be operable at all times with irradiated fuel in the reactor vessel, except as specified in Specifications 3.4.C.3, 3.4.C.4, 3.4.C.6 and 3.4.C.8.
en e	2.	The absorption chamber water volume shall not be less than $82,000$ ft ³ in order for the containment spray and emergency service water system to be considered operable.
	3.	
	4.	If a pump in the containment spray system or emergency service water system becomes inoperable, the reactor may remain in operation for a period not to exceed 15 days provided the other similar pump is verified daily to be operable. A maximum of two pumps may be inoperable provided the two pumps are not in the same loop. If more than two pumps become inoperable, the limits of Specification 3.4.C.3 shall apply.
	5.	During the period when one diesel is inoperable, the containment spray loop and emergency service water system loop connected to the operable diesel shall have no inoperable components.

	6.	If primary containment integrity is not required (see Specification 3.5.A), the containment spray system may be made inoperable.
	7.	If Specifications 3.4.C.3, 3.4.C.4, 3.4.C.5 or 3.4.C.6 are not met, the reactor shall be placed in cold shutdown condition. If the containment spray system or the emergency service water system becomes inoperable, the reactor shall be placed in the cold shutdown condition and no work shall be performed on the reactor or its connected systems which could result in lowering the reactor water level to less than 4'8" above the top of the active fuel.
	8.	The containment spray system may be made inoperable during the integrated primary containment leakage rate test required by Specification 4.5, provided that the reactor is maintained in the cold shutdown condition and that no work is performed on the reactor or its connected systems which could result in lowering the reactor level to less than 4'8" above the top of the active fuel.
D.	<u>Contro</u>	l Rod Drive Hydraulic System
	1.	The control rod drive (CRD) hydraulic system shall be operable when the reactor water temperature is above 212°F except as specified in 3.4.D.2 and 3.4.D.3 below.
	2.	If one CRD hydraulic pump becomes inoperable when the reactor water temperature is above 212°F, the reactor may remain in operation for a period not to exceed 7 days provided the second CRD hydraulic pump is operating and is checked at least once every 8 hours. If this condition cannot be met, the reactor water temperature shall be reduced to less than 212°F.
	3.	During reactor vessel pressure testing, at least one CRD pump shall be operable.
E.	Core S	pray and Containment Spray Pump Compartments Doors
	except	re spray and containment spray pump compartments doors shall be closed at all times during passage in order to consider the core spray system and the containment spray operable.
F.	Fire Pr	otection System
	ì.	The fire protection system shall be operable at all times with fuel in the reactor vessel except as specified in Specification 3.4.F.2.
	2.	If the fire protection system becomes inoperable during the run mode, the reactor may remain in operation provided both core spray system loops are operable with no inoperable components.
OYST	TER CRE	EK 3.4-6 Amendment No.: 75, 120, 153 , 247

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SUPPORT PROCEDURE 28

LEVEL INSTRUMENTATION AVAILABILITY

1.0 PREREQUISITES

The evaluation of RPV Water Level Instruments has been directed by the Emergency Operating Procedures.

2.0 PREPARATION

None

3.0 PROCEDURE

An RPV water level instrument may be used to determine RPV water level only when all the following conditions are satisfied for that instrument.

3.1 Record the temperatures of the following instrument reference leg vertical runs as read on recorder TR-IA55 on Panel 8R or the Plant Process Computer.

Level Instrument	Temp Instrument No.	Recorder Point	Temperature
NR GEMAC A (LT-1D13A)	TE-130-450	40	4521
NR GEMAC B (LT-1D13B)	TE-130-451	41	4531
WR GEMAC (LT-1A12)	TE-130-452	42	YTIV
YARWAY A (LT-RE05/192	A) TE-130-453	43	448
YARWAY B (LT-RE05/198	3) TE-130-454	44	4461

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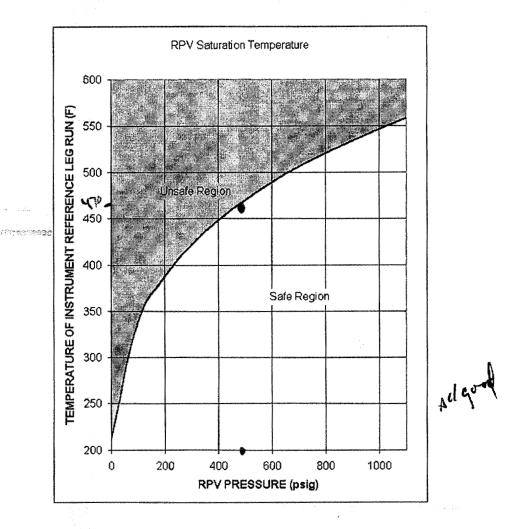
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3.2 <u>NOTE</u> If reference leg temperatures are in the UNSAFE REGION of the curve, that instrument may not be used until an engineering evaluation of reference leg conditions has been performed.

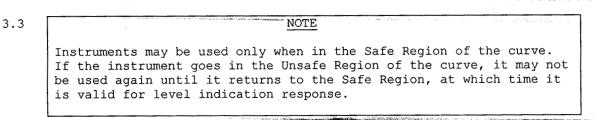
Verify that the instrument reference leg temperatures are in the SAFE REGION of the RPV Saturation Temperature Curve.



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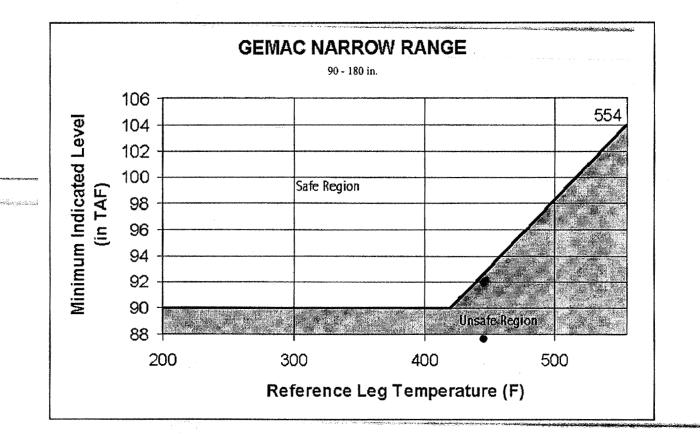
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For each instrument below, the instrument reads in the Safe Region of

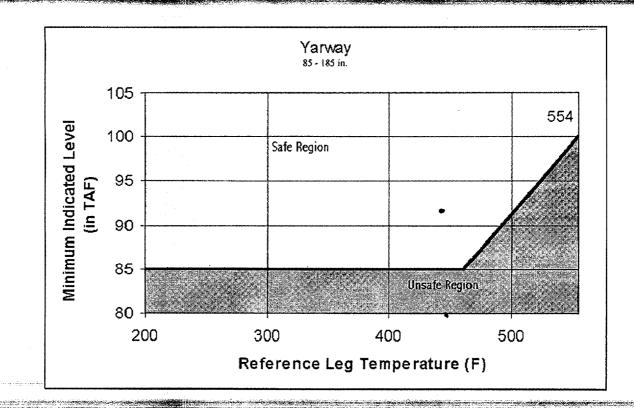
its respective curve.

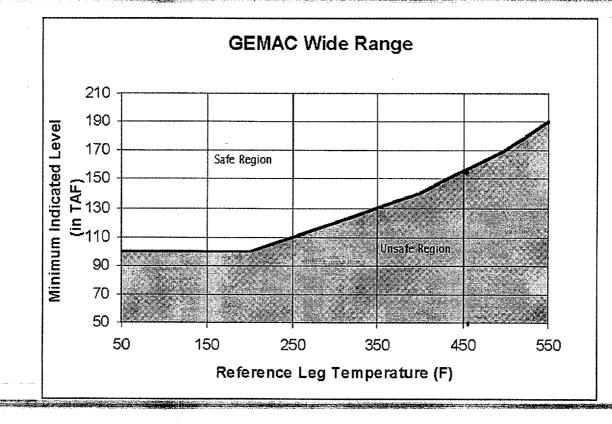


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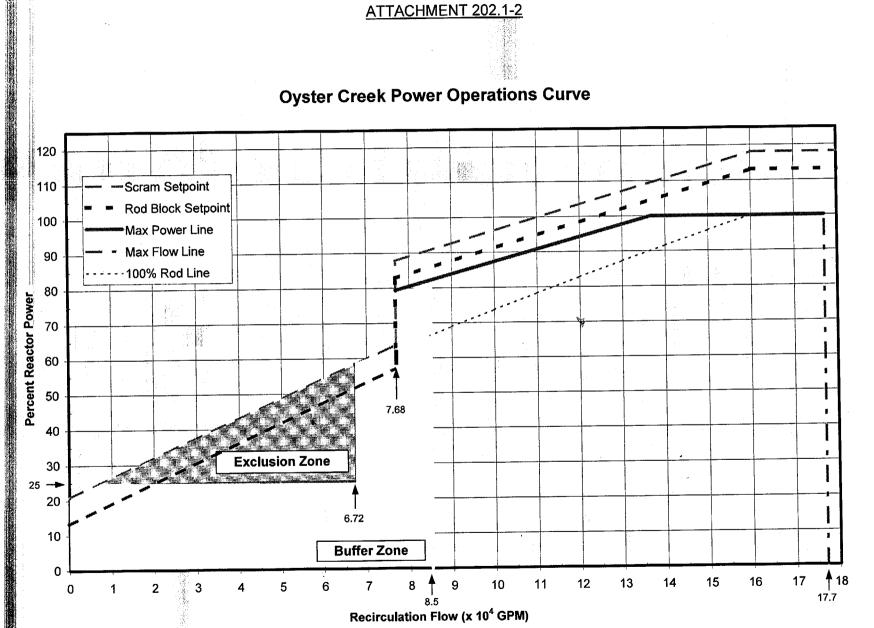
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Rev. 100

Procedure 202.1



OYSTER CREEK GENERATING STATION PROCEDURE

Number

ABN-30

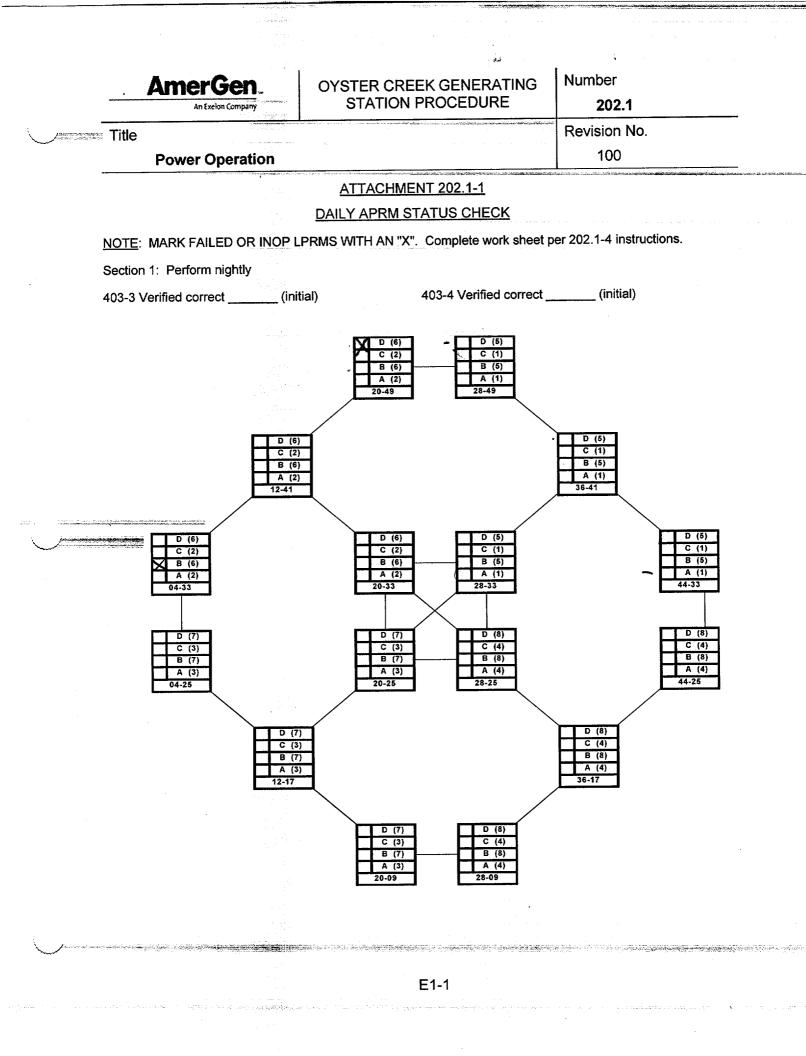
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CONTROL ROOM EVACUATION

Revision No.

ATTACHMENT ABN-30-4 SATURATION CONDITIONS PSIG 110 <u>PSIG</u> 235 <u>°F</u> 212 225.24 <u>PSIG</u> 55 <u>°F</u> 302.92 PSIG 0 °F ٩F 400.95 344.33 303.88 344.94 240 402.70 56 111 456789 245 250 255 304.83 305.76 227.96 57 112 345.54 404.42 346.13 406.11 230.57 113 58 346.73 347.32 233.07 59 306.68 114 407.78 260 409.43 60 307.60 235.49 115 347.90 348.48 265 270 275 61 308.50 116 411.05 237.82 412.65 10 11 12 13 14 15 240.07 62 309.40 117 63 64 65 349.06 349.64 310.29 118 414.23 242.25 280 285 295 415.79 244.36 311.16 119 120 121 122 123 350.21 350.78 312.03 312.89 313.74 417.33 246.41 66 67 420.35 248.40 305 315 250.33 351.35 423.29 426.16 68 69 351.91 16 252.22 314.59 428.97 254.05 315.42 124 352.47 325 17 70 71 72 73 125 126 353.02 335 18 316.25 431.72 255.84 345 355 257.58 353.57 434.40 19 317.07 20 21 22 23 24 127 317.88 354.12 437.03 259.28 365 375 385 395 128 354.67 439.60 260.95 318.68 319.48 320.27 321.06 321.83 129 130 74 75 76 355.21 355.76 442.12 262.57 444.59 264.16 131 132 265.72 356.29 447.01 449.39 451.73 454.02 356.83 405 25 267.25 77 268.74 270.21 78 79 133 134 357.36 357.89 358.42 415 26 322.60 425 435 323.36 27 324.12 324.87 135 137 28 271.64 80 456.28 445 455 465 475 29 81 359.46 458.50 273.05 82 83 84 85 139 141 143 274.44 275.80 30 325.61 360.49 460.68 326.35 327.08 327.81 31 32 33 361.52 462.82 362.53 363.53 277.13 464.93 145 485 467.01 278.45 279.74 86 87 471.07 475.01 34 328.53 147 364.53 505 525 35 36 37 329.25 149 365.51 281.01 88 329.96 151 366.48 545 478.58 282.26 545 565 585 605 89 330.66 153 367.45 482.58 283.49 368.41 369.35 370.29 38 39 284.70 90 155 486.21 331.36 489.21 285.90 287.07 91 332.05 157 625 645 40 <u>9</u>2 159 493.21 332.74 496.58 41 288.23 93 333.42 161 371.22 372.14 373.06 373.96 42 94 665 499.88 289.37 334.10 163 95 96 506.25 506.25 43 290.50 334.77 165 685 705 725 167 44 291.61 335.44 509.34 45 292.71 97 336.11 169 374.86 293.79 294.85 98 99 171 173 175 375.75 745 765 512.36 336.77 46 515.33 47 337.42 376.64 377.51 378.38 785 805 518.23 100 338.07 295.90 48 521.08 523.88 526.63 529.33 49 296.94 101 338.72 177 379.24 825 102 339.36 179 50 297.97 845 51 298.99 103 339.99 181 380.10 865 885 183 104 380.95 340.62 52 299.99 53 54 381.79 531.98 300.98 105 341.25 185 341.88 383.86 905 534.59 301.96 106 190 925 195 385.90 537.16 107 342.50 108 343.11 200 387.89 945 539.68 965 205 389.86 542.17 109 343.72 210 391.79 985 544.61 215 546.22 393.68 1000 NOTE 220 1025 1035 395.54 548.38 2000 225 397.37 550.57 All pressures in PSIG are rounded to the nearest whole number. 26.0



	AmerGen.	OYSTER CREEK GEN STATION PROCEE		Number ABN-37	
Title	STATIC	ON BLACKOUT	attor and a second second second	Revision No. 4	
		Attachment ABN Restarting Critical			<u></u>
		CAUTION			
Maximu	m allowable SBO trar	nsformer load is limited to	8 MWe.		
1.0	MONITOR SBO tran with the CT Operato	nsformer load at the SBO or and	Panel or by	maintaining contact	
	MAINTAIN SBO tra	nsformer load less than 8	MWe.	- Sector - Sector and a sector construction of the sector se	[]
NOTE:	1. The maximun MWe.	n load added from all poss	sible equipn	nent in this step is 2.1	2
	consider start	mp in each system below i ting the pump with its disc current and system perturk	charge valve		
2.0		the following order, unless and if power is available (t			aantaa koon oo correct
	System		Panel	Load Contraction	
	CRD pump(s) IAW 3 System	302.1, Control Rod Drive	4F	200 Kwe each	[]
	Service Water pump Water System	o(s) IAW 322, Service	5F/6F	204 Kwe each	[]
	TBCCW pump(s) IA Building Closed Coo	-	13R	181 Kwe each	[]
	Air compressor(s) IA Service Air System	AW 334, Instrument and	5F/6F	144 Kwe each	[]
		W 309 2 Reactor	13R	159 Kwe each	
	RBCCW pump(s) IA Building Closed Coo				[]]

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AmerGen.	OYSTER CREEK GENERATING STATION PROCEDURE	Number ABN-37
Title STATIC	ON BLACKOUT	Revision No. 4
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Attachment ABN-37-7 Restarting Critical Loads

(continued)

System	Panel	Load				
Condensate Transfer pump(s) IAW 316.1, Condensate Transfer System	5F/6F	41 Kwe each	[]		
A Battery Charger IAW 340.1, 125 VDC Distribution Systems "A" & "B"	8F/9F	65 Kwe	ľ]		
B Battery Charger IAW 340.1, 125 VDC Distribution Systems "A" & "B"	8F/9F	65 Kwe	[J		
End of Attachment ABN-37-7						

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3.3	REACTOR COOLAN	Т

Applies to the operating status of the reactor coolant system. Applicability:

Objective:

To assure the structure integrity of the reactor coolant system.

Specification: A. Pressure Temperature Relationships

- (i) Reactor Vessel Pressure Tests the minimum reactor vessel temperature at a given pressure shall be in excess of that indicated by the curve A in Figures 3.3.1, 3.3.2 and 3.3.3 for reactor operations to 22, 27 and 32 effective full power years, respectively. The maximum temperature for Reactor Vessel Pressure Testing is 250°F.
- (ii) Heatup and Cooldown Operations: Reactor noncritical -- the minimum reactor vessel temperature for heatup and cooldown operations at a given pressure when the reactor is not critical shall be in excess of that indicated by the curve B in Figures 3.3.1, 3.3.2 and 3.3.3 for reactor operations up to 22, 27 and 32 effective full power years, respectively.
- (iii) Power operations -- the minimum reactor vessel temperature for power operations at a given pressure shall be in excess of that indicated by the curve C in Figures 3.3.1, 3.3.2 and 3.3.3 for reactor operations up to 22, 27 and 32 effective full power years respectively.

Note: Curves A, B and C in Figures 3.3.1, 3.3.2 and 3.3.3 apply when the closure head is on the reactor vessel and studs are fully tensioned.

- (iv) Appropriate new pressure temperature limits must be generated when the reactor system has reached thirty-two (32) effective full power years of reactor operation.
- B. Reactor Vessel Closure Head Boltdown: The reactor vessel closure head studs may be elongated .020" (1/3 design preload) with no restrictions on reactor vessel temperature as long as the reactor vessel is at atmospheric pressure. Full tensioning of the studs is not permitted unless the temperature of the reactor vessel flange and closure head flange is in excess of 85°F.
- C. Thermal Transients
 - 1. The average rate of reactor coolant temperature change during normal heatup and cooldown shall not exceed 100°F in any one hour period.
 - 2. The pump in an idle recirculation loop shall not be started unless the temperature of the coolant within the idle recirculation loop is within 50°F of the reactor coolant temperature.

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Amendment No: 42, 120, 151, 188

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D. Reactor Coolant System Leakage

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		a. 5 gpm uni	identified leakage	
			otal (identified and	
				ed leakage rate within any 24
		hour peric	od while operating	at steady state power
	2.			kage greater than the limits
				leakage rate to within the
	•			place the reactor in the
				12 hours and be in the cold
		shutdown conditio	on within the follow	ving 24 hours.
	3.			eater than the limit in
				of leakage within 4 hours,
				in the next 12 hours and be
		in the cold shutdo	own condition withi	n the following 24 hours.
	4.		n of unidentified lea	
				system shall be operable except
		as specified below	W:	
		a. With the p	primary containmer	nt sump flow integrator inoperable:
	Reptile parties to socio			e status within 7 days.
				tified leakage rate utilizing an
n ang ng n	in the second			means as specified in plant
		pro	ocedures.	
		b. If Specific	ation 3.3.D.4a can	not be met, place the reactor in
				in the next 12 hours.
	5.	For determination	n of identified leaka	ige, the primary containment
		equipment drain t	tank monitoring sys	stem shall be operable except
		as specified below	W:	
		a. With the p	primary containmer	nt equipment drain tank monitoring
		system in		,
		4 5-		
				e status within 7 days. ed leakage rate utilizing an
				means as specified in plant
			ocedures.	nicuns as specified in plant
				not be met, place the reactor
		in the shu	tdown condition wi	thin the next 12 hours.
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DYSTER CREEK	• • •		3.3-2	Amendment No: 133

 A. P. M. M. M. M. M. M. M. Market, and a straightform of the second s second second s second second s Second second s	<u>E.</u>	Reacto	r Coolant Quality	· · · · · · · · · · · · · · · · · · ·	
		1.	The reactor coolant turbine-condenser o	quality during pov f less than 100,000	ver operation with steaming rates to the) pounds per hour shall be limited to:
			conductivity chloride ion	2 us/cm[s=r 0.1 ppm	nhos at 25°C (77°F]
		2.	exceeded, an orderly	y shutdown shall b	oncentration limits given in 3.3.E.1 are e initiated immediately, and the reactor o less than 212°F within 24 hours.
		3.	The reactor coolant turbine-condenser o limited to:	quality during pow f greater than or ec	ver operation with steaming rates to the qual to 100,000 pounds per hour shall be
			conductivity chloride ion	10 uS/cm 0.5 ppm	[S=mhos at 25°C (77°F)]
		4.	3.3.E.3 are exceede	d, an orderly shutd	hloride concentration limits given in own shall be initiated immediately, and be reduced to less than 212°F within 24
		5.	than or equal to 100	,000 pounds per h	g rates on the turbine-condenser of greater our, the time limit above 1.0 uS/cm at 11 not exceed 72 hours for any single
an an ann an Aonaichte an	r der omföldet som stadet som stade	<u>6.</u>	When the time limit initiated within 4 ho		xceeded, an orderly shutdown shall be
	F.	Recirc	ulation Loop Operabi	<u>ility</u>	
		1.	During POWER OF OPERATING exce	PERATION, all fiv pt as specified in S	re recirculation loops shall be pecification 3.3.F.2.
		2.	LOOPS or one IDL	E RECIRCULATI	um of two IDLE RECIRCULATION ION LOOP and one ISOLATED ed. The reactor shall not operate with two DPS.
			a. With one IS	SOLATED LOOP	the following conditions shall be met:
			RA any 3.1	TE (APLHGR) as axial location shat 0.A. The action to	NAR LINEAR HEAT GENERATION a function of average planar exposure, at Il not exceed 98% of the limits specified in bring the core to 98% of the APHLGR eted prior to isolating the recirculation

OYSTER CREEK Amendment No: 42, 93, 135, 140, 212 3.3-3

Corrected Letter dated 8/7/2000

The circuit breaker of the recirculation pump motor generator set associated with an ISOLATED RECIRCULATION LOOP shall be open and defeated from operation.

An ISOLATED RECIRCULATION LOOP shall not be returned to service unless the reactor is in the COLD SHUTDOWN condition.

When there are two inoperable recirculation loops (either two IDLE RECIRCULATION LOOPS or one IDLE RECIRCULATION LOOP and one ISOLATED RECIRCULATION LOOP) the reactor core thermal power shall not exceed 90% of rated power.

If Specifications 3.3.F.1 and 3.3.F.2 are not met, an orderly shutdown shall be initiated immediately until all operable control rods are fully inserted and the reactor is in either the REFUEL MODE or SHUTDOWN CONDITION within 12 hours.

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6.

With reactor coolant temperature greater than 212°F and irradiated fuel in the reactor vessel, at least one recirculation loop discharge valve and its associated suction valve shall be in the full open position.

If Specification 3.3.F.4 is not met, immediately open one recirculation loop discharge valve and its associated suction valve.

With reactor coolant temperature less than 212°F and irradiated fuel in the reactor vessel, at least one recirculation loop discharge valve and its associated suction valve shall be in the full open position unless the reactor vessel is flooded to a level above 185 inches TAF or unless the steam separator and dryer are removed.

OYSTER CREEK Amendment No: 135, 140, 212 Corrected Letter dated 8/7/2000

	Primary Coolant System Pressure Isolation Valves
	Applicability:
	Operational conditions - Startup and Run Modes; applies to the operational status of the primary coolant system pressure isolation valves.
	Objective:
	To increase the reliability of primary coolant system pressure isolation valves thereby reducing the potential of an inter-system loss of coolant accident.
	Specification:
	1. During reactor power operating conditions, the integrity of all pressure isolation valves listed in Table 3.3.1 shall be demonstrated. Valve leakage shall not exceed the amounts indicated.
	2. If Specification 1 cannot be met, an orderly shutdown shall be initiated and the reactor shall be in the cold shutdown condition within 24 hours.
H.	Reguired Minimum Recirculation Flow Rate for Operation in IRM Ranize 10
	1. During STARTUP mode operation, a minimum recirculation flow rate is required before operating in IRM range 10 to ensure that technical specification transient MCPR limits for operation are not exceeded. This minimum flow rate is no longer required once the reactor is in the RUN mode.
	2. 39.65×10^6 lb/hr is the minimum recirculation flow rate necessary for operation in IRM range 10 at this time. This flow rate leaves sufficient margin between the minimum flow required by the RWE analysis performed and the minimum flow used while operating in IRM range 10.

NRC Order Dated April 20, 1981

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OYSTER CREEK Amendment No: 15, 42, 71, 212

Corrected Letter dated 8/7/2000

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ATTACHMENT 333-15

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	FIRE PANEL NUMBER	REFERENCE DRAWING	INITIATING EVENT	AFFECTED EQUIPMENT
1	LFAP #1 (Reactor Building)	AP PE-521 Sh. 1 JC 19635 Sh. 1	1) Actuate one detector from Rx Bldg 23' North side Zone 1	1) Actuate Deluge System #7
			AND	
			2) Actuate one detector from Rx Bldg 23' North side Zone 2	
			OR	
. <u>.</u>			3) Actuate manual pull station	
!	LFAP #1 (Reactor Building)	AP PE-521 Sh. 1 JC 19635 Sh. 1	1) Actuate one detector from Rx Bldg 23' South side Zone 1	1) Actuate Deluge System #8
			AND	
			2) Actuate one detector from Rx Bldg 23' South side Zone 2	
			OR	
			3) Actuate manual pull station	

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	FIRE PANEL NUMBER	REFERENCE DRAWING	INITIATING EVENT	AFFECTED EQUIPMENT
in the second	LFAP #1(Reactor Building)	AP PE-521 Sh. 1 JC 19635 Sh. 2	1) Actuate one detector from Rx Bldg 51' North side Zone 1	1) Actuate Deluge System #5
			AND	
			2) Actuate one detector from Rx Bldg 51' North side Zone 2	
punctus releasings			OR	
			3) Actuate manual pull station	
	LFAP #1 (Reactor Building)	AP PE-521 Sh. 1 JC 19635 Sh. 2	1) Actuate one detector from Rx Bldg 51' South side Zone 1	1) Actuate Deluge System #6
			AND	
			2) Actuate one detector from Rx Bldg 51' South side Zone 2	
			OR	
			3) Actuate manual pull station	

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EQUIPMENT ACTUATED BY FIRE PANELS

	FIRE PANEL NUMBER	REFERENCE DRAWING	INITIATING EVENT	AFFECTED EQUIPMENT
	LFAP #2 (4160V Switchgear Area)	AP PE-521 Sh. 2 IC 80-02-071	1) Detector actuated in "C" 4160V Swgr. Room	1) Actuate six electric thermal links (ETL) which close dampers and roll-up doors if open.
			OR	AND
مېرىنى ئۆلۈر بىرىنىيە يېرىنى بىرىكى بىرىك بىرىكى بىرىكى			2) Detector actuated in "D" 4160V Swgr. Room	2) Trip "C" Swgr. Room Fan AND 3) Trip "D" Swgr. Room Fan
	C & D 4160V CO ₂ System	FS FLR-31817-0	1) Actuation of manual pull station outside of the "C" or "D" 4160V Swgr.	 Actuate six electric thermal links (ETL) which close dampers and roll-up doors if open.
			Rooms	AND
				2) Trip "C" Swgr. Room Fan
				AND
				3) Trip "D" Swgr. Room Fan
				AND
				4) After 15 second time delay, CO ₂ is actuated in "C" and "D" 4160V Switchgear Rooms.



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FIRE PANEL NUMBER	REFERENCE DRAWING	INITIATING EVENT	AFFECTED EQUIPMENT
LFAP #2 (4160V Switchgear Area)	AP PE-521 Sh.2	1) Any detector actuated in A/B 4160V Swgr. Area	1) Actuate Preaction Valve V-9-1089 to fill Sprinkler System #22 piping
		OR	
		2) Actuate manual pull station	
LFAP #3 (Diesel Generator Area)	AP PE-521 Sh. 3	N/A	N/A
LFAP #4 (Turbine Basement North End)	AP PE-521 Sh. 4	N/A	N/A
LFAP #5 (Lower Cable Spread Room)	AP PE-521 Sh. 5 & 6	1) One detector from any of the four zones in the LCSR.	1) "A" Control Room HVAC trips.
		OR	
		2) Flow alarm from Deluge System #4A	
		OR	
		3) Flow alarm from Deluge System #4B	

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ev :	FIRE PANEL NUMBER	REFERENCE DRAWING	INITIATING EVENT	AFFECTED EQUIPMENT
	LFAP #5 (Lower Cable Spread Room)	AP PE-521 Sh. 5 JC 19635 Sh. 5	1) Actuate one detector from Zone 1	1) Actuate Deluge System 4A
			AND	
			2) Actuate one detector from Zone 2	
			OR	
nanging nanga			3) Actuate manual pull station	
	LFAP #5 (Lower Cable Spread Room)	AP PE-521 Sh. 5 JC 19635 Sh. 5	1) Actuate one detector from Zone 3	1) Actuate Deluge System 4B
			AND	
			2) Actuate one detector from Zone 4	
			OR	
			3) Actuate manual pull station	

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EQUIPMENT ACTUATED BY FIRE PANELS

	FIRE PANEL	REFERENCE	INITIATING EVENT	AFFECTED EQUIPMENT
- (* _{6.0} /2)	LFAP #6 (Control Room)	AP PE-521 Sh. 6 JC 19635 Sh. 5 SN 15050.68-EE-13 Sh. 1	1) Any one detector in Halon System A, Zone 1 or 2. OR	1) "A" Control Room HVAC trips.
			2) Any one detector in Halon System B, Zone 1 or 2.	
	1		OR	
			3) Any one detector in Halon System C, Zone 1 or 2	
			OR	
			4) Any one detector in Zone D, ceiling	
			OR	
			5) "A" Supply Duct Detector	
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FIRE PANEL	REFERENCE DRAWING	INITIATING EVENT	AFFECTED EQUIPMENT
LFAP #6 (Control Room)	AP PE-521 Sh. 6 JC 19635 Sh. 5 TI OC-12010 Sh. 1	1) Any one detector in Halon System A, Zone 1 or 2.	1) "B" Control Room HVAC trips.
		OR	
an a		2) Any one detector in Halon System B, Zone 1 or 2.	
		OR	
		3) Any one detector in Halon System C, Zone 1 or 2	
		OR	
		4) Any one detector in Zone D, ceiling	
	2	OR	
		5) "B" Supply or Exhaust Duct Detector	

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	FIRE PANEL NUMBER	REFERENCE DRAWING	INITIATING EVENT	AFFECTED EQUIPMENT
2018	LFAP #6 (Control Room)	AP PE-521 Sh. 6 JC 19635 Sh. 5	1) Any one detector in Halon System A, Zone 1	1) After 15 second delay, Halon System "A" actuates.
			AND	
			2) Actuate one detector in Halon System A, Zone 2.	
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			OR	
		an the second secon	3) Actuate Manual Pull Station for Halon System "A".	
	LFAP #6 (Control Room)	AP PE-521 Sh. 6 JC 19635 Sh. 5	1) Any one detector in Halon System B, Zone 1	1) After 15 second delay, Halon System "B" actuates.
			AND	
			2) Actuate one detector in Halon System B, Zone 2.	
			OR	
			3) Actuate Manual Pull Station for Halon System "B".	

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[FIRE PANEL	REFERENCE	INITIATING	AFFECTED EQUIPMENT
	NUMBER	DRAWING	EVENT	
	LFAP #6 (Control Room)	AP PE-521 Sh. 6 JC 19635 Sh. 5	1) Any one detector in Halon System C, Zone 1	1) After 15 second delay, Halon System "C" actuates.
clodinford			AND	
			2) Actuate one detector in Halon System C, Zone 2.	
			OR	
huku (hoo đ		- Antonio anton	3) Actuate Manual Pull Station for Halon System "C".	
	LFAP #7 (480V Switchgear Room)	AP PE-521 Sh.7 BR E1345 GE 157B6350 Sh. 50A & 193B	1) Actuate one detector from Zone 3	1) Trip "A" 480V Swgr. Rm. Supply Fan (FN-56-004)
			AND	AND
			2) Actuate one detector from Zone 4	2) Trip "A" 480V Swgr. Rm. Alt. Exhaust Fan (FN-56-008)
			OR	AND
			3) Actuate manual pull station in "A"	3) Close "A" room dampers (DM-56-015 & 16)
			room	AND
				4) After 60 second time delay, "A" 480V Room Halon actuated.

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EQUIPMENT ACTUATED BY FIRE PANELS

FIRE PANEL NUMBER	REFERENCE DRAWING	INITIATING EVENT	AFFECTED EQUIPMENT
LFAP #7 (480V Switchgear Rooms)	AP PE-521 Sh. 7 BR E1345	1) Actuate one detector from Zone 5.	1) Close fire door DR-814-015
LFAP #7 (480V Switchgear Room)	AP PE-521 sh. 7 BR E1345 GE 157B6350 sh.	1) Actuate one detector from Zone 1	1) Trip "B" 480V Swgr. Rm. Supply Fan (SF-1-21) AND
	128 & 118	AND	
			2) Close "B" room dampers
		2) Actuate one	(DM-56-013 & 14)
		Zone 2	AND
		OR	3) After 60 second tome delay, "B" 480V Room Halon
		3) Actuate manual pull station in "B" room.	actuated.
	NUMBER LFAP #7 (480V Switchgear Rooms) LFAP #7 (480V Switchgear	NUMBERDRAWINGLFAP #7 (480V Switchgear Rooms)AP PE-521 Sh. 7 BR E1345LFAP #7 (480V SwitchgearAP PE-521 sh. 7 BR E1345	NUMBERDRAWINGEVENTLFAP #7 (480V Switchgear Rooms)AP PE-521 Sh. 7 BR E13451) Actuate one detector from Zone 5.LFAP #7 (480V Switchgear Room)AP PE-521 sh. 7 BR E1345 GE 157B6350 sh. 72B & 77B1) Actuate one detector from Zone 1LFAP #7 (480V Switchgear Room)AP PE-521 sh. 7 BR E1345 GE 157B6350 sh. 72B & 77B1) Actuate one detector from Zone 1LFAP #7 (480V Switchgear Room)AP PE-521 sh. 7 BR E1345 GE 157B6350 sh. 72B & 77B1) Actuate one detector from Zone 1LFAP #7 (480V Switchgear Room)AP PE-521 sh. 7 BR E1345 GE 157B6350 sh. 72B & 77B1) Actuate one detector from Zone 1LFAP #7 (480V Switchgear Room)AP PE-521 sh. 7 BR E1345 GE 157B6350 sh. 72B & 77B1) Actuate one detector from Zone 2LFAP #7 (480V Switchgear Room)AP PE-521 sh. 7 BR E1345 GE 157B6350 sh. 72B & 77B1) Actuate one detector from Zone 2LFAP #7 (480V Switchgear Room)AP PE-521 sh. 7 BR E1345 GE 157B6350 sh. 72B & 77B1) Actuate one detector from Zone 2LFAP #7 (480V Switchgear Room)AP PE-521 sh. 7 BR E1345

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Siri	FIRE PANEL NUMBER	REFERENCE DRAWING		AFFECTED EQUIPMENT
	LFAP #8 (AB Battery Room/MG Set Room)	DCX EW95427 GU 3E-665-18-1000 GU 3E-665-14-1000 AP PE-521 Sh. 12 GE 157B6350 Sh. 77A & 83B	1) Actuate one detector from Zone 1 AND actuate one detector from Zone 2	1) Actuate electric thermal links (ETL) which close dampers for initiating events 1 or 2 only. AND
			OR	2) Trip MG Set Room Spot Coolers for all initiating
			2) Actuate one of the manual pull stations	events (1, 2 or 3). AND
			OR 3) MG Set Room flow alarm	3) Provides flow input (halon or water) to MFAP #A module #8 Flow for all initiating events (1, 2 or 3) which trips EF-1-20 and SF-1-20
				AND
				4) After 30 second time delay for initiating events 1 or 2 only, AB Battery Room halon system actuates.
	LFAP #9 (Main Office Building)	AP PE-521 Sh. 8 JC 19635 Sh. 4	N/A	N/A

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EQUIPMENT ACTUATED BY FIRE PANELS

FIRE PANEL NUMBER	REFERENCE DRAWING	INITIATING EVENT	AFFECTED EQUIPMENT
LFAP #10 (Monitor & Change Area)	AP PE-521 Sh. 9 JC 19635 Sh. 4	1) One detector above Monitor & Change ceiling	1) Close fire doors DR-814-22 & 23.
		OR	
		2) One detector below Monitor & Change ceiling	
		OR	
		3) Sprinkler system #12 flow alarm	
LFAP #11 (Boiler House, AOG & ORW)	AP PE-521 Sh. 10	N/A	N/A
LFAP #12 (Fire Water Pump House)	AP PE-521 Sh. 11	1) Actuate one thermal detector in Fire Water Pump House or above fuel tanks OR	1) Actuate Deluge System #9
		2) Actuate Manual Pull Station	

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EQUIPMENT ACTUATED BY FIRE PANELS

FIRE PANEL NUMBER	REFERENCE DRAWING	INITIATING EVENT	AFFECTED EQUIPMENT
MFAP #A (Master Fire Alarm Panel A)	AP PE-521 Sh. 12 GE 157B6350 Sh. 77A & 83B	Module #8 Flow Alarm (refer to LFAP #8 for actuating devices)	1) Trip SF-1-20 (AB Battery Rm/MG Set Rm Supply Fan) AND
			2) Trip EF-1-20 (AB Battery Rm/MG Set Rm Exhaust Fan)
MFAP #B (Master Fire Alarm Panel B)	AP PE-521 Sh. 12A	N/A	N/A
LFAP ER49 (Upper Cable Spread Room)	BG BFE-2099 Sh. 1 & 3	N/A	N/A
FPP-665-004 (Cable Bridge Tunnels)	BG BFE-2099 Sh. 3	N/A	N/A
Cable Bridge Tunnel	JC 19479 Sh. 2	1) Actuate manual pull station	1) Actuate Deluge Valve V-9-442 to fill Preaction Sprinkler System #16 piping.

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EQUIPMENT ACTUATED BY FIRE PANELS

	FIRE PANEL NUMBER	REFERENCE DRAWING	INITIATING EVENT	AFFECTED EQUIPMENT
al faire a	Exciter CO₂ System	GU 3E-812-17-1000	 Actuate one detector in the exciter housing OR Actuate Manual Pull Station 	 Actuate ETL's to close dampers in Exciter AND After time delay, individual CO₂ bottles will sequentially discharge up to approximately 30 minutes.
	Turbine Bearing 10 CO ₂ System	GU 3E-812-17-1000	1) Actuate Bearing 10 detector	1) Bearing 10 CO₂ bottle discharges
	Panel ER-811-817 (Transformer Area & Lube Oil Tank Area)	AGL 8-5832-1 BR 3042 Sh. 1 GU 3D-811-14-001	1) Actuate one thermal detector at M1A OR	1) Actuate Deluge System 1
			2) Actuate one thermal detector at the Auxiliary Transformers	
			OR 3) Actuate manual pull station	

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2. State	FIRE PANEL	REFERENCE		AFFECTED EQUIPMENT
-	NUMBER	DRAWING	EVENT	
	Panel ER-811-817 (Transformer Area & Lube Oil Tank Area)	AGL 8-5832-1 BR 3042 Sh. 1 GU 3C-811-15-1001	1) Actuate one thermal detector at M1B	1) Actuate Deluge System 2
			OR	
			2) Actuate one thermal detector at the Startup Transformers	
			OR	
			3) Actuate manual pull station	
÷	Panel ER-811-817 (Transformer Area & Lube Oil Tank Area)	AGL 8-5832-1 Br 3042 Sh. 1	1) Actuate one thermal detector at Turbine Lube Oil Tank OR	1) Actuate Deluge System 3
			2) Actuate manual pull station	
	Station Blackout Transformer (SBO)	JC 19479 Sh. 2	1) Actuate one thermal detector at SBO Transformer	1) Actuate Deluge System 10
			OR	
			2) Actuate manual pull station	

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FIRE PANEL NUMBERREFERENCE DRAWINGINITIATING EVENTAFFECTED EQUIPMENTSEB Fire Panel (corridor)TO X-2556-6 & BR E05451) Actuate one detector in the SEB Battery Room (Zone 5 or 6)1) Trips exhaust Fan FN-843-7SEB Fire Panel (corridor)TO X-2556-6 & BR E50451) Actuate one detector in the SEB Battery Room Zone 51) Battery Room door closes ANDSEB Fire Panel (corridor)TO X-2556-6 & BR E50451) Actuate one detector in the SEB Battery Room Zone 51) Battery Room door closes AND3) Trips exhaust Fan FN-843-7 if not already trippedAND3) Actuate Battery Room Pressure Switch0R4) Actuate manual pull station1) Actuate one detector in the SEB Eattery Room Pressure SwitchSEB Fire Panel (Corridor)TO X-2556-6 & BR E05451) Actuate one detector in the SEB Electrical ER E0545SEB Fire Panel (Corridor)TO X-2556-6 & BR E05451) Actuate one detector in the SEB Electrical EQ Uint stationSEB Fire Panel (Corridor)TO X-2556-6 & BR E05451) Actuate one detector in the SEB Electrical EQ Uint stationSEB Fire Panel (Corridor)TO X-2556-6 & BR E05451) Actuate one detector in the SEB Electrical EQ Uint stationSEB Fire Panel (Corridor)TO X-2556-6 & BR E05451) Actuate one detector in the SEB Electrical EQ Uint stationSEB Fire Panel (Corridor)TO X-2556-6 & BR E05451) Actuate one detector in the SEB Electrical EQ Uint stationSEB Fire Panel <th></th> <th></th> <th>and the second second</th> <th></th> <th>and the second second</th>			and the second		and the second
OLD First ratioBR E0545Jetector in the SEB Battery Room (Zone 5 or 6)1) Battery Room door closes 	ang sa tang sa	영화 이가 이 것같아. 않는 것들은 것은 방법은 바람은 바람을 수 없다.			AFFECTED EQUIPMENT
OLD THE Function (corridor) IS A ESCAS & M) detector in the SEB Battery Room Zone 5 AND AND 2) Actuate one detector in the SEB Battery Room Zone 6 AND 2) Closes fire dampers DM-843-4 & 5 2) Actuate one detector in the SEB Battery Room Zone 6 AND 3) Trips exhaust Fan FN-843-7 if not already tripped OR AND 4) After 30 second time delay, Battery Room Pressure Switch 4) After 30 second time delay, Battery Room Halon is actuated SEB Fire Panel (Corridor) TO X-2556-6 & BR E0545 1) Actuate one detector in the SEB Electrical Equiment Room (Zone 3 or 4) 1) Trips exhaust Fan FN-843-4				detector in the SEB Battery Room (Zone 5 or	1) Trips exhaust Fan FN-843-7
ANDDM-843-4 & 52) Actuate one detector in the SEB Battery Room Zone 6AND3) Trips exhaust Fan FN-843-7 if not already trippedORAND3) Actuate Battery Room Pressure Switch4) After 30 second time delay, Battery Room Halon is actuatedOR4) Actuate manual pull stationSEB Fire Panel (Corridor)TO X-2556-6 & BR E05451) Actuate one detector in the SEB Electrical Equiment Room (Zone 3 or 4)1) Trips exhaust Fan FN-843-5 AND 2) Trips supply Fan FN-843-4		-		detector in the SEB Battery	AND
Jer ProductionConstructionConstructionConstructionConstructionConstructionConstructionConstructionConstructionConstructionConstructionConstructionConstructionConstructionConstructionConstructionConstructionConstructionConstructionConstructionConstructionConstructionConstructionConstructionConstructionConstructionConstructionConstructionConstructionConstructionConstructionConstructionConstructionConstructionConstructionConstructionConstructionConstructionConstructionConstructionConstructionConstructionConstructionConstructionConstructionConstructionConstructionConstructionConstructionConstructionConstructionConstructionConstructionConstructionConstructionConstructionConstructionConstructionConstructionConstructionConstructionConstructionConstructionConstructionConstructionConstructionConstructionConstructionConstructionConstructionConstructionConstructionConstructionConstructionConstructionConstructionConstructionConstructionConstructionConstructionConstructionConstructionConstructionConstructionConstructionConstructionConstructionConstructionConstructionConstructionConstructionConstructionConstructionConstructionConstructionConstructionConstruction				AND	
3) Actuate Battery Room Pressure Switch4) After 30 second time delay, Battery Room Halon is actuated0R0R4) Actuate manual pull station1) Actuate one detector in the SEB Electrical Equiment Room (Zone 3 or 4)1) Trips exhaust Fan FN-843-5 AND 2) Trips supply Fan FN-843-4				detector in the SEB Battery	3) Trips exhaust Fan FN-843-7
Room Pressure SwitchBattery Room Halon is actuatedOR (A) Actuate manual 				OR	AND
SEB Fire Panel (Corridor)TO X-2556-6 & BR E05451) Actuate one detector in the SEB Electrical Equiment Room (Zone 3 or 4)1) Trips exhaust Fan FN-843-5AND 2) Trips supply Fan FN-843-4				Room Pressure	Battery Room Halon is
SEB Fire Panel (Corridor)TO X-2556-6 & BR E05451) Actuate one detector in the SEB Electrical Equiment Room (Zone 3 or 4)1) Trips exhaust Fan FN-843-5AND 2) Trips supply Fan FN-843-4				OR	
(Corridor) BR E0545 BR E0545 BR E0545 BR E0545 Cone 3 or 4) BR E0545 Cone 3 or 4) BR E0545 Cone 3 or 4) Cone 3 or 4) Cone 3 or 4)	N				
(Zone 3 or 4) 2) Trips supply Fan FN-843-4	102123097902779 + 2:			detector in the SEB Electrical Equiment Room	AND

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FIRE PANEL NUMBER	REFERENCE DRAWING	INITIATING EVENT	AFFECTED EQUIPMENT
SEB Fire Panel (Corridor)	TO X-2556-6 & BR E0545	1) Actuate one detector in the SEB Electrical Equiment Room Zone 3 AND	 Electric Equipment Room door closes AND Closes fire dampers DM- 843-6 & 7
		2) Actuate one detector in the SEB Electrical Equipment Room Zone 4	AND 3) Trips unit heater in Electric Equipment Room H-843-1 (UH-2)
		OR	AND
		3) Actuate Electric Equipment Room Pressure Switch	4) Trips exhaust fan FN-843-5 if not already tripped AND
		OR 4) Actuate manual	5) Trips supply fan FN-843-4 if not already tripped
		pull station	AND
			6) After 30 second time delay, Electric Equipment Room Halon is actuated.

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FIRE PANEL	REFERENCE DRAWING	INITIATING EVENT	AFFECTED EQUIPMENT
SEB Fire Panel (Corridor)	TO X-2556-6 & BR E0545	1) Actuate one detector in the SEB Computer Room Zone 1	1) Trips Computer Room EDPAC air conditioning units M-834-4 through 9 AND
		AND	AND
		2) Actuate one detector in the SEB Computer Room Zone 2	2) Closes fire dampers DM- 843-3 AND
 		OR	 Trips Plant Computer (shunt trip)
		3) Actuate SEB Computer Room Pressure Switch OR	AND 4) After 30 second time delay, Battery Room Halon is actuated.
		4) Actuate manual pull station	
SEB Flow Switch (FS-811-5)	GU 3C-737-11-012	1) Sprinkler System 17A Flow Switch (FS-811-5) actuation	1) Trip SEB Telephone Room Battery Charger Distribution Panel SEB TEP

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Plant Fire Protection System

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ATTACHMENT 333-15 (continued)

EQUIPMENT ACTUATED BY FIRE PANELS

FIRE PANEL	REFERENCE DRAWING	INITIATING EVENT	AFFECTED EQUIPMENT
Main Gate Guard House	Pyrotronics DW NJ 5062	N/A	N/A
OCAB	United Fire Prot Corp 94116	1) Any System Alarm	1) F8 & F9 starters for stair pressurization
OCAB	United Fire Prot Corp 94116	1) Activation of Zone 7	1) Alternate elevator recall
OCAB	United Fire Prot Corp 94116	1) Activation of Zone 8	1) Elevator recall
		OR	
		2) Activation of Zone 12	
		OR	
• • •		3) Activation of Zone 16	
		OR	
		4) Activation of Zone 17	
OCAB	United Fire Prot Corp 94116	1) Activation of Zone 22	1) Elevator shunt trip

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AmerGen	OYSTER CREEK GENERATING	Number
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Plant Fire Protection System

ATTACHMENT 333-15 (continued)

	FIRE PANEL NUMBER	REFERENCE DRAWING	INITIATING EVENT	AFFECTED EQUIPMENT
	OCAB	Unite Fire Prot Corp 94116	1) Activation of Zone 18	1) HVAC trip
			OR	
			2) Activation of Zone 19	
			OR	
an a			3) Activation of Zone 20	
Antonia	Building 14 Fire Panel		1) Activation of one detector in Zone	1) Trip Simulator Room HVAC
			1 of Simulator Room	AND
			AND	2) After short time delay, actuate Simulator Room Halon System
			2) Activation of one detector in Zone 2 of Simulator Room	
		· · ·	OR	
			3) Activation of manual pull station outside Simulator Room	
	NRW	KU F-1069	N/A	N/A
	AOG	AP-PE-521 Sh. 10	N/A	N/A
	LLRW	JH 85-0036-020	N/A	N/A

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<u>EDG 1</u>

ENGINEERED SAFEGUARD LOADS AND OTHER CRITICAL LOADS

- -- INDICATES ENGINEERED SAFEGUARD LOAD
- Ø INDICATES PRIORITY PUMP FOR SAFETY SYSTEM

● INDICATES ALTERNATE PUMP FOR SAFETY SYSTEM △ INDICATES VALVE COULD RENDER SYSTEM INOPERABLE

Į	SYSTEM	BUS	EQUIPMENT
	CORE SPRAY SYSTEM PUMPS	1C 1C 1A2 1A2	 CORE SPRAY MAIN PUMP NZ01A (493KW) SYS 1 CORE SPRAY MAIN PUMP NZ01D (481KW) SYS 2 CORE SPRAY BOOSTER PUMP NZ03A (247KW) SYS 1 CORE SPRAY BOOSTER PUMP NZ03D (255KW) SYS 2-AUTO STARTS ONLY IF BOTH NZ03A AND NZ03B NOT RUNNING
	CONT. SPRAY SYSTEM PUMPS	1A2 1A2 1C 1C	NOTE: START PREVENTED FOR 200 SECONDS AFTER EDG BREAKER CONTAINMENT SPRAY PUMP 51A (254KW) SYS 1 CONTAINMENT SPRAY PUMP 51B (254KW) SYS 1 ESW PUMP 52A (328KW) SYS 1 ESW PUMP 52B (328KW) SYS 1
	LIQUID POISON SYSTEM PUMPS	1A21	LIQUID POISON PUMP NPO2-A AND SQUIB VALVE NPO5-A (25KW)
	STANDBY GAS TREAT-	1A24	NOTE: PRIORITY SGTS DEPENDS ON SYSTEM SELECTED ON PANEL 11R - ALL ASSOCIATED VALVES ARE AIR OPERATED. EF-1-8 (SGTS I) (9KW)
	MENT FANS CRD SYSTEM PUMPS	1A2	CRD SYS. PUMP NC08A (212KW)
	SERVICE WATER SYS. PUMP RBCCW SYS.	1A3	SERVICE WATER PUMP 1-1 (187KW)
	PUMP	1A2	RBCCW PUMP 1-1 (163KW)
	CONTROL ROOM HVAC SYSTEM FAN	1A2 (DP-A2)	SUPPLY FAN FN-826-008A (9KW)
	POST ACCIDENT INSTRUMENT POWER PANEL (PAIPP)	1A2	PANEL PAIPP-1, PDP-733-057 (1.9KW)

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		rGen.		OYSTER CREEK GENERATING STATION PROCEDURE	Number 341
Je en personale	Title Emerg	ency Dies	sel (Generator Operation	Revision No. 76
	· .	INE Ø INE ● INE		ATTACHMENT 341-5 (Continued) EDG 1 RED SAFEGUARD LOADS AND OTHER CRIT TES ENGINEERED SAFEGUARD LOAD TES PRIORITY PUMP FOR SAFETY SYSTEM TES ALTERNATE PUMP FOR SAFETY SYST TES VALVE COULD RENDER SYSTEM INOP	1 EM
	SYSTEM	BUS		EQUIPMENT	ann an
	CORE SPRAY SYSTEM CRITICAL VALVES	1A2 1A21 1A21A 1A21A 1A21A 1A21A 1A21B		V-20-15 SYSTEM 1 DISCHARGE VALVE (Δ IF V-20-40 IS OOS/1B21A) V-20-21 SYSTEM 2 DISCHARGE VALVE (Δ IF V-20-41 IS OOS/1AB2) V-20-3 NZ01A (SYS 1) PUMP SUCTION VALV V-20-33 NZ01D (SYS 2) PUMP SUCTION VALV V-20-12 SYSTEM 1 DISCHARGE VALVE V-20-27 SYSTEM 1 RECIR. TEST VALVE TO	
	CONT. SPRAY SYSTEM CRITICAL VALVES	1A21B 1A21B 1A21B 1A21B 1A21B 1A21B		V-21-9 PUMP 51A SUCTION V-21-7 PUMP 51B SUCTION V-21-11 DW SPRAY DISCHARGE V-21-17 TORUS CLG DISCHARGE V-21-18 TORUS SPRAY 5% DISCHARGE	
		1 1			

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OYSTER CREEK GENERATING STATION PROCEDURE

Number 341

Title

Revision No.

Emergency Diesel Generator Operation

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ATTACHMENT 341-6

<u>EDG 2</u>

ENGINEERED SAFEGUARD LOADS AND OTHER CRITICAL LOADS

- -- INDICATES ENGINEERED SAFEGUARD LOAD
- Ø INDICATES PRIORITY PUMP FOR SAFETY SYSTEM
- INDICATES ALTERNATE PUMP FOR SAFETY SYSTEM
- △ INDICATES VALVE COULD RENDER SYSTEM INOPERABLE

SYSTEM	BUS	EQUIPMENT
CORE SPRAY SYSTEM	1D 1D 1B2	 CORE SPRAY MAIN PUMP NZ01B (474KW) SYS 2 CORE SPRAY MAIN PUMP NZ01C (474KW) SYS 1 CORE SPRAY BOOSTER PUMP NZ03B (247KW) SYS 2
PUMPS	1B2	 CORE SPRAY BOOSTER PUMP NZ03C (247KW) SYS 1 - AUTO STARTS ONLY IF BOTH NZ03A AND NZ03B NOT RUNNING
CONT.	1B2	NOTE: MANUAL START ONLY. START PREVENTED FOR 200 SECONDS AFTER EDG BREAKER CLOSURE. ° CONTAINMENT SPRAY PUMP 51C (239KW) SYS 2
SPRAY SYSTEM PUMPS	1B2 2D 2D	° CONTAINMENT SPRAY PUMP 51D (239KW) SYS 2 ° ESW PUMP 52C (333KW) SYS 2 ° ESW PUMP 52D (333KW) SYS 2
LIQUID POISON SYSTEM (PUMP)	1B21	° LIQUID POISON PUMP NP02-B AND SQUIB VALVE NP05-B (25KW)
STANDBY GAS		NOTE: PRIORITY SGTS DEPENDS ON SYSTEM SELECTED ON PANEL 11R - ALL ASSOCIATED VALVES ARE AIR OPERATED.
TREATMENT SYSTEM FANS	1B24	° EF-1-9 (SGTS II) (13KW)
CRD SYSTEM PUMP	1B2	° CRD SYS. PUMP NC08B (200KW)
SERVICE WATER SYS. PUMP	1B3	° SERVICE WATER PUMP 1-2 (204KW)
RBCCW SYS. PUMP	1B2	° RBCCW PUMP 1-2 (159KW)
CONTROL ROOM HVAC SYSTEM FAN	1B3	° SUPPLY FAN, FN-826-008B (14KW)
POST ACCIDENT INSTRUMENT POWER PANEL (PAIPP)	1B2	° PAIPP-2, PDP-733-058 (1.8KW)

Sector A

	Ame	erGen. An Exelon Company	OYSTER CREEK GENERATING STATION PROCEDURE	Number 341
arityinari	Title			Revision No.
	Emer	gency Diesel G	enerator Operation	76

ATTACHMENT 341-6 (Continued)

<u>EDG 2</u>

ENGINEERED SAFEGUARD LOADS AND OTHER CRITICAL LOADS

-- INDICATES ENGINEERED SAFEGUARD LOAD

Ø INDICATES PRIORITY PUMP FOR SAFETY SYSTEM

INDICATES ALTERNATE PUMP FOR SAFETY SYSTEM

△ INDICATES VALVE COULD RENDER SYSTEM INOPERABLE

SYSTEM	BUS	EQUIPMENT
 CORE SPRAY SYSTEM CRITICAL VALVES	1AB2 1B21A 1B21A 1B21A 1B21A 1B21A 1B21A	 V-20-41 SYSTEM 2 DISCHARGE VALVE (Δ IF V-20-21 IS OOS/1A21) V-20-40 SYSTEM 1 DISCHARGE VALVE (Δ IF V-20-15 IS OOS/1A2) Δ V-20-4 NZ01B (SYS 2) PUMP SUCTION VALVE FROM TORUS Ø Δ V-20-32 NZ01C (SYS 1) PUMP SUCTION VALVE FROM TORUS □ Δ V-20-18 SYSTEM 2 DISCHARGE VALVE V-20-26 SYSTEM 2 RECIR. TEST VALVE TO TORUS
CONT. SPRAY SYSTEM CRITICAL VALVES	1B21B 1B21B 1B21B 1B21B 1B21B 1B21B	 Δ V-21-1 PUMP 51C SUCTION Δ V-21-3 PUMP 51D SUCTION Δ V-21-5 DW SPRAY DISCHARGE V-21-13 TORUS CLG DISCHARGE Δ V-21-15 TORUS SPRAY 5% DISCHARGE
 'B" BATTERY SI	HALL BE IN	I SERVICE TO CONSIDER EDG 2 OPERABLE.

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3.2 REACTIVITY CONTROL

Applies to core reactivity and the operating status of the Applicability: reactivity control systems for the reactor.

To assure reactivity control capability of the reactor. Objective:

Specification:

- Core Reactivity Α.
 - The SHUTDOWN MARGIN (SDM) under all operational conditions shall be equal 1. to or greater than:
 - (a) 0.38% delta k/k, with the highest worth control rod analytically determined; or
 - 0.28% delta k/k, with the highest worth control rod determined (b) by test.
 - 2. If one or more control rods are determined to be inoperable as defined in Specification 3.2.B.4 while in the STARTUP MODE or the RUN MODE, then a determination of whether Specification 3.2 A. is met must be made within 6 hours. If a determination cannot be made within the specified time period, then assume Specification 3.2 A.1 is not met.
 - If Specification 3.2.A.1 is not met while in the STARTUP Mode or the RUN MODE, meet Specification 3.2.A.1 within 6 hours or be in the SHUTDOWN CONDITION within the following 12 hours.
 - If Specification 3.2.A.1 is not met while in the SHUTDOWN CONDITION, 4. or the COLD SHUTDOWN CONDITION, then:
 - (a) Fully insert all insertable control rods within 1 hour, AND
 - Comply with the requirements of Specifications 3.2.C and 3.5.B. (b)
 - 5. If Specification 3.2.A.1 is not met while in the REFUEL MODE, then:
 - Immediately suspend CORE ALTERATIONS except for fuel assembly (a) removal, AND
 - (b) Immediately initiate action to fully insert all insertable control rods in control cells containing one or more fuel assemblies, AND
 - Comply with the requirements of Specifications 3.2.C and 3.5.B. (c)

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B. <u>Control Rod System</u>

1

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- The control rod drive housing support shall be in place during power operation and when the reactor coolant system is pressurized above atmospheric pressure with fuel in the reactor vessel, unless all control rods are fully inserted and Specification 3.2.A is met.
- 2. The Rod Worth Minimizer (RWM) shall be operable during each reactor startup until reactor power reaches 10% of rated power except as follows:
 - (a) Should the RWM become inoperable after the first 12 rods have been withdrawn, the startup may continue provided that a second licensed operator verifies that the licensed operator at the reactor console is following the rod program.
 - (b) Should the RWM be inoperable before a startup is commenced or before the first twelve rods are withdrawn, one startup during each calendar year may be performed without the RWM provided that the second licensed operator verifies that the licensed operator at the reactor console is following the rod program and provided that a reactor engineer from the Core Engineering Group also verifies that the rod program is being followed. A startup without the RWM as described in this subsection shall be reported in a special report to the Nuclear Regulatory Commission (NRC) within 30 days of the startup stating the reason for the failure of the RWM, the action taken to repair it and the schedule for completion of the repairs.

Control rod withdrawal sequences shall be established with a banked position withdrawal sequence so that the rod drop accident design limit of 280 cal/gm is not exceeded. For control rod withdrawal sequences not in strict compliance to BPWS, the maximum in sequence rod worth shall be $\leq 1.0\% \Delta K$.

3. The average of the scram insertion times of all operable control rods shall be no greater than:

Rod Length	Insertion Time
Inserted (%)	(Seconds)
5	0.375
20	0.900
50	2.00
90	5.00

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The average of the scram insertion times for the three fastest control rods of all groups of four control rods in a two-by-two array shall be no greater than:

		Insertion Time (Seconds)	
	5	0.398	
	20	0.954	
	50	2.120	
	90	5.300	

Any four rod group may contain a control rod which is valved out of service provided the above requirements and Specification 3.2.A are met. Time zero shall be taken as the de-energization of the pilot scram valve solenoids.

4. In service control rods which cannot be moved with control rod drive pressure shall be considered inoperable. If a partially or fully withdrawn control rod drive cannot be moved with drive or scram pressure, the reactor shall be brought to a shutdown condition within 48 hours unless investigation demonstrates that the cause of the failure is not due to a failed control rod drive mechanism collet housing. Inoperable control rods shall be valved out of service, in such positions that Specification 3.2.A is met. In no case shall the number of inoperable control rods valved out of service be greater than six during the power operation. If this specification is not met, the reactor shall be placed in the shutdown condition.

Control Rods shall not be withdrawn for approach to criticality unless at least two source range channels have an observed count rate equal to or greater than 3 counts per second.

C. <u>Standby Liquid Control System</u>

5.

- 1. The standby liquid control system shall be operable at all times when the reactor is not shut down by the control rods such that Specification 3.2.A is met and except as provided in Specification 3.2.C.3.
- 2. The standby liquid control solution shall have a Boron-10 isotopic enrichment equal to or greater than 35 atom %, be maintained within the cross-hatched volume-concentration requirement area in Figure 3.2-1 and at a temperature not less than the temperature presented in Figure 3.2-2 at all times when the standby liquid control system is required to be operable.

(a) If one standby liquid control system pumping circuit becomes inoperable during the RUN mode and Specification 3.2.A is met, the reactor may remain in operation for a period not to exceed 7 days, provided the pump in the other circuit is verified daily to be operable, otherwise be in the Shutdown condition within 24 hours.

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(b)	If the solution is outside the cross-hatched volume-concentration area but within the shaded volume-concentration area of Figure 3.2-1, return the Solution to the cross-hatched area within 7 days. If, after this time period, the requirement is still not met, submit a report to the NRC within 7 days advising them of plans to return the solution to the cross-hatched volume-concentration area.
(c)	If the solution is outside the cross-hatched volume concentration area and outside the shaded volume-concentration area of Figure 3.2-1, return the solution to within the shaded volume-concentration area of Figure 3.2-1 or be in the Shutdown condition within 24 hours.
(d)	If the solution temperature is less than the minimum shown in Figure 3.2-2, increase the temperature to greater than the minimum and verify the solution is within the shaded volume-concentration area of Figure 3.2-1 or be in the Shutdown condition within 24 hours.
(e)	If the enrichment requirement of 3.2.C.2 is not met:
	(1) Return the Boron-10 isotopic enrichment to greater than or equal to 35 atom % within 7 days of the receipt of the enrichment report. If, after this time period, the enrichment requirement is still not met, submit a report to the NRC within 7 days advising them of the plans to return the solution to greater than or equal to 35 atom % Boron-10 isotopic enrichment.
	(2) A check shall be made to ensure that the sodium pentaborate solution meets the original design

pentaborate solution meets the original design criteria by comparing the enrichment, concentration and volume to established criteria (Boron-10 equal to or greater than 82 pounds). If the sodium pentaborate solution does not meet the original criteria, be in the Shutdown condition within 24 hours.

D. <u>Reactivity Anomalies</u>

The difference between an observed and predicted control rod inventory shall not exceed the equivalent of one percent in reactivity. If this limit is exceeded and the discrepancy cannot be explained, the reactor shall be brought to the cold shutdown condition by normal orderly shutdown procedure. Operation shall not be permitted until the cause has been evaluated and appropriate corrective action has been completed. The NRC shall be notified within 24 hours of this situation in accordance with Specification 6.6.

OYSTER CREEK

3.2-4

Amendment No: 75, 124, 178

FIRE	ZONE	EQUIPMENT POTENTIALLY AFFECTED	ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE		
R.B. 11	19' ELEV. FZ-1A)	None	NA	NA	NA	NA		
GU 3E-9	<u>ces</u> : 911-41-041 911-41-042 Action Requ	(Hot Shutdown Path #3 for R (Cold Shutdown Path #1 for F ired:						
(1)	<u>IF</u>	Instrument Air is lost,						
	 (1) IF Instrument Air is lost, THEN V-2-90 in the Condensate Transfer Building should be closed promptly to prevent the CST from draining to the hotwell. Approximately 10.1 ft in the CST may be required for reactor vessel makeup during cooldown to cold shutdown. Makeup to the CST as necessary from Demineralized Water (procedure 320.1), High Purity (procedure 351.2), or the Fire Protection system (as last resort, close V-9-11, open V-9-9 and open V-11-247). 							

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F	FIRE ZONE	EQUIPMENT POTENTIALLY AFFECTED	ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE	
	.B. 95' ELEV. (RB-FZ-1B)	"A" ISOLATION CONDENSER Stm Vent Vlv (V-14-5) Control Ckt	Local Manual	RB 95' EL, East	307	NA	
		Stm Vent VIv (V-14-20)	Local Manual	RB 95' EL, East	307	NA	
		Control Ckt Shell Makeup Valve Power and Control Ckt (V-11-36)	Local Manual	RB 95' EL, East	307	NA	
		<u>"B" ISOLATION CONDENSER</u> DC Steam Inlet Vlv Ind Ckt (V-14-33)	Local Manual	RB 75' EL, East	307	NA	
		Stm Vent Vlv Control Ckt (V-14-1)	Local Manual	RB 95' EL, East	307	NA	
		Stm Vent VIv Control Ckt (V-14-19)	Local Manual	RB 95' EL, East	307	NA	
		Power and Control Ckt Shell Makeup Valve (V-11-34)	Local Manual	RB 95' EL, East	307	NA	
	<u>nces</u> : -911-41-041 -911-41-042	(Hot Shutdown Path #3 for RB-FZ- (Cold Shutdown Path #1 for RB-FZ				L	
Manual	Action Required	:					
1)	<u>IF</u> Ins	strument Air is lost,					
	THEN V-2-90 in the Condensate Transfer Building should be closed promptly to prevent the CST from draining to the hotwell. Approximately 10.1 ft in the CST may be required for reactor vessel makeup during cooldown to cold shutdown. Makeup to the CST as necessary from Demineralized Water (procedure 320.1), High Purity (procedure 351.2), or the Fire Protection system (as last resort, close V-9-11, open V-9-9 and open V-11-247).						

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FIRE ZONE	EQUIPMENT POTENTIALLY AFFECTED	ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE
R.B. 75' ELEV. (RB-FZ-1C)	CORE SPRAY SYS II Paraliel Vlvs. Power and Control Ckts (V-20-21, 41)	Local Manual	RB 75' EL, South	308	NA
	<u>"A" ISOLATION CONDENSER</u> AC Stm Isolation Vlv Power Ckt (V-14-30)	Local Manual	RB 75' EL, East	307	NA
	DC Stm Isolation VIv Pwr and Control Ckt	Local Manual	RB 75' EL, East	307	NA
	(V-14-31) DC Cond Return Valve Pwr and Control Ckt	Local Manual	RB 75' EL, East	307	NA
	(V-14-34) Steam Vent VIv Control Ckt (V-14-5)	Local Manual	RB 95' EL, East	307	NA
	Steam Vent Viv Control Ckt (V-14-20)	Local Manual	RB 95' EL, East	307	NA
	Shell Makeup VIv Power and Control Ckt (V-11-36)	Local Manual	RB 95' EL, East	307	NA

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FIRE ZONE	EQUIPMENT POTENTIALLY AFFECTED	ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE
R.B. 75' ELEV. (RB-FZ-1C) (cont'd)	"B" ISOLATION CONDENSER AC Stm Isol VIv Power Ckt (V-14-32) DC Stm Isol VIv Power, Ind and Control Ckt (V-14-33) DC Cond Rtn VIv Power, Ind and Control Ckt (V-14-35) AC Cond Rtn VIv Power, Ind and Control Ckt (V-14-37) Stm Vent VIv Isol Ckt (V-14-1) Stm Vent VIv Isol Ckt (V-14-19)	Local Manual Local Manual Local Manual None Local Manual	RB 75' EL, East RB 75' EL, East RB 75' EL, East Drywell RB 95' EL, East	307 307 307 307 307 307	NA NA NA NA
	Shell Makeup VIv Power and Control Ckt (V–11–36)	Local Manual	RB 95' EL, East	307	NA
	REACTOR WATER CLEANUP RWCU Inlet Isol Viv Cont Ckt (V-16-1)	Local Manual	RB 75' EL, East	307	NA
	ELECTRICAL DISTR. SYS. MCC DC-2	None	Drywell	303	NA
	CONTAINMENT SYSTEM Torus Temperature Elements TI-664-43B	None	NA	340.1	NA
		TI-664-43A	1F/2F	NA	NA

FIRE ZO	NE	EQUIPMENT POTENTIALLY AFFECTED	ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE
R.B. 75' (RB–FZ- (cont'd)						
Reference						
)11-41-041)11-41-042	(Hot Shutdown Path #3 for RB-FZ-1C) (Cold Shutdown Path #1 for RB-FZ-1C				
Manual A	Action Requ	lired:				
1)	<u>IF</u>	Instrument Air is lost,				
	<u>THEN</u>	V-2-90 in the Condensate Transfer Building s the CST may be required for reactor vessel m Water (procedure 320.1), High Purity (proced V-11-247).	nakeup during cooldown to c	old shutdown. Makeup to the CS	T as necessary from I	Demineralized
2) Cab	le failures n	nay cause DC-1 to trip.				
	<u>IF</u>	DC-1 trips				
	THEN	Either manually control the SDC valves V-17-	1, 2, 3, 55, 56 & 57			
		OR				
		Open all load breakers on MCC DC-1 and re- & 57. Note that the remaining breakers on M	close DC-B breaker #6 and CC DC-1 are not needed an	then re-close MCC DC-1 breaker d should remain open to isolate t	s for SDC valves V-1 he cable failures.	7-1, 2, 3, 55, 56

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FIRE ZON	IE EQUIPMENT POTENTIALLY AFFECTED	ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE
R.B. 51' ELEV. (RB-FZ-1D)				
References: GU 3E-911-41-0	1002, Rx. Pr Spray pump	essure Ind. PI-622-999 & 100	00, Offsite Pwr available; if spurio ient Spray Pump 1-4, ESW pump	usly opened EMRV,	then Core
GU 3E-911-41-0	LI-622-1001		-622-999 & 1000, Rx Wide Rang		
condit	old Shutdown' Path utilizes 'Alternate Decay Heat on (Core Spray, Containment Spray in Torus Coo below.				
Prompt Manual NOTE: The	<u>Actions</u> : se steps can be performed concurrently and are lis	ted in the order of priority but a	re dependent on actual plant sym	iptoms.	
	During a fire condition on the 51' elevation of the R such that 125 VDC from an external source will be by any means. Therefore, the following actions are	supplied to an EMRV, causing			
	The following action is required to preclude or term controls associated with the EMRV's. If the EOP's				
<u>IF</u>	One or more EMRV's exhibit abnormal or spurious	operation or there are insuffic	ient indications available to deten	nine the status of an	EMRV.
THEN	Ensure the reactor is scrammed in accordance with AND	h ABN-1 "Reactor Scram".			
	Place the disable switch on the rear of panel 1F/2F Panel 1F/2F (B-6-g) will alarm.	to the "DISABLE" position for	those EMRV's affected. <u>NOTE</u> : '	'EMRV DISABLED" a	annunciator on

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	FIRE ZO	NE	EQUIPMENT POTENTIALLY AFFECTED	ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE
R.I	3. 51' ELEV.	(RB–FZ–1	D) (cont'd)				
2)	<u>IF</u>	An EMR	√ is failed open.				
	THEN	Follow th	e Emergency Operating Procedures.				
3)	<u>CAUTION</u>	m to pe 2) S	he Core Spray parallel injection valves m ay also be lost. If the valves cannot be o assure adequate core cooling. Note tha ermissive may not be satisfied for approx CBA may be required to perform the mar om Rx. Bldg. 51' elevation.	controlled automatically/remot at there is 66 minutes to perfor imately 33 minutes leaving or	ely, then immediately dispatch an o rm this manual action from the start nly 33 minutes to perform this manu	perator to manually op of the event but the v al action.	pen the valve alve
	<u>IF</u> :	V-20-21 d	can not be operated from the control roor	m			
	THEN		an operator with a radio to MCC 1A21 lo ceed directly to 75' elevation and standby				perator should
	<u>NOTE 1</u> :	Torus co	oling must be initiated within 2 hours to p	revent losing NPSH requirem	ents for the Core Spray System		
4)	<u>NOTE:</u>		fire condition on the 51' elevation (RB-F2 er. This could cause a spurious isolation			ow logic circuitry of the	* "B" Isolation
	<u>IF</u>	no other	decay heat removal system is available,				
	THEN	override	the isolation signal by placing the individu	ual valve control switches to th	ne position desired.		
5)	<u>1F</u>	Instrume	nt Air is lost,				
	<u>THEN</u>	CST may	n the Condensate Transfer Building shou y be required for isolation condenser sho rocedure 320.1), High Purity (procedure	ell makeup during cooldown t	o cold shutdown. Makeup to the C	ST as necessary from	n Demineralized

FIRE ZONE	EQUIPMENT POTENTIALLY AFFECTED	ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE
R.B. 51' ELEV. (RB–FZ–1D) (conťd)	CORE SPRAY SYSTEM I Parallel Vivs Power and Control Ckts (V-20-15, 40)	Local Manual	RB 51' EL, NW	308	NA
	Booster Pump Disch. Press. Ind (PT-RV41A) and diff press. sw.	Local Gage (PI–40C)	RB 51' EL, NW	308	NA
	(DPS-RV40A&C) Core Spray Booster Pumps (NZ03A, C)	None	NA	NA	NA
	CORE SPRAY SYSTEM II Parallel Vivs Power and Control Ckts (V-20-21, 41)	Local Manual	RB 75' EL, South	308	NA
	Pumps NZ01B & NZ03B	NZ01D & NZ03D	CR	308	NA
	<u>Containment Istr.</u> Torus Temp Ind. TI-664-43 A&B	TE 40A Suction Header Temp. for Core & Cont. Spray,	TR IP01 Panel 1F <u>or</u> perform repair procedure	Repair Procedure	2400-APR- 3228.02

FIRE ZONE	EQUIPMENT POTENTIALLY AFFECTED	ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE
R.B. 51' ELEV. (RB–FZ–1D) (conťd)	<u>"A" ISOLATION CONDENSER</u> AC Stm Isol VIv Power Ckt (V-14-30) DC Stm Isol VIv Power and Control Ckt (V-14-31) DC Cond Rtn VIv Power and Control Ckt (V-14-34) Shell Makeup VIv Power and Control Ckt (V-11-36) LT-IG06A Ind. Circuit <u>"B" Isolation Condenser</u> Hi Flow Protection (IB05-B1 & B2 and IB11-B1 & B2)	Local Manual Local Manual Local Manual Local Manual None Override Isolation Signal	RB 75' EL, East RB 75' EL, East RB 75' EL, East RB 95' EL, East NA 1F/2F (Individual Valve Control Switch)	307 307 307 307 307 307	NA NA NA NA
	ELECTROMATIC RELIEF VLVS EMRV "A" Control Ckt. EMRV "B" Control Ckt. EMRV "C" Control Ckt. EMRV "D" Control Ckt.	EMRV "A" Disable Swt EMRV "B" Disable Swt EMRV "C" Disable Swt EMRV "D" Disable Swt Temporary Control and Indication for NR108D	Rear 1F/2F Rear 1F/2F Rear 1F/2F Rear 1F/2F NA	301 301 301 301 Repair Procedure	NA NA NA 2400–APR 3411.01 2400–APR 3411.04

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FIRE ZONE	EQUIPMENT POTENTIALLY AFFECTED	ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE
R.B. 51' ELEV. (RB–FZ–1D) (cont'd)	ELECTROMATIC RELIEF VLVS (cont'd) EMRV "E" Control Ckt.	EMRV "E" Disable Swt Temporary Control and	Rear 1F/2F NA	301 Repair Procedure	NA 2400–APR–
	CONTAINMENT SYSTEM	Indication for NR108E			3411.01 2400–APR– 3411.04
	Rx Low-Low Wtr LvI (RE02A) Inst. Circuit	None	NA	NA	NA
	Rx Low-Low Wtr LvI (RE02B) Inst. Circuit Rx Low-Low Wtr LvI (RE02C) Inst.	None	NA	NA	NA
	Circuit Rx Low-Low Wtr Lvl (RE02D) Inst.	None	NA	NA	NA
	Circuit	None	NA	NA	NA
L	l				

FIRE ZONE	EQUIPMENT POTENTIALLY AFFECTED	ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE
R.B. 51' ELEV. (RB-FZ-1D)	SHUTDOWN COOLING SYSTEM "A" Loop Flow (FI 17-1)	None	NA	305	NA
(cont'd)	"B" Loop Flow (FI 17-2)	None	NA	305	NA
	"C" Loop Flow (FI 17-3)	None	NA	305	NA
· · ·	<u>"A" FUEL ZONE LEVEL</u> LI–IA94A PI–622–849	"C" Fuel Zone Lvi. (LI–622–1001) (PI–622–999)	CR PNL 5F/6F or RSP ("B" 480V Swgr Rm)	410 346	NA NA
	<u>"B" FUEL ZONE LEVEL</u> LI–IA94B PI–622–850	"D" Fuel Zone Lvl. (LI-622-1002)	CR PNL 5F/6F or RSP ("B" 480V	410 346	NA NA
	RX LEVEL/PRESSURE INSTR.	(PI-622-1000)	Swgr Rm)	540	
	GEMAC Wide Range Level Ind. (LI–IA13)	Install Local Gage (LI-626-1007)	RK01 (R.B. 75' EL, East)	Repair Procedure	2400–APR– 3665.01
	RBCCW SYSTEM Pump 1-1 Pump 1-2 S/D Clg Hx Outlet Vlv	None None Local Manual	NA NA S/D Clg Room	NA NA 305	NA NA NA
	Power and Control Ckt (V-5-106)				

FIRE ZONE	EQUIPMENT POTENTIALLY AFFECTED	ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE
R.B. 51' ELEV. (RB–FZ–1D) (cont'd)	<u>CONT. SPRAY SYSTEM I</u> Drywell Spray Isol. Valve (V-21-11) Pwr. and Control Ckt.	Local Manual	R.B. 51' EL. East	310	NA
	Cont Spray System DC Control Power	Local Manual	See Manual Actions Below	NA	NA
	CONT SPRAY SYSTEM II Cont Spray System DC Control Power	Local Manual	See Manual Actions Below	NA	NA
	RX WTR CLEANUP SYSTEM Aux Pump Suction Isol VIv. Pwr and Control Ckt (V-16-2)	Local Manual	R.B. 51' EL. South	303	NA
	Cleanup Inlet Isol Vlv. Pwr and Control Ckt (V-16-14)	Local Manual	R.B. 51' EL. South	303	NA
	High Press. Isol. Switch (PS-215-1044)	High Press. Isol SW (PS–IJ04A)	R.B. 75' EL. South	303	NA

	FIRE ZONE	EQUIPMENT POTENTIALLY AFFE	1	ALTERNATE ONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE
R.B. (cont	51' ELEV. (RB–FZ– ⁻ 'd)	ID)					
Addit	ional Manual Actions	Required:					
1.	pumps: a. Containment	Spray System II Containmer	nt Spray Pump 1	-4 and ESW Pump 1-4 ar	to prevent loosing NPSH for the co e designated for use during hot sl , no emergency lighting is provide	nutdown with an EMR	
		he following valves can be p s supply breaker on MCC 1			y System if necessary. However System I.	prior to manually ope	erating the
	Location Require - <u>TORUS</u> Location	: d Position: CLG Discharge Valve	V-21-5 (Sys II) V-21-5 RB 23' E Closed V-21-13 (Sys II) V-21-13 RB 23' Open	ast V-21-1 V-21-1	1 (Sys I) 1 RB 51' East 7 (Sys I) 7 RB 23' North		
	c. Emergency lig door. This as	hting to operate the System sembly consists of a portabl	e DC light attack	ned to an emergency lighti	3, is located near the drywell wall ng battery by 40' of cable. If nee operators will be required to oper	ded, this cable is unw	ound and the
2.	Open V-1	-15-30 for desired flow on F		of instrument air by perfo	rming the following:		

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F	IRE ZONE	EQUIPMENT POTENTIALLY AFFECTED	ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE
R.B. 23	ELEV. (RB-FZ-1	E)				
Referen	<u>ces</u> :					
GU 3E-'	911-41-040	Hot Shutdown Path #1 – "B" Isolatio Pressure 1	n Condenser, "B" CRD Pump, Ind. PI-622-850, Offsite Pwr av		Zone Level Ind. LI-IA	194B, Rx.
GU 3E-	911-41-043		(with repairs), Core Spray Pu LI-IA94B, Rx. Pressure Ind. P epairs) and Torus Level Indica	I-622-850, Rx Wide Range LvI Ind	ith repairs), ESW pur LI-IA13, Torus Wate	np, Fuel Zone r Temperature
NOTE:		lown' Path utilizes 'Alternate Decay He Spray, Containment Spray in Torus Co				
Prompt NOTE:	Manual Actions These steps c	: an be performed concurrently and are l	listed in the order of priority bu	t are dependent on actual plant sy	mptoms.	
1)	During a fire cond 125 VDC from an control switch on	lition on the 23' elevation of the Reactor external source will be supplied to an E 1F/2F.	Building (RB-FZ-1E), the poss MRV, causing it to fail open. T	ibility exists that hot shorts will deve his spuriously opened EMRV will b	elop in the EMRV cab e reclosable using the	ling such that e normal EMRV
	CAUTION:	The following action is required to prec manual controls associated with the EN position.	lude or terminate a spuriously of MRV's. If the EOP's require the	opened EMRV. This action will disa a use of the EMRV's, the disable sw	able the ADS, High Pr vitches can be returne	essure and d to the normal
	<u>IF</u>	One or more EMRV's exhibit abnormal	or spurious operation,			
		<u>OR</u> There are insufficient indications availa	ble to determine the status of a	an EMRV.		
	THEN	Ensure the reactor is scrammed in acc AND	ordance with ABN-1 "Reactor S	Scram",		
		ANU	panel 1F/2F to the "DISABLE"			

	FIRE ZONE EQUIPMENT POTENTIALLY AFFECTED			ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE
R.B.	. 23' ELEV	RB-FZ1	E (Conťd)				
Pro	mpt Manu	al Actions	(cont'd):				
2)	<u>NOTE:</u>	The Reac	tor Recirculation pump control circuits a	are located in this fire zone and t	hey have to be tripped to utilize	the Fuel Zone Level I	ndicators.
	<u>if</u> <u>Then</u>		tor Recirculation Pumps won't trip from cked out (69 switch) locally at their resp		ese pumps are not required		
3)	IF	Instrumen	t Air is lost,				
	<u>THEN</u>	CST may Demineral	the Condensate Transfer Building shou be required for isolation condenser she lized Water (procedure 320.1), High Pu open V-11-247).	ell makeup during cooldown to co	old shutdown. Makeup to the CS	T as necessary from	

FIRE ZONE	EQUIPMENT POTENTIALLY AFFECTED	ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE
R.B. 23' ELEV. (RB–FZ–1E) (cont'd)	<u>CRD HYDRAULIC SYSTEM</u> CRD Flow to Rx Indication (FI-RD36)	Local Gage (FI225998)	RB 51' EL, SE	302.1	NA
	CORE SPRAY SYSTEM I Booster Pump "C" (NZ03C)	Booster Pump "A" (NZ03A)	C.R. Panel 1F/2F	308	NA
	"A" Pump Suct VIv	Local Manual	RB –19' EL, NW	308	NA
	(V-20-3) "C" Pump Suct Vlv (V-20-32)	Local Manuai	RB –19' EL, NW	308	NA
	Parallel VIv (V-20-40)	Local Manual	RB 51' EL, NW	308	NA
	Booster Pmp Diff Press Sw (DPS-RV40A) CORE SPRAY SYSTEM II	PI-RV43A	1F/2F	308	NA
	Booster Pumps "B", "D"	None	NA	308	NA
	Power Ckts (NZ03B,D) Core Spray Pump Suction Vlvs Power and Control Ckts	Local Manual	RB –19' EL, SW	308	NA
	(V-20-4,33) Parallel VIvs Power	Local Manual	RB 75' EL, South	308	NA
	and Ckts (V-20-21, 41) Booster Pump Disch. Press Ind. (PI-RV43B) and Diff Press Sw (DPS–RV40B & D)	Local Gage (PI–RV40B)	RB 23' EL, South	308	NA
	"A" ISOLATION CONDENSER AC Stm Isol Viv Power and Control Ckt (V-14-30)	Local Manual	RB 75' EL, East	307	NA

FIRE ZONE	EQUIPMENT POTENTIALLY AFFECTED	ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE
R.B. 23' ELEV. (RB–FZ–1E) (conťd)	<u>"A" ISOLATION CONDENSER</u> (cont'd) DC Stm Isol VIv Power & Control Ckt (V-14-31) AC Cond Rtn. VIv Power & Control Ckt (V-14-36) DC Cond Rtn. VIv Power	Local Manual None Local Manual	RB 75' EL, East NA RB 75' EL, East	307 307 307	NA NA NA
	& Control Ckt (V-14-34) <u>"B" ISOLATION CONDENSER</u> AC Cond. Rtr Isol Viv Power Ckt (V-14-37)	None	Drywell	307	NA
	DC Steam Line VIv Control & Ind (V–14–33) DC Cond. VIv Control & Ind (V–14–35)	Local Manual Local Manual	RB 75' EL, East RB 75' EL, East	307	NA
	ELECTROMATIC RELIEF VALVES EMRV "A" Control Ckt EMRV "B" Control Ckt EMRV "C" Control Ckt EMRV "D" Control Ckt	EMRV "A" Disable Swt EMRV "B" Disable Swt EMRV "C" Disable Swt EMRV "D" Disable Swt	Rear CR PNL 1F/2F Rear CR PNL 1F/2F Rear CR PNL 1F/2F Rear CR PNL 1F/2F	301 301 301 301	NA NA NA NA
		Temporary Control & Indication for NR108D	NA	Repair Procedures	2400-APR- 3411.01 2400-APR- 3411.03 2400-APR- 3411.04

FIRE ZONE	EQUIPMENT POTENTIALLY AFFECTED	ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE
R.B. 23' ELEV. (RB–FZ–1E) (cont'd)	ELECTROMATIC RELIEF VALVES (cont'd) EMRV "E" Control Ckt	EMRV "E" Disable Swt	Rear CR Pnl 1F/2F	301	NA
		Temporary Control & Indication for NR108E	NA	Repair Procedures	2400-APR- 3411.02 2400-APR- 3411.01 2400-APR- 3411.04

FIRE ZONE	EQUIPMENT POTENTIALLY AFFECTED	ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE
R.B. 23' ELEV. (RB-FZ-1E) (cont'd)	SHUTDOWN COOLING SYS. "A" SDC Pump Pwr and Control Ckt "B" SDC Pump Pwr and Control Ckt "C" SDC Pump Pwr and Control Ckt "A" Loop Suct Vlv Pwr & Control Ckt (V-17-1) "B" Loop Suct Vlv Pwr & Control Ckt (V-17-2) "C" Loop Suct Vlv & Control Ckt (V-17-3) "A" Loop Disch Vlv Pwr & Control Ckt (V-17-55) "B" Loop Disch Vlv Pwr & Control Ckt (V-17-56) "C" Loop Disch Vlv Pwr & Control Ckt (V-17-57)	LSP-1A2 RSP None Local Manual Local Manual Local Manual Local Manual Local Manual	"A" 480V Swg. Room "B" 480V Swg. Room NA SDC Room SDC Room SDC Room SDC Room SDC Room SDC Room	305, 346 305, 346 305 305 305 305 305 305 305	NA NA NA NA NA NA NA NA

FIRE ZONE	EQUIPMENT POTENTIALLY AFFECTED	ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE
R.B. 23' ELEV.	SHUTDOWN COOLING SYS.				
(RB-FZ-1E)	(cont'd)				
(cont'd)	SDC Sys Outlet Isol VIv	LSP-1AB2	RB 23' EL., NE	305, 346	NA
	Pwr & Control Ckt				
	(V-17-54) SDC Sys Inlet Isol VIv	LSP-1AB2	RB 23' EL., NE	305, 346	NA
	Pwr & Control Ckt	LOI -TAD2		000, 040	
	(V-17-19)				
	Loop Disch Press Ind	Local Gages	SDC Room	305	NA NA
	(PI-RV09 A, B, C)	(PIT-RV06, A,B,C)			
	Rx LEVEL/PRESS INSTR.				
	Fuel Zone Lvi "C", "D"	Fuel Zone Lvl "A",	C.R. Pnl 5F/6F	410	NA
	(LI-622-1001, 1002)	"B" (LI-IA-94A, B)			
	Fuel Zone Press "C",	Fuel Zone Press "A"	C.R. Pnl 5F/6F	410	NA
	"D" (PI-622-999, 1000)	"B" (Pl-622-849,850)			
	CONTAINMENT INSTR. Torus Temp Ind.	TE-644-30B or	Control Room Panel 19R	Repair	2400-APR-
	(TI-664-43 A & B)	TE-664-33B	SS1 TI-664-42B	Procedure	3228.02
	(
	RBCCW SYSTEM				
	1-1 RBCCW Pump Pwr Ckt	None	NA	309.2	NA
	1-2 RBCCW Pump Pwr Ckt	None	NA	309.2	NA

FIRE ZONE	EQUIPMENT POTENTIALLY AFFECTED	ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE
R.B. 23' ELEV. (RB-FZ-1E) (cont'd)	RBCCW SYSTEM (Cont'd) RBCCW from DW Isol VIv (V-5-167) Pwr & Control	Local Manual	RB 23' EL., East	309.2	NA
	Ckt SDC heat Exchangers Outlet VIv. (V-5-106) Power & Control Ckt	Local Manual	SDC Room	305	NA
	CONTAINMENT SPRAY SYS. Cont Spray Pump 1-1 (51-A)	None	NA	310	NA
	Cont Spray Pump 1-2	None	NA	310	NA
	(51-B) Cont Spray Pump 1-3 (51-C)	Repair Pwr Feeder Use Local Control At USS 1B2	"B" 480V Swgr Room	310	2400–APR– 3214.01
	Cont Spray Pump 1-4 (51-D)	Repair Pwr Feeder Use Local Control At USS 1B2	"B" 480V Swgr Room	310	2400–APR– 3214.01
	51A Pump Suct VIv	Local Manual	RB-19' EL., NE	310	NA
	(V-21-9) 51B Pump Suct Vlv (V-21-7)	Local Manual	RB-19' EL., NE	310	NA
	51C Pump Suct VIv	Local Manual	RB-19' EL., NE	310	NA
	(V-21-1) 51D Pump Suct Vlv (V-21-3)	Local Manual	RB-19' EL., NE	310	NA
	Sys I DW Spray Isol VIv	Local Manual	RB-19' EL., NE	310	NA
	Sys I Torus CLG Discharge Vlv (V-21-17)	Local Manual	RB-23' EL., N	310	NA

FIRE ZONE	EQUIPMENT POTENTIALLY AFFECTED	ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE
R.B. 23' ELEV. (RB–FZ–1E) (cont'd)	<u>CONTAINMENT SPRAY SYS</u> . (Cont'd) Sys II DW Spray Isol VIv (V-21-5) Sys II TORUS CLG Discharge VIv (V-21-13) Sys I, Sys II Flow Ind (FT-IPO3 A, B)	Local Manual Local Manual None	RB-23' EL., SE RB-23' EL., South NA	310 310 310	NA NA NA
	EMERG SERV WTR. SYS. ESW Disch Vlv., Sys I (V-3-88) ESW Disch Vlv., Sys II (V-3-87)	Local Manual Local Manual	RB 23' EL., North RB 23' EL., South	310 310	NA NA
	ELECTRICAL DISTRIBUTION MCC 1A21A MCC 1A21B MCC 1B21A MCC 1B21B MCC 1B21B MCC 1AB2 MCC DC-1 RECIRC SYSTEM Recirc Pump Disch Vlv NG03E (V-37-54) Power And Control Ckt	None None None None None None	NA NA NA NA NA NA	338 338 338 338 338 339 340.1	NA NA NA NA NA NA
		LSP-1AB2	RB 23' EL., NE	301, 305, 346	NA
	REACTOR CLEANUP SYSTEM Inlet Isol VIv (V-16-1)	RWCU Aux Relay Pnl. (ER-215-087)	A/B Battery Room	303	NA

Fl	RE ZONE	EQUIPMENT POTENTIALLY AFFECTED	ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE
	8. 23' ELEV B-FZ-1E) (cont'd)	. <u>MSIV's</u> Inner MSIV (North) (NS03A) Inner MSIV (South) (NS03B)	Outer MSIV (North) (NS04A) Outer MSIV (South) (NS04B)	C.R. Pnl 11F C.R. Pnl 11F	301 301	NA NA
Manual /	Action Requ	lired:		<u></u>	<u> </u>	<u></u>
(1)		ass Valves V-15-30 and V-15-237 can be nps. Note that FI-225-998 can be used for		osed after the Fire is extinguished	if RPV Makeup is rec	uired using the
(2)	Recharge	e V-11-34 Accumulator per Procedure 307	as required (accumulator is sized	d for approximately 5 strokes).		
(3)	<u>IF</u>	V-20-41 has to be manually opened,				
	<u>THEN</u>	It will be necessary to de-energize MCC 1 of the valve.	AB2 by opening VMCC 1B2, Uni	t C01 and VMCC 1A2, Unit B02 to	prevent future spuriou	is operations
(4)	<u>IF</u>	V-20-4, V-21-1 (or V-21-3) and V-21-13 ha	ave to be manually opened and V	-21-5 has to be manually closed,		
	THEN	It will be necessary to de-energize MCC 1	B21A & 1B21B by opening supply	y breakers B01 and D01 at MCC 1	321 to prevent future	spurious
		operations of the valves.				
		operations of the valves.				

FIRE ZONE	EQUIPMENT POTENTIALLY AFFECTED	ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE
R.B. –19' ELEV. NORTHWEST (RB-FZ-1F3)	CRD HYDRAULIC SYSTEM "A" CRD Pump (NCO8B) "B" CRD Pump (NCO8B)	None None	NA NA	302.1 302.1	NA NA
	RBCCW SYSTEM Disch Hdr Press (PT-IA18)	Local Gages PI-50, 51	RB 51' EL East on Pump Disch Pipes	309.2	NA
	CORE SPRAY SYSTEM I "A" Core Spray Pump (NZ01A)	None	NA	308	NA
	"C" Core Spray Pump	None	NA	308	NA
	(NZ01C) "A" Pump Suction VIv. (V-20-3)	Local Manual	RB –19' EL NW	308	NA
	"C" Pump Suction VIv.	Local Manual	RB –19' EL NW	308	NA
	(V-20-32) Main Pump Disch. Press. Ind. (PI-RV04A)	Local Gages (PIT-RV03A,PI-29A,C)	RB –19' EL NW	308	NA
	Rx LEVEL/PRESS INSTR. Fuel Zone LvI "C" "D" (LI-622-1001, 1002)	Fuel Zone Lvl "A", "B" (LI-IA94 A, B)	CR Pnl 5F/6F	410	NA
	Fuel Zone Press "C" "D"	Fuel Zone Press "A",	CR Pnl 5F/6F	410	NA
	CONTAINMENT INST. Torus Level Indication (LT-IP-09 A, B)	Wide Range Torus Level (LT-37, 38)	CR Pnl 16R	412.1	NA

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FIRE ZONE	EQUIPMENT POTENTIALLY AFFECTED	ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE
R.B. –19' ELEV. SOUTHWEST	CORE SPRAY SYSTEM II "B" Core Spray Pump	None	NA	308	NA
(RB-FZ-1F2)	(NZ01B) "D" Core Spray Pump (NZ01D)	None	NA	308	NA
	(N201D) "A" Pump Suction VIv. (V-20-3)	Local Manual	R.B19' EL., NW	308	NA
	"B Pump Suction VIv. (V-20-4)	Local Manual	R.B. –19' EL., SW	308	NA
	"C" Pump Suction VIv. (V-20-32)	Local Manual	R.B. –19' EL., NW	308	NA
	"D" Pump Suction VIv. (V-20-33)	Local Manual	R.B. –19' EL., SW	308	NA
	Main Pump Disch. Press. Ind. (PI-RV04B)	Local Manual (PIT-RV03B,PI-29B,D)	R.B. –19' EL., SW	308	NA
R.B. –19' ELEV. TORUS ROOM (RB-FZ-1F5)	CORE SPRAY SYSTEM II "B" Core Spray Pump (NZ01B) "D" Core Spray Pump (NZ01D)	None None	NA NA	308 308	NA NA
	CONTAINMENT INSTR. Torus Temp Indications (TI-664-43 A & B)	None	NA	NA	NA
R.B. –19' ELEV. NORTHEAST (RB-FZ-1F4)	CONTAINMENT SPRAY SYS I Cont Spray Pump 1-1 (51A) Cont Spray Pump 1-2 (51B)	None None	NA NA	310 310	NA NA

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FIRE ZONE	EQUIPMENT POTENTIALLY AFFECTED	ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE
R.B. –19' ELEV. NORTHEAST (cont'd) (RB-FZ-1F4)	<u>CONTAINMENT SPRAY SYS I</u> 51A Pump Suct VIv. (V-21-9) 51B Pump Suct VIv. (V-21-7)	Local Manual Local Manual	RB –19' EL, NE RB –19' EL, NE	310 310	NA NA
R.B. –19' ELEV. SOUTHEAST (RB-FZ-1F1)	CONTAINMENT SPRAY SYS II Cont Spray Pump 1-3 (51C) Cont Spray Pump 1-4 (51D) 51C Pump Suct VIv (V-21-1) 51D Pump Suct VIv (V-21-3)	None None Local Manual Local Manual	NA NA R.B. –19' El., SE R.B. –19' El., SE	310 310 310 310 310	NA NA NA NA

47.0 References:

relefendes.

 GU 3E-911-41-040
 (Hot Shutdown Path #1 for RB-FZ-1F)

 GU 3E-911-41-042
 (Cold Shutdown Path #1 for RB-FZ-1F)

Manual Action Required:

- (1) For a Fire in RB-FZ-1F3, RPV makeup can be provided from the Condensate Storage Tank (if required) by manually opening Core Spray Supply Valve V-20-1 and Core Spray Condensate Transfer Valve V-20-2 and manually closing Core Spray Torus Suction Valve V-20-4 so that Core Spray System II train B pump suction is aligned to the condensate storage tank. If Core Spray suction valve V-20-4 cannot be positioned using remote control switch on Panel 1F/2F, turn off breaker at MCC 1B21A and position valve manually.
- (2) For a fire in RB-FZ-1F1, -1F2, -1F4 or -1F5, RPV makeup can be provided (if required using the CRD pumps by manually opening CRD bypass valves V-15-30 (throttle) and V-15-237 while closing V-15-52 (if necessary).
- (3) IF Instrument Air is lost,
 - THEN V-2-90 in the Condensate Transfer Building should be closed promptly to prevent the CST from draining to the hotwell. Approximately 19.5 ft in the CST may be required for isolation condenser shell makeup during cooldown to cold shutdown. Makeup to the CST as necessary from Demineralized Water (procedure 320.1), High Purity (procedure 351.2), or the Fire Protection system (as last resort, close V-9-11, open V-9-9 and open V-11-247).

FIRE ZONE	EQUIPMENT POTENTIALLY AFFECTED	ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE
	SHUTDOWN COOLING SYSTEM				
R.B. SDC ROOM	"A" SDC Pump				
(RB-FZ-1G)	"B" SDC Pump	LSP-1A2	"A" 480V Swgr. Rm.	305, 346	NA
	"C" SDC Pump	RSP	"B" 480V Swgr. Rm.	305, 346	NA
	"A" Loop Suct Vlv	None	NA	305	NA
	(V-17-1)	Local Manual	SDC Room	305	NA
	"B" Loop Suct VIv				
	(V-17-2)	Local Manual	SDC Room	305	NA
	"C" Loop Suct VIv			0.05	
	(V-17-3)	Local Manual	SDC Room	305	NA
	"A" Loop Disch Vlv				
	(V-17-55)	Local Manual	SDC Room	305	NA
	"B" Loop Disch Vlv				
	(V-17-56)	Local Manual	SDC Room	305	NA
	"C" Loop Disch Vlv				
	(V-17-57)	Local Manual	SDC Room	305	NA
	Loop Disch Press Ind				
	(PI-RV09 A, B, C)	Local Gages	SDC Room	305	NA
	High Suct Temp. Pump	(PIT-RV06 A, B, C)			
	Trip Temp Switches	None	SDC Room	305	NA
	(TS-42 A, B, C)				
	Low Suct Press Pump				
	Trip Press Switches	None	SDC Room	305	NA
	(PS-43 A, B, C)				
References:					
GU 3E-911-41-040	(Hot Shutdown Path #1 for RB-FZ-10	G)			
GU 3E-911-41-043	(Cold Shutdown Path #3 for RB-FZ-1	1G)			
NOTE: This 'Cold Shute	lown' Path utilizes 'Alternate Decay Heat	t Removal' per procedure 200	0-OPS-3024.27, Section 4.4 to ap	proach the Cold Shu	tdown condition
(Core Spray, Co	ontainment Spray in Torus Cooling, and E	EMRV's). It may be necessary	y to perform repairs on affected eq	uipment as identified	in the matrix.
Manual Action Required					
	ent Air is lost,				
· · ·					
<u>THEN</u> V-2-90 ii	n the Condensate Transfer Building shou	Id be closed promptly to preve	ent the CST from draining to the h	otwell. Approximatel	y 17.4 ft in the
CST ma	y be required for isolation condenser she	Il side makeup. Makeup to th	e CST as necessary from Demine	ralized Water (proce	dure 320.1),
	rity (procedure 351.2), or the Fire Protect	the second and the land man and the	as V/O 11 anon V/O O and anon V	/ 11 047\	

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FIRE ZONE	EQUIPMENT POTENTIALLY AFFECTED	ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE
TRUNNION ROOM (RB-FZ-1H)	<u>MSIVs</u> Outer MSIV (North) (NS04A) Outer MSIV (South) (NS04B)	Inner MSIV (North) (NS03A) Inner MSIV (South) (NS03B)	C.R. Pnl 11F C.R. Pnl 11F	301 301	NA NA
THEN V-2-S in the Dem	(Hot Shutdown Path #1 for RB-FZ-1 (Cold Shutdown Path #1 for RB-FZ- ument Air is lost, 90 in the Condensate Transfer Building e CST may be required for isolation cor ineralized Water (procedure 320.1), Hig 9 and open V-11-247).	1H) should be closed promptly to ndenser shell makeup during c	ooldown to cold shutdown. Makeu	p to the CST as nec	essary from

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	FIRE ZONE	EQUIPMENT POTENTIALLY AFFECTED	ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE			
416	SO SWGR RM 1	C (TB-FA-3A)							
	f <u>erences</u> : 3E-911-41-04		solation Condenser, "B" CRD Pu Pressure Ind. PI-622-999 & 1000	mp, Condensate Transfer Pump, Fue), Offsite Pwr available	I Zone Level Ind. LI-6	22-1001 & 1002,			
GU	GU 3E-911-41-042 Cold Shutdown Path #1 – "B & C" SDC Pumps, "B" CRD, RBCCW, Service Water Pumps, Fuel Zone Level Ind. LI-622-1001 & 1002, Rx. Pressure Ind. PI-622-999 & 1000 and Reactor Wide range level indicator LI-IA13								
Pro	ompt Manual A	ctions:							
		steps can be performed concurrently and	d are listed in the order of priority	/ but are dependent on actual plant sy	mptoms.				
1)		m was completed in control room, if a so	cram was deemed necessary.						
2)	<u>NOTE:</u> C	ST may drain to the Hotwell on Loss of Ir	nstrument Air.						
	<u>IF</u> C	ST Level indicator is not available in the	control room or Instrument Air is	lost,					
	ho ma	2-90 in the Condensate Transfer Building twell. Approximately 19.5 ft in the CST (ikeup during cool down to cold shutdowr 1.2), or the Fire Protection system (as la	check local indicator if necessar n. Makeup to the CST as necess	y) may be required for isolation conde ary from Demineralized Water (proce	enser shell and reacto	r vessel			
3)	CAUTION:	If CO₂ was discharged, TB-FA-3B (4 Apparatus (SCBA) will be required f		due to a common discharge header.).	Therefore, Self Conta	ined Breathing			
		or to Reactor Pressure decreasing to 31 juired to assure adequate core cooling:	0 psig, perform the following to p	prevent the core spray pumps from inj	ecting, provided these	e pumps are not			
	а) From the control Room, trip 4160V 1A Pumps NZ01A and NZ01D.	Switchgear incoming breakers 1	A and S1A to de-energize the 1C 416	60V Switchgear to sto	p Core Spray			
	b) At the diesel building, trip EDG-1 outpu	it breaker and place EDG-1 mod	e switch in 'stop' to stop Core Spray I	Pumps NZ01A and N	Z01D.			
	с) Open the breakers on 4160V Swgr. 1D	for Core Spray Pumps NZ01B a	and NZ01C, and place 69-permissive	switches in 'trip'				

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FIRE ZONE	EQUIPMENT POTENTIALLY AFFECTED	ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE
4160 SWGR RM 1C (TB–FA–3A) (conťď)	ELEC. SWGR 4160V Bus 1C 125V DC Control Power to 4160V Bus 1C from 125V DC Bus "C"	None None	NA NA	337 340.3	NA NA
	#1 EDG Control Circuits DG-1 Breaker Control Circuits	None None	NA NA	NA NA	NA NA
	CORE SPRAY SYSTEM "B" Core Spray Pump Control Ckt (NZ01B) "C" Core Spray Pump Control Ckt (NZ01C)	Local Breaker Oper. (see man act below) Local Breaker Oper. (see man act below)	4160V Swgr. 1D 4160V Swgr. 1D	308 308	NA NA
	EMER. SERV WTR SYS "C" ESW Pump Control Ckt (52C) "D" ESW Pump Control	None	NA	310	NA
	Ckt (52D)	NOTE		310	
	RBCCW Disch. Hdr. Press Ind. (PT-IA18) Serv. Wtr. Disch Hdr. Press. (PT-6)	Local Gages (PI–50, 51) Local Gages (PI–50, 30)	RB 51' EL, East on Pump Disch. Pipes Intake Structure	309.2 322	NA NA
	#2 RBCCW Pump Control Ckt.	Local bkr operation (USS 1B2)	'B' 480V Room	309.2	NA
	SHUTDOWN COOLING SYS. V-17-19 & V-17-54	Panel 3F Test Plugs	Control Room Panel 3F	305	NA

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FI	FIRE ZONE EQUIPMENT ALTERNATE LOCATION OF ALTERNATE APPLICABLE DOCUMEN POTENTIALLY AFFECTED CONTROL/INDICATION CONTROL/INDICATION PROCEDURE(S) REFERENCE								
4160 SW	/GR RM 1C	(TB-FA-3A) (cont'd)							
Additiona	al Manual A	ctions Required:							
(1)	(1) It may be necessary to use the CRD bypass line due to the loss of instrument air by performing the following:								
	 Open V-15-237 Throttle V-15-30 for desired flow on FI-225-2 Close V-15-52 								
(2)	Cable fai	lures may cause VACP-1 to trip.							
	<u>IF</u>	CST level indication (5F-27), RBCCW Pressu room.	re Indication (13R-63) and/o	r Service Water Pressure Indication	on (5F-60) are lost in	the control			
	<u>THEN</u>	Read all indicators locally							
		AND (when time permits)							
		Open all load breakers on VACP-1 and re-close indicators. Note that the breakers 16, 23, 25 & 2				quired			
(3)	Recharg	e V-11-34 Accumulator per Procedure 307 as i	required (accumulator is size	d for approximately 5 strokes).					
(4)	IF	the C battery charger is not available							
	<u>THEN</u>	V-14-35 can be cycled for short-term operation Isolation Condenser with V-14-35 left open or		ut V-14-37 will have to be utilized t	for long-term operation	on of the			
(5)	RBCCW	Pump 1-2 cable failure may cause a spurious	pump trip.						
	<u>IF</u>	RBCCW Pump 1-2 spuriously trips							
	THEN	Remove trip fuses from breaker at USS 1B2 a	and re-close breaker.						
(6)	Cable fa	ilures may prevent operation of Shutdown Coo	ling Isolation Valves V-17-19	and V-17-54 from the Main Contr	ol Room.				
	<u>IF</u>	V-17-19 & V-17-54 cannot be opened from C	ontrol Room Panel 11F						
	<u>THEN</u>	Operate test plugs in Panel 3F per procedure	305, section 9.0.						

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FIRE ZONE	EQUIPMENT POTENTIALLY AFFECTED	ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE
4160 SWGR RM 1D	(TB–FA–3B)				
References: GU 3E-911-41-040		olation Condenser, "A" CRD Pu sure Ind. PI-622-849, Offsite Pw	mp, Diesel Fire Pump (IC makeup), Fu r available	el Zone Level Ind. Li	I-IA94A, Rx.
GU 3E-911-41-042			0, RBCCW and Service Water Pumps, stor Wide Range Level Indicator LI-IA1		. LI-IA94A, Rx.
Prompt Manual Acti	ons:.				
		are listed in the order of priority	but are dependent on actual symptom	19	
<u>NOTE.</u> These side	ps can be performed concurrently and	are noted in the order of priority	but are dependent on actual symptom		
1) Confirm scram	was completed in control room, if a sc	ram was deemed necessary.			
2) <u>CAUTION</u> :	If CO_2 was discharged, TB-FA-3A (4 Apparatus (SCBA) will be required for		due to a common discharge header. T r. 1C.	herefore, Self Conta	ined Breathing
	r Pressure decreasing to 310 psig, per uate core cooling:	form the following to prevent the	e core spray pumps from injecting, prov	rided these pumps a	re not required
	rom the control Room, trip 4160V 1B s Pumps NZ01B and NZ01C.	Switchgear incoming breakers 1	B and S1B to de-energize the 1D 4160	V Switchgear to sto	p Core Spray
b) A	t the diesel building, trip EDG-2 outpu	t breaker and place EDG-2 mod	e switch in 'stop' to stop Core Spray P	umps NZ01B and NZ	Z01C.
	olation Condensers may have to be pr 63 and open V-9-2099 & V-11-49).	rovided by a Fire Diesel pump; v	alve lineup should be performed in acc	cordance with Proce	dure 307
4) <u>NOTE:</u> CS1	may drain to the Hotwell on Loss of I	nstrument Air.			
IF CST Leve	I indicator is not available in the contro	ol room or Instrument Air is lost,			
hotv cold	vell. Approximately 10.1 ft in the CST	(check local indicator if necessa cessary from Demineralized Wa	ithin approximately 73 minutes) to prev ny) may be required for reactor vessel ter (procedure 320.1), High Purity (pro- I-247).	makeup during cool	down to

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FIRE ZONE	EQUIPMENT POTENTIALLY AFFECTED	ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE
4160V SWGR RM 1D (TB-FA-3B) (cont'd)	ELEC SWGR #2 EDG Control Ckts. 4160V Bus 1D	LSP-DG2 None	#2 EDG Vault NA	341, 346 337	NA NA
	Feeder Breaker to USS 1B2 (1B2P)	LSP-1D	4160 Swgr Rm 1D	346	NA
	Feeder Breaker to USS 1B3 (1B3P)	LSP-1D	4160 Swgr Rm 1D	346	NA
	<u>SHUTDOWN CLG SYS</u> . Loop Inlet Isol Vlvs. (V-17-1, 2, 3)	Local Manual	SDC Room	305	NA
	Loop Outlet Isol. Vlvs. (V-17-55, 56, 57)	Local Manual	SDC Room	305	NA
	RBCCW/SERV. WTR. SYS SDC Hx Outlet Flow Control Vlv (V-5-106)	Local Manual	SDC Room	305, 309.2	NA
	RBCCW Disch. Hdr. Press Indic. (PT-1A18)	Local Gages (PI-50, 51)	RB 51' EI, East on Pump Dish Pipes	309.2	NA
	Serv. Wtr. Disch. Hdr. Press Indic. (PT-6)	Local Gage (PI-30)	Intake Structure	322	NA

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FI	FIRE ZONE EQUIPMENT ALTERNATE LOCATION OF ALTERNATE APPLICABL POTENTIALLY AFFECTED CONTROL/INDICATION CONTROL/INDICATION PROCEDURE					REPAIR DOCUMENT REFERENCE
		1D (TB-FA-3B) (cont'd) ctions Required:				
(1)	<u>IF</u>	B battery charger is not available,				
	<u>THEN</u>	V-14-34 can be cycled for short-term operative the Isolation Condenser with V-14-34 left of			ilized for long-term o	peration of
(2)	Ope Three	e necessary to use the CRD bypass line due t en V-15-237 ottle V-15-30 for desired flow on FI-225-2 ose V-15-52	to the loss of instrument air by	performing the following:		
(3)	Cable fa	ilures may cause VACP-1 to trip.				
	<u>IF</u> <u>THEN</u>	CST level indication (5F-27), RBCCW Press room. Read all indicators locally AND (when time permits) Open all load breakers on VACP-1 and re-or indicators. Note that the breakers 16, 23, 2	lose VMCC 1B2 breaker com	partment C2R and then re-close V	ACP-1 breaker 21 fo	r the required
(4).	Recharg	e V-11-36 Accumulator per Procedure 307 as	s required (accumulator is size	d for approximately 5 strokes).		
(5)	Tempora FAN ON	ry Control Room ventilation may need to be in LY mode, provided vent dampers are manua	nstalled per Procedure 331.1 it Ily opened.	'B' CRHVAC is not available. 'A'	CRHVAC may be av	ailable in the
(6)	<u>IF</u>	V-5-106 has to be manually opened,				
	THEN	Open its supply breaker on MCC 1B21A an	d then manually operate V-5-1	06.		
(7)	<u>IF</u>	USS 1B2 is not energized,				
	<u>THEN</u>	Open USS 1B2M breaker and remove close operation if necessary). Note that this cross manual operation if necessary). In addition then confirm closed EF-1-21 (unit E06) and ventilation IAW Procedure 331.	stie is required to get another S , ventilation will have to be res	SDC pump (B or C) and RBCCW p tored to the B 480V Room by cont	oump (if needed) in s irming MCC 1B21 is	ervice (local energized and

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FIRE ZONE	EQUIPMENT POTENTIALLY AFFECTED	ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE
TURB. OPER. FLOOR (TB-FZ-11A)	NONE	N/A	N/A	N/A	N/A
References:					
GU 3E-911-41-040 GU 3E-911-41-042	(Hot Shutdown Path #1 for TB-FZ-11 (Cold Shutdown Path #1 for TB-FZ-1				
Manual Action Required:					
(1) <u>IF</u> Inst	rument Air is lost,				
in th as n	-90 in the Condensate Transfer Building the CST may be required for isolation cor necessary from Demineralized Water (pr -11, open V-9-9 and open V-11-247).	idenser shell and reactor vess	el makeup during cooldown to col	d shutdown. Makeup	to the CST
V-9-	-11, open V-9-9 and open V-11-247).	oceaure 320. r), Aign Purity (p	rocedure 331.2), or the Fire Prote	cuon system (as last	reson, close

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	FIRE ZO	NE	EQUIPMENT POTENTIALLY AFFECTED	ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE	
LUB	BINE BLDO E OIL BAY FZ-11B)	-						
Refe	rences:							
GU :	3E-911-41-(040	Hot Shutdown Path #1 – "A" Isolatior Pressure Ir	n Condenser, "B" CRD Pump, nd. PI-622-850, EDG-2	Condensate Transfer Pump, Fuel	Zone Level Ind. LI-IA	94B, Rx.	
GU :	GU 3E-911-41-042 Cold Shutdown Path #1 "B & C" SDC Pumps, "B" CRD, RBCCW and Service Water Pumps Fuel Zone Level Ind. LI-IA94B, Rx. Wide Range Level Indicator LI-IA13, Rx. Pressure Ind. PI-622-850.							
Pror	npt Manua	I Actions:						
<u>NOT</u>	<u>E:</u> The	se steps ca	n be performed concurrently and are li	sted in the order of priority but	are dependent on actual plant syn	nptoms.		
1)	Confirm so	cram was c	ompleted in control room, if a scram wa	as deemed necessary.				
2)			n, trip the feedwater pumps by taking t 734, 735, and 736 provided that these		nay not trip) and/or control flow uti	lizing the Feedwater	Regulating	
3)	<u>NOTE:</u>		tor Recirculation control circuits are lo		have to be tripped to utilize the F	uel Zone Level Indica	ators.	
	<u>IF</u>		tor Recirculation Pumps won't trip from					
	<u>THEN</u>	trip the p	umps from their respective switchgear	(4160V Busses 1A & 1B) and	place their 69 permissive switches	in the 'trip' position.		
4)	<u>NOTE:</u>	CST may	drain to the Hotwell on Loss of Instrun	nent Air.				
	<u>IF</u>	CST Leve	el indicator is not available in the contro	ol room or Instrument Air is los	t,			
	<u>THEN</u>	hotwell. shutdowr	the Condensate Transfer Building sho Approximately 19.5 ft in the CST may b a. Makeup to the CST as necessary fro as last resort, close V-9-11, open V-9-9	be required for isolation conde m Demineralized Water (proce	nser shell and reactor vessel make	eup during cool dowr	n to cold	

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FIRE ZONE POTE			EQUIPMENT POTENTIALLY AFFECTED	ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE
	BINE B	ldg lube oil)	- BAY (Cont'd)				
<u>Pro</u>	mpt Ma	nual Actions (cont'd):				
5)		ers, remove 'clo a. Core Spra b. Core Spra c. Core Spra	sure decreasing to 310 psig, open the fo se' fuses on top right of associated 480 ay Booster Pumps NZ03A & NZ03D at 4 ay Booster Pumps NZ03B & NZ03C at 4 ay Pumps NZ01A & NZ01D at 4160V Sv ay Pumps NZ01B & NZ01C at 4160V Sv	V breaker cubicle), provided th 80V USS 1A2 (fuse puller at R 80V USS 1B2 (fuse puller at R vgr. 1C.	lese pumps are not required to ass SP padlock).		
6)	IE	power is lost to	o 4160V 1D Bus, USS 1B3 and/or MCC	1B32 and control from the con	trol room is not available,		
	<u>THEN</u>	Control them a	at their respective Local Shutdown Pane	I IAW Procedure 346			
		a. LSP-DG2 b. LSP-1D c. LSP-1B3 d. LSP-1B32	and confirm the feeder breaker to MCC	1B32 is closed			
7)	<u>NOTE:</u>	If offsite powe	r is lost at a latter time, then LSP-DG2	will have to be fully initiated us	sing Procedure 346.		
	<u>IF</u>	1D 4160V Bu	s is being supplied by Offsite power,				
-	<u>THEN</u>	TRANSFER o of EDG-2	nly the #1 Normal-Alternate switch to "	Alternate" (partial initiation) on	LSP-DG2 to isolate control room	wiring and prevent s	purious starting
		and					
	<u>IF</u>	EDG-2 is alread	ady running,				
	<u>THEN</u>	STOP EDG-2	by momentarily taking the mode switcl	h to stop.			
8)	When permis	#2 EDG is supp ssive switch in t	blying power to 4160V swgr. 1D, ensure he 'trip' position) to prevent inadvertent	that the feeder breaker on 416 paralleling of offsite power with	60V 1D unit D1 (from 4160V Bus 1 the EDG due to a spurious actuat	B) is open and locked ion.	out (69-

	FIRE Z	ONE	EQUIPMENT POTENTIALLY AFFECTED	ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE			
1	BINE BLC FZ-11B))g lube oi	L BAY (Cont'd)							
Pro	Prompt Manual Actions (cont'd):									
9)	<u>NOTE</u> :		hot short on the 1D ammeter cable that runs to the control room can cause the 86/1D lockout relay to actuate which will either trip the EDG-2 reaker (if already closed) or will prevent the breaker from closing.							
	<u>IF</u>	EDG-2 bre	eaker trips or will not close (trips free) a	nd 86/1D is picked up,						
	<u>THEN</u>		6/1D fuse pair labeled FU-80 (UB) in sv as been removed, the breaker can be cl		reset the 86/1D lockout. Now the	at the trip signal on th	e EDG-2			
10)	<u>IF</u>	Control of	JSS 1B2M and B CRD pump is required	from the RSP (partial initiation	n of RSP).					
	<u>THEN</u>	Control USS 1B2M and B CRD pump from the RSP IAW the instructions below.								
			m feeder breaker 1B2P to USS 1B2 is o	closed.						
ļ			key from the Padlock at the RSP. keylock CRD and Breaker 1B2M Cont	rol Transfer Switch to Alternat	<u>م</u>					
			m closed USS main Breaker, 1B2M cont		G.					
		5. Opera	te B CRD pump at RSP as required.							

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FIRE ZONE	EQUIPMENT POTENTIALLY AFFECTED	ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE
TURBINE BLDG. LUBE OIL BAY (TB-FZ-11B)	CORE SPRAY SYSTEM "A" Core Spray Pump Control Ckt. (NZ01A)	Local Breaker Oper.	4160V Bus 1C	308	NA
	"C" Core Spray Pump Control Ckt. (NZ01C)	Local Breaker Oper.	4160V Bus 1D	308	NA
	"D" Core Spray Pump Control Ckt. (NZ01D)	Local Breaker Oper.	4160V Bus 1C	308	NA
	CONDENSATE TRANSFER SYS Cond. Trans. Pump 1-1	None	NA	316.1	NA
	Cond. Trans. Pump 1-2	LSP-1B32	Chlor. Bldg.	316.1, 346	NA
	Cond. Storage Tank Level (LT-35)	Local Gage (LI-424-993)	Cond. Stg. Tank	316.1	NA
	EMER. SERV. WATER SYS "A" ESW Pump Control Ckt. (52A)	Local Manual	4160V Swgr. 1C	310	NA
	"B" ESW Pump Control Ckt. (52B)	Local Manual	4160V Swgr. 1C	310	NA
	RBCCW SYSTEM RBCCW Disch. Header Press Indic. (PT-IA18)	Local Gages (PI-50, 51)	RB 51' El. East on Pump Disch. Piping	309.2	NA
	#2 RBCCW Pump Control Ckt.	Local bkr operation (USS 1B2)	'B' 480V Room	309.2	NA
	SHUTDOWN COOLING SYS. V-17-19 & V-17-54	Panel 3F Test Plugs	Control Room Panel 3F	305	NA
	CONTROL ROD DRIVE 'B' CRD Pump	RSP	'B' 480V Room	302.1, 346	NA

FIRE ZONE	EQUIPMENT POTENTIALLY AFFECTED	ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE
TURBINE BLDG.	ELECTRICAL DIST. SYS.				
LUBE OIL BAY	EDG 1 Control Ckts.	None	NA	341	NA
(TB-FZ-11B)	Brkr. 1C Control Ckt.	Local	1C Swgr.	337	NA
(rb=r2=rrb) (cont'd)	Brkr. EC Control Ckt.	Local	1C Swgr.	337	NA
(contu)	EDG-2 Control Ckts.	LSP-DG2	#2 EDG Vault	341, 346	NA
	Brkr. 1D Control Ckt.	Local	1D Swgr.	337	NA
	Brkr. ED Control Ckt.	Local	1D Swgr.	337	NA
	Brkr 1A1P Control Ckt.	Local	1C Swgr.	337	NA NA
	Brkr 1A2P Control Ckt.	Local	1C Swgr.	337	NA
	Brkr 1A3P Control Ckt.	Local	1C Swgr.	337	NA
	Brkr 1A3M Control Ckt.	Local	USS 1A3	338	NA
	Brkr 1A1M Control Ckt.	Local	USS 1A1	338	NA
	Brkr. 1B2P Control Ckt.	LSP-1D	"D" 4160V Swgr. Room	337, 346	NA
	Brkr. 1B3P Control Ckt.	LSP-1D	"D" 4160V Swgr. Room	337, 346	NA
	Brkr. 1B1P Control Ckt.	Local	1D Swgr	337	NA NA
	Brkr. 1B1M Control Ckt.	Local	USS 181	338	NA
	Brkr. 1B2M Control Ckt.	RSP	'B' 480V Room	346	NA
	Brkr, 1B3M Control Ckt.	LSP-1B3	Intake Structure	338, 346	NA
	Power Feeder and 125 vdc Cntrl	None	NA	338, 340.3	NA
	Pwr to USS 1A2				
	480V Feeder to C1 & C2	None	NA	340.3	NA
	Battery Chargers				
	125 vdc Pwr Feeder to DC-2	None	NA	340.3	NA
	125 vdc Power Feeder to DC-F	None	NA	340.3	NA
	125 vdc Cntrl Pwr to Swgr 1B	Switch Cntrl pwr to DC-A	"B" 4160 Swgr Room	340.1	340.1
	Power Feeder to MCC 1B12	None	NA	338	NA
	VACP-1	None	NA	339	NA
	SERVICE WATER SYSTEM				
	Service Water Pump 1-1	None	Intake Structure	322	NA
	Control Ckt.				
	Service Water Pump 1-2 Control Ckt.	LSP-1B3	Intake Structure	322, 346	NA
	Service Water Header				
	Press Indication (PT-6)	Local Gage (PI-30)	Intake Structure	322	NA

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FIRE ZONE	EQUIPMENT POTENTIALLY AFFECTED	ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE
TURBINE BLDG. LUBE OIL BAY (TB–FZ–11B) (cont'd)	VENTILATION SYSTEM "A" 480V Swgr. Room HVAC Supply and Exhaust Fans Control	None	NA	328	NA
	"A" 480V Swgr. Room HVAC Dampers Control	None	NA	328	NA
	FUEL ZONE LEVEL "A", "B" Fuel Zone Level and "C", "D" Fuel Zone Level	"C", "D" Fuel Zone	"B" 480V Swgr. Room	346	NA
	(Control Room Only)	Level at RSP	L	<u> </u>	L

Additional Manual Actions Required:

- 1 It may be necessary to use the CRD bypass line due to the loss of instrument air by performing the following:
 - Open V-15-237

62.0

- Throttle V-15-30 for desired flow on FI-225-2
- Close V-15-52
- 2 Trip the feedwater pumps from their respective switchgear, and place their 69-permissive switches in the 'trip' position when time permits to ensure feedwater isolation.
- 3. Recharge V-11-36 Accumulator per Procedure 307 as required (accumulator is sized for approximately 5 strokes).
- 4. If power is lost to "C" Battery Room HVAC fans from MCC 1A2, then ensure that the battery room door is opened within 31 hours to prevent a buildup of hydrogen.
- 5. RBCCW Pump 1-2 cable failure may cause a spurious pump trip.

If RBCCW Pump 1-2 spuriously trips, then Remove trip fuses from breaker at USS 1B2 and re-close breaker.

- 6. Cable failures may prevent operation of Shutdown Cooling Isolation Valves V-17-19 and V-17-54 from the Main Control Room.
 - IF V-17-19 & V-17-54 cannot be opened from Control Room Panel 11F
 - THEN Operate test plugs in Panel 3F per procedure 305, section 9.0.

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	FIRE ZON		ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE
TUR	B. BLDG.4	160 SWGR RM "A" AND "B" SWGR RM (T	B-FZ-11C)			
	rences: 3E-911-41	040 Hot Shutdown Path #1 – "A" Is Rx.	solation Condenser, "B" CRD Pu Pressure Ind. PI-622-999 & 1000	mp, Condensate Transfer Pump, Fuel), EDG-2	Zone Level Ind. LI-6;	22-1001 & 1002,
GU 3	3E-911-41	042 Cold Shutdown Path #1 – "B & Rx	& C" SDC Pumps, "B" CRD, RBC . Wide Range Level Indicator LI-	CW and Service Water Pumps Fuel Z IA13, Rx. Pressure Ind. PI-622-999 &	one Level Ind. LI-622 1000.	2-1001 & 1002,
<u>Pron</u> NOT		al Actions: se steps can be performed concurrently an	d are listed in the order of priority	/ but are dependent on actual plant sy	mptoms.	
1)	Confirm	cram was completed in control room, if a so	cram was deemed necessary.			
2)		control room, trip the feedwater pumps by t -2-732, 733, 734, 735, and 736 provided that		רL (may not trip) and/or control flow uti	ilizing the Feedwater	Regulating
3)	<u>NOTE:</u>	The Reactor Recirculation pumps trip circu	its are located in this fire zone a	nd they have to be tripped to utilize the	Fuel Zone Level Inc	licators.
	<u>IF</u>	The Reactor Recirculation Pumps won't tri	p from the control room,			
	THEN	trip them manually by opening the field bre	akers for the MG sets at PnI RY2	21 in the MG Set Room		
4)	<u>NOTE:</u> I <u>F</u> THEN	CST may drain to the Hotwell on Loss of In CST Level indicator is not available in the V-2-90 in the Condensate Transfer Building hotwell. Approximately 19.5 ft in the CST (makeup during cool down to cold shutdown 351.2), or the Fire Protection system (as la	control room or Instrument Air is g should be closed promptly (wit (check local indicator if necessar n. Makeup to the CST as necess	hin approximately 30 minutes) to preve y) may be required for isolation conde ary from Demineralized Water (proced	nser shell and reacto	r vessel
5)	CAUTIO	N: SCBA may be required to get to the 1D	4160V switchgear due to smoke	. The closest SCBA is located in the F	Pretreatment Building	(east side).
		EDG is supplying power to 4160V swgr. 1D, e switch in the 'trip' position) to prevent inadv				d out (69-

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	FIRE ZON	EQUIPMENT POTENTIALLY AFFECTED	ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE
TUF	RB. BLDG.	4160 SWGR RM "A" AND "B" SWGR RM	(TB-FZ-11C)			
Pro	mnt Mani	ual Actions (cont'd):				
	inpt marie	(conta).				
6)	<u>NOTE</u> :	A hot short on the 1D ammeter cable that breaker (if already closed) or will prevent		se the 86/1D lockout relay to actuate	which will either trip the	ne EDG-2
	<u>CAUTIO</u>	N: SCBA may be required to get to the	1D 4160V switchgear due to smok	e. The closest SCBA is located in the	e Pretreatment Buildir	ig (east side).
	<u>IF</u> :	EDG-2 breaker trips or will not close (trip	s free) and 86/1D is picked up,			
	<u>THEN</u> :	Remove 86/1D fuse pair labeled FU-80 (breaker has been removed, the breaker		then reset the 86/1D lockout. Now the	nat the trip signal on th	e EDG-2
7)		Reactor pressure decreasing to 310 psig, op reakers, remove 'close' fuses on top right of				
	а. b. c.	Core Spray Pumps NZ01B & NZ01C at 4 Core Spray Pumps NZ01A & NZ01D at 41 Core Spray Booster Pumps NZ03A & NZ0	60V Swgr. 1C.	ocated at RSP padlock).		
8)	<u>IF</u>	USS 1B3 is de-energized and cannot be o	controlled from the control room.			
	<u>THEN</u>	Use Local Shutdown Panel LSP-1B3 IAW	Procedure 346 to control USS 1B	3 and confirm MCC 1B32 feeder break	er is closed after powe	er is restored.
9)	<u>IF</u>	Control of USS 1B2M and B CRD pump is	required from the RSP (partial init	iation of RSP).		
	<u>THEN</u>	Control USS 1B2M and B CRD pump from	n the RSP IAW the instructions bel	.wa		
		 Confirm feeder breaker 1B2P to US Obtain key from the Padlock at the Rotate keylock CRD and Breaker 1 Confirm closed USS main Breaker, 	RSP. B2M Control Transfer Switch to A	Iternate.		

5. Operate B CRD pump at RSP as required.

FIRE ZONE	EQUIPMENT POTENTIALLY AFFECTED	ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE
TURBINE BLDG. 4160V SWGR. RM. "A" AND "B"	CORE SPRAY SYSTEM "A" Core Spray Pump Control Ckt. (NZ01A)	Local Brkr Operation	4160V Bus 1C	308	NA
SWGR. ROOM (TB-FZ-11C)	"B" Core Spray Pump Control Ckt. (NZ01B)	Local Brkr Operation	4160V Bus 1D	308	NA
	"C" Core Spray Pump Control Ckt. (NZ01C)	Local Brkr Operation	4160V Bus 1D	308	NA
	"D" Core Spray Pump Control Ckt. (NZ01D)	Local Brkr Operation	4160V Bus 1C	308	NA
	EMER SERV WATER SYS "A" ESW Pump Control Ckt (52A)	None	NA	310	NA
	"B" ESW Pump Control Ckt (52B)	None	NA	310	NA
	"C" ESW Pump Control Ckt (52C)	None	NA	310	NA
	"D" ESW Pump Control Ckt (52D)	None	NA	310	NA

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FIRE ZONE	EQUIPMENT POTENTIALLY AFFECTED	ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE
TURBINE BLDG. 4160V SWGR. RM. "A" AND "B" SWGR. ROOM	SERVICE WATER SYSTEM Service Water Pump 1-1 Control Ckt.	None	N/A	322	NA
(TB-FZ-11C) (cont'd)	Service Water Pump 1-2 Control Ckt.	LSP-1B3	Intake Structure	322, 346	NA
	Service Water Hdr Press Indication (PT-6)	Local Gage (PI-30)	Intake Structure	322	NA
	ELECTRICAL DIST. SYS. #1 EDG Power and Control Ckt. #2 EDG Power Circuit (3 Hr. Fire Barrier)	None None	NA NA	341 341, 346	NA NA (3 hr cable barrier)
	Power Feeder to Bus 1C Brkr 1C Control Ckt. Brkr 1A1P Control Ckt. Brkr 1A2P Control Ckt. Brkr 1A3P Control Ckt. Brkr 1A3M Control Ckt. Power Feeder to Bus 1D Brkr 1B1P Control Ckt. Brkr 1B2P Control Ckt. Brkr 1B3M Control Ckt. Brkr 1B3M Control Ckt. Brkr 1B3M Control Ckt. Brkr 1B3M Control Ckt. 125V DC Dist Ctr. "C" Charger "C1" & "C2" 125 vdc Power Feeder to DC-2 125 vdc Power Feeder to DC-F 125 vdc Cntrl Pwr to "1C" Swgr 125 vdc Cntrl Pwr to USS 1A2 125 vdc Cntrl Pwr to USS 1A3	EDG #1 Local Local Local Local #2 EDG Local LSP-1D LSP-1D RSP LSP-1B3 None None None None None None None	Control Room 1C Swgr. 1C Swgr. 1C Swgr. 1C Swgr. USS 1A3 Control Room 1D Swgr. "D" 4160V Swgr. Room "D" 4160V Swgr. Room B' 480V Room Intake Structure NA NA NA NA	337 337 337 337 337 338 341,346 337,346 337,346 337,346 346 338,346 340.3 340.3 340.3 340.3 340.3 340.3 340.3	NA NA NA NA NA NA NA NA NA NA NA NA NA N
	125 vdc Cntrl Pwr to "1A" Swgr 125 vdc Cntrl Pwr to "1B" Swgr	None Switch Cntrl Pwr to DC "A"	NA "B" 4160V Swgr Room	340.3 340.1	NA 340.1
	RBCCW SYSTEM RBCCW Disch. Hdr Press Indication (PI-IA1B)	Local Gages (PI-50, 51) Breaker at USS 1B2	RB 51' El. East on Pump Disch. Piping	309.2	NA
	RBCCW Pump 1-2		'B' 480V Swgr Room	309.2	NA

FIRE ZONE	EQUIPMENT POTENTIALLY AFFECTED	ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE
TURBINE BLDG. 4160V SWGR. RM. "A" AND "B"	FUEL ZONE LEVEL "A", "B" Fuel Zone Level Indications	"C", "D" Fuel Zone Level Indications	CR Pni 5F/6F or RSP ("B" 480V Swgr Rm)	410 346	NA NA
SWGR. ROOM (TBFZ11C) (cont'd)	CONTROL ROD DRIVE 'B' CRD Pump	RSP	'B' 480V Room	346	NA
	SHUTDOWN COOLING SYS. V-17-19 & V-17-54	Panel 3F Test Plugs	Control Panel 3F	305	N/A
Additional Manual Actions	Required:				
Open V-19 Throttle V- Close V-1	-15-30 for desired flow on FI-225-2	to the loss of instrument air by	performing the following:		
	level indication (5F-27), RBCCW Press	sure Indication (13R-63) and/o	r Service Water Pressure Indicatio	on (5F-60) are lost in	the control
THEN Read	all indicators locally				
	AND (when time permits)				
indic indic	n all load breakers on VACP-1 and re-c ators. Note that the Service Water pre- ator may still need to be read locally. In able failures.	ssure indicator still may not be	available due to potential cable fa	ailures on the instrum	ent loop so this
	ter pumps from their respective switchg e feedwater isolation.	gear if they are not required, an	nd place their 69-permissive switcl	nes in the 'trip' positio	on when time
4. Recharge V-11-3	36 Accumulator per Procedure 307 as r	required (accumulator is sized	for approximately 5 strokes).		
5. If power is lost to hydrogen.	"C" Battery Room HVAC fans from MC	C 1A2, then ensure that the ba	ttery room door is opened within 3'	I hours to prevent a b	uildup of
6 IF: #2 RBC	CW Pump spuriously trips (USS 1B2)				
THEN: Remove	the trip fuses for this pump at USS 1B2	2 and manually re-close the br	eaker.	<u>,</u>	

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F	FIRE ZONE		EQUIPMENT POTENTIALLY AFFECTED	ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE		
TB-FZ-1	1C Manua	al Action Re	quired (cont'd):						
7.	IF: Breaker for #2 Service Water Pump may have to be controlled from LSP-1B3 and if it spuriously trips open (USS 1B3) THEN: Remove the trip fuses for this pump at USS 1B3 and manually re-close the breaker.								
8.	Cable fa	ilures may	prevent operation of Shutdown Co	oling Isolation Valves V-17-19 a	and V-17-54 from the Main Control	Room.			
	IF:	F: V-17-19 & V-17-54 cannot be opened from Control Room Panel 11F							
	THEN: Operate test plugs in Panel 3F per procedure 305, section 9.0.								

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	FIRE Z	ONE	EQUIPMENT POTENTIALLY AFFECTED	ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE				
TUR	TURBINE BLDG. BASEMENT (TB-FZ-11D)										
Refe	References:										
GU	GU 3E-911-41-040		Hot Shutdown Path #1 – "A" Isolation Condenser or "B" Isolation Condenser (if DC-C does not trip), "B" CRD Pump, Condensate Transfer Pump, Fuel Zone Level Ind. LI-622-1001 & 1002, Rx. Pressure Ind. PI-622-999 & 1000, EDG-2								
GU 3E-911-41-042 Cold Shutdown Path #1 - "B & C" SDC Pumps, "B" CRD, RBCCW and Service Water Pumps Fuel Zone Level Ind. LI-622-1001 & Wide Range Level Indicator LI-IA13, Rx. Pressure Ind. PI-622-999 & 1000.						-1001 & 1002, Rx.					
Pro	Prompt Manual Actions:										
NOT	<u>'E:</u>		These steps can be performed con-	currently and are listed in the o	rder of priority but are dependent of	on actual plant sympt	oms.				
1)	Confirm	scram was c	ompleted in control room, if a scram	was deemed necessary.							
2)			n, trip the feedwater pumps by taking 5, and 736 provided that these pump		nay not trip) and/or control flow uti	ilizing the Feedwater	Regulating Valves				
3)	<u>NOTE:</u>	The Reacto	r Recirculation pump control and pov	ver cables are located in this fir	e zone and they have to be trippe	d to utilize the Fuel Z	one Level Ind.				
	<u>IF</u>	The Reacto	r Recirculation Pumps won't trip fron	the control room,							
	THEN	trip the pur	nps from their respective switchgear (4160V Busses 1A & 1B) and p	lace their 69 permissive switches i	in the 'trip' position.					
4)	<u>NOTE:</u>	CST may d	rain to the Hotwell on Loss of Instrun	nent Air.							
	<u>IF</u>	CST Level	indicator is not available in the contro	I room or Instrument Air is lost,							
	THEN V-2-90 in the Condensate Transfer Building should be closed promptly (within approximately 30 minutes) to prevent the CST from draining to the hotwell. Approximately 19.5 ft in the CST may be required for isolation condenser shell and reactor vessel makeup during cool down to cold shutdown. Makeup to the CST as necessary from Demineralized Water (procedure 320.1), High Purity (procedure 351.2), or the Fire Protection system (as last resort, close V-9-11, open V-9-9 and open V-11-247).										

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	FIRE	ZONE	EQUIPMENT POTENTIALLY AFFECTED	ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE			
	TURBINE BLDG. BASEMENT (cont'd) (TB-FZ-11D)									
<u>Pro</u>	Prompt Manual Actions (cont'd):									
5)) CAUTION: SCBA may be required to get to the 1D 4160V switchgear due to smoke. The closest SCBA is located in the Pretreatment Building (east side).									
	Prior to Reactor pressure decreasing to 310 psig, open the following breakers at their respective switchgear and place 69-permissive switches in 'trip' position, provided these pumps are not required to assure adequate core cooling: a. Core Spray Pumps NZ01A & NZ01D at 4160V Swgr. 1C. b. Core Spray Pumps NZ01B & NZ01C at 4160V Swgr. 1D.									
6)	<u>IF</u>	power is lost to 4160V 1D Bus and/or USS 1B3 and control from the control room is not available,								
	<u>THEN</u>	Control them at their respective Local Shutdown Panel IAW Procedure 346								
		a. LSP-DG2 b. LSP-1D c. LSP-1B3	and confirm the feeder breaker to MCC	C 1B32 is closed						
7)	<u>NOTE:</u>	If offsite powe	r is lost at a latter time, then LSP-DG2	2 will have to be fully initiated us	sing Procedure 346.					
	<u>IF</u>	1D 4160V Bus	s is being supplied by Offsite power,							
	<u>THEN</u>	TRANSFER o EDG-2	only the #1 Normal-Alternate switch to	"Alternate" (partial initiation) on	LSP-DG2 to isolate control room	wiring and prevent s	purious starting of			
		and								
	<u>IF</u>	EDG-2 is alrea	ady running,							
	<u>THEN</u>	STOP EDG-2	by momentarily taking the mode swite	ch to stop.						
8)	When #2 EDG is supplying power to 4160V swgr. 1D, ensure that the feeder breaker on 4160V 1D unit D1 (from 4160V Bus 1B) is open and locked out (69-permissive switch in the 'trip' position) to prevent inadvertent paralleling of offsite power with the EDG due to a spurious actuation. Confirm breakers D2 (USS 1B1), D4 (B Core Spray Pump), D6 (ESW Pump 52D), D8 (ESW Pump 52C) and D9 (C Core Spray Pump) are tripped and are locked out by placing their 69-permissive switches in the 'trip' position.									

	FIRE ZONE EQUIPMENT POTENTIALLY AFFECTED		ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE				
	TURBINE BLDG. BASEMENT (cont'd) (TB-FZ-11D)									
<u>Pro</u>	<u>mpt Manu</u>	al Actions	(conťd):							
9)	NOTE: A hot short on the 1D ammeter cable that runs to the control room can cause the 86/1D lockout relay to actuate which will either trip the EDG-2 breaker (if already closed) or will prevent the breaker from closing.									
	CAUTION: SCBA may be required to get to the 1D 4160V switchgear room. The closest SCBA is located in the Pretreatment Building (east side).									
	<u>IF</u> :	EDG-2 br	eaker trips or will not close (trips free) a	and 86/1D is picked up,						
	<u>THEN</u> :	Sprav Pu	36/1D fuse pair labeled FU-80 (UB) in s np), D6 (ESW Pump 52D), D8 (ESW F n the 'trip' position prior to re-energizin	Pump 52C) and D9 (C Core Spi	ay Pump) are tripped and are loci	ked out by placing the	eir 69-permissive			
10)	<u>IF</u>	Control of	USS 1B2M and B CRD pump is require	ed from the RSP (partial initiation	n of RSP).					
	<u>THEN</u>	Control US	SS 1B2M and B CRD pump from the RS	SP IAW the instructions below.						
		1. 2. 3. 4. 5.	Confirm feeder breaker 1B2P to USS Obtain key from the Padlock at the F Rotate keylock CRD and Breaker 1E Confirm closed USS main Breaker, 7 Operate B CRD pump at RSP as rec	RSP. 32M Control Transfer Switch to 1B2M at RSP	Alternate.					

FIRE ZONE	EQUIPMENT POTENTIALLY AFFECTED	ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE
TURBINE BLDG. BASEMENT (TB-FZ-11D) (cont'd)	CORE SPRAY SYSTEM "A" Core Spray Pump Power and Control Ckt (NZ01A) "B" Core Spray Pump	Local Brkr Operation	4160V Bus 1C	308	NA
	Power and Control Ckt (NZ01B) "C" Core Spray Pump	Local Brkr Operation	4160V Bus 1D	308	NA
	Power and Control Ckt (NZ01C) "D" Core Spray Pump	Local Brkr Operation	4160V Bus 1D	308	NA
	Power and Control Ckt (NZ01D)	Local Brkr Operation	4160V Bus 1C	308	NA
	EMERGENCY SERV WTR SYS "A" ESW Pump Power Feed &	None	NA	310	NA
	Control Ckt (52A) "B" ESW Pump Power Feed &	None	NA	310	NA
	Control Ckt (52B) "C" ESW Pump Power Feed &	None	NA	310	NA
	Control Ckt (52C) "D" ESW Pump Power Feed & Control Ckt (52D)	None	NA	310	NA
	SERVICE WATER SYSTEM Service Water Pump 1-1 Control Ckt	None	NA	322	NA

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FIRE ZONE	EQUIPMENT POTENTIALLY AFFECTED	ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE
TURBINE BLDG. BASEMENT	Service Water Pump 1-2 Control Ckt	LSP-1B3	Intake Structure	322, 346	NA
(TB–FZ–11D) (cont'd)	Service Water Hdr Press Indication (PT-6)	Local Gage (PI-30)	Intake Structure	322	NA
	FUEL ZONE LEVEL "A", "B" Fuel Zone Level Indications	"C", "D" Fuel Zone Level Indications	CR Pnl 5F/6F or RSP("B" 480V Swgr Rm)	410 346	NA NA
	ELECTRICAL DIST SYSTEM EDG 1 Pwr and Control Ckts. EDG 2 Pwr and Control Ckts.	None LSP-DG2	NA #2 EDG Vault	341 341, 346	NA NA (Pwr has 1 hour fire barrier)
	Brkr 1C Control Ckts. Brkr 1D Control Ckts. Brkr 1D Control Ckts. Brkr ED Control Ckts. Power Feeder to Bus 1C Power Feeder to USS 1A2 Power Feeder to USS 1A3 Brkr 1B2P Control Ckt. Brkr 1B3P Control Ckt. Brkr 1B3M Control Ckt. 125VDC Con Pwr to USS 1A3 from DC "B" USS 1A1 USS 1B1 USS 1B2M <u>RBCCW SYSTEM</u>	None None None None None LSP-1D LSP-1D LSP-1B3 125VDC Control Power from DC "A" None None RSP	NA NA NA NA NA "D" 4160V Swgr Room "D" 4160V Swgr Room Intake Structure 480V USS 1A3 NA NA NA SY 480 V Swgr Room	337 337 337 337 337 337 337 337, 346 337, 346 337, 346 338, 346 340.1 338 338 338 338 346	NA NA NA NA NA NA NA NA NA NA NA NA NA N
	RBCCW Disch. Header Press Indication (PT-IA18)	Local Gages (PI-50, 51)	RB 51' El, East on Pump Disch. Piping	309.2	NA
	RBCCW Pump 1-2	Local Bkr operation at USS 1B2	B' 480 V Swgr Room	309.2	NA

FIRE	ZONE	EQUIPMENT POTENTIALLY AFFECTED	ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE				
TURBIN		CONTROL ROD DRIVE								
1	Z–11D)	'B' CRD Pump	RSP	'B' 480 V Swgr Room	346	NA				
(coi	nt'd)	SHUTDOWN COOLING SYS. V-17-19 & V-17-54	Panel 3F Test Plugs	Control Room Panel 3F	305	N/A				
Additional M	anual Actions	Required TB-FZ-11D	L		•					
•	 It may be necessary to use the CRD bypass line due to the loss of instrument air by performing the following: Open V-15-237 Throttle V-15-30 for desired flow on FI-225-2 Close V-15-52 									
2) Cable fa	ilures may ca	use VACP-1 to trip.								
<u>IF</u>	CST level	indication (5F-27), RBCCW Pressure Ir	ndication (13R-63) and/or Serv	vice Water Pressure Indication (5F	-60) are lost in the co	ontrol room.				
THEN	read all ind	dicators locally								
		AND (when time permits)								
		bad breakers on VACP-1 and re-close Note that the breakers 16, 23, 25 & 26				required				
4). Recha	rge V-11-34 A	ccumulator per Procedure 307 as requ	ired (accumulator is sized for a	approximately 5 strokes).						
3) <u>IF</u> :	the C batt	ery charger is not available								
<u>THEN</u> :		an be cycled for short term operation (a er with V-14-35 left open or manually cy		4-37 will have to be utilized for lon	ng term operation of t	he Isolation				
	4). The Reactor Feedwater Pump and HP Heater outlet valve control circuits run through this area. Trip the Feedwater pumps at their respective switchgear, and place their 69-permissive switches in the 'trip' position to ensure feedwater isolation.									

74.0

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FIRE ZONE	EQUIPMENT POTENTIALLY AFFECTED	ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE				
Additional Manual Action	s Required TB-FZ-11D (cont'd):								
4) IF: #2 RBCCW Pump spuriously trips (USS 1B2)									
THEN: Remove the	THEN: Remove the trip fuses for this pump at USS 1B2 and manually re-close the breaker.								
5). Cable failures may p	prevent operation of Shutdown Cooling	Isolation Valves V-17-19 and V	'-17-54 from the Main Control Roo	m.					
<u>IF</u> : V-17-19&\	/-17-54 cannot be opened from Control	Room Panel 11F							
THEN: Operate tes	t plugs in Panel 3F per procedure 305,	section 9.0.							

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FIRE ZONE		ONE	EQUIPMENT POTENTIALLY AFFECTED	ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE				
CON	CONDENSER BAY (TB-FZ-11E)										
Refe	rences:										
GU 3	GU 3E-911-41-040 Hot Shutdown Path #1 – "A" Isolation Condenser, "B" CRD Pump, Condensate Transfer Pump, Fuel Zone Level Ind. LI-622-1001 & 1002, Rx. Pressure Ind. PI-622-999 & 1000, EDG-2										
GU 3	GU 3E-911-41-042 Cold Shutdown Path #1 – "B & C" SDC Pumps, "B" CRD, RBCCW and Service Water Pumps Fuel Zone Level Ind. LI-622-1001 & 1002, Rx. Wide Range Level Indicator LI-IA13, Rx. Pressure Ind. PI-622-999 & 1000.										
	Prompt Manual Actions: NOTE: These steps can be performed concurrently and are listed in the order of priority but are dependent on actual plant symptoms.										
1)	Confirm	scram was c	ompleted in control room, if a scram v	vas deemed necessary.							
2)			n, trip the feedwater pumps by taking 734, 735, and 736 and/or stop flow b				Regulating				
3)	NOTE:	The React	or Recirculation pumps circuits are loc	ated in this fire zone and they	have to be tripped to utilize the Fu	el Zone Level Indicat	ors.				
	<u>IF</u>	The React	or Recirculation Pumps won't trip from	the control room,							
	<u>THEN</u>	trip the pur	nps from their respective switchgear (4160V Busses 1A & 1B) and p	ace their 69 permissive switches i	n the 'trip' position.					
4)	<u>NOTE:</u>	CST may c	Irain to the Hotwell on Loss of Instrum	ient Air.							
	<u>IF</u>	CST Level	indicator is not available in the contro	I room or Instrument Air is lost,							
	<u>THEN</u>	hotwell. A shutdown.	ne Condensate Transfer Building shou oproximately 19.5 ft in the CST may b Makeup to the CST as necessary fror last resort, close V-9-11, open V-9-9	e required for isolation conden n Demineralized Water (proced	ser shell and reactor vessel make	up during cooldown to	o cold				
5)	Prior to F 4160V bi	Reactor press reakers, rem	sure decreasing to 310 psig, open the t ove 'close' fuses on top right of associ	following breakers at their respe ated 480V breaker cubicle), pro	ctive switchgear (place their 69-per vided these pumps are not required	rmissive switches in 'i d to assure adequate	trip' position on core cooling:				
	a. b. c.	Core Spray	Pumps NZ01B & NZ01C at 4160V Sv Pumps NZ01A & NZ01D at 4160V Sv Booster Pumps NZ03A & NZ03D at 4	vgr. 1C.	ed at RSP padlock).						

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	FIRE ZONE		EQUIPMENT POTENTIALLY AFFECTED	ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(\$)	REPAIR DOCUMENT REFERENCE			
cc	CONDENSER BAY (TB-FZ-11E)									
Pr	Prompt Manual Actions (Cont'd):									
6)	6) IF power is lost to 4160V 1D Bus, USS 1B3 and/or MCC 1B32 and control from the control room is not available,									
	<u>THEN</u>	Control them at their respective Local Shutdown Panel IAW Procedure 346								
		 a. LSP-DG2 b. LSP-1D c. LSP-1B3 and confirm the feeder breaker to MCC 1B32 is closed d. LSP-1B32 								
7)	<u>NOTE:</u>	If offsite powe	r is lost at a latter time, then LSP-DG2	2 will have to be fully initiated u	sing Procedure 346.					
	<u>IF</u>	1D 4160V Bu	s is being supplied by Offsite power,							
	<u>THEN</u>	TRANSFER of EDG-2	only the #1 Normal-Alternate switch to	"Alternate" (partial initiation) or	a LSP-DG2 to isolate control room	wiring and prevent s	purious starting			
		AND								
	<u>IF</u>	EDG-2 is alre	ady running,							
	<u>THEN</u>	STOP EDG-2	by momentarily taking the mode swite	ch to stop.						
8)										

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FIRE ZONE		EQUIPMENT POTENTIALLY AFFECTED	ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE		
CONDENSE	ER BAY (TB-F2	Z-11E)						
Prompt Mar	nual Actions (<mark>(Cont'd)</mark> :						
9) <u>NOTE</u> :	9) NOTE: A hot short on the 1D ammeter cable that runs to the control room can cause the 86/1D lockout relay to actuate which will either trip the EDG-2 breaker (if already closed) or will prevent the breaker from closing.							
<u>IF</u> :	EDG-2 breake	er trips or will not close (trips free) and	1 86/1D is picked up,					
<u>THEN</u> :		D fuse pair labeled FU-80 (UB) in swi oved, the breaker can be closed.	tchgear 1D unit D1 and then re	set the 86/1D lockout. Now that th	ie trip signal on the E	DG-2 breaker		
10) <u>IF</u>	Control of USS	S 1B2M and B CRD pump is required t	from the RSP (partial initiation or	f RSP).				
<u>THEN</u>	Control USS 1	B2M and B CRD pump from the RSP	IAW the instructions below.					
 Confirm feeder breaker 1B2P to USS 1B2 is closed. Obtain key from the Padlock at the RSP. Rotate keylock CRD and Breaker 1B2M Control Transfer Switch to Alternate. Confirm closed USS main Breaker, 1B2M at RSP Operate B CRD pump at RSP as required. 								

FIRE ZONE	EQUIPMENT POTENTIALLY AFFECTED	ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE
CONDENSER BAY	CORE SPRAY SYSTEM				
(TB-FZ-11E) (cont'd)	"A" Core Spray Pump Power and Control Ckt (NZ01A)	Local Brkr Operation	4160V Bus 1C	308	NA
	"B [°] Core Spray Pump Control Ckt (NZ01B)	Local Brkr Operation	4160V Bus 1D	308	NA
	"C" Core Spray Pump Power and Control Ckt (NZ01C)	Local Brkr Operation	4160V Bus 1D	308	NA
	"D" Core Spray Pump Control Ckt (NZ01D)	Local Brkr Operation	4160V Bus 1C	308	NA
	EMERGENCY SERV WTR SYS	None	NA	310	NA
	Ckt (52A) "B" ESW Pump Control	None	NA	310	NA
	Ckt (52B) "C" ESW Pump Control Ckt (52C)	None	NA	310	NA
	"D" ESW Pump Control Ckt (52D)	None	NA	310	NA
	CONDENSATE TRANSFER SYS Cond. Transfer Pump 1-1 Control Ckt	None	NA	316.1	NA
	Control Ckt Cond. Transfer Pump 1-2 Control Ckt	LSP~1B32	Chlor. Bidg.	316.1, 346	NA
	Cond. Stg. Tank Level Indication (LT-35)	Local Gage (LI-424-993)	Cond. Stg. Tank	316.1	NA

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FIRE ZONE	EQUIPMENT POTENTIALLY AFFECTED	ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(\$)	REPAIR DOCUMENT REFERENCE
CONDENSER BAY (TB-FZ-11E) (cont'd)	<u>FUEL ZONE LEVEL</u> "A", "B" Fuel Zone Level Instruments	"C", "D" Fuel Zone Level Instruments	CR Pni 5F/6F or RSP("B" 480V Swgr.Rm)	410 346	NA NA
	SERVICE WATER SYSTEM Service Wtr Pump 1-1 Control Ckt	None	NA	322	NA
	Service Wtr Pump 1-2	LSP-1B3	Intake Structure	322, 346	NA
	Control Ckt Service Wtr Hdr Press Indication (PT-6)	Local Gage (PI-30)	Intake Structure	322	NA
	<u>MSIV'S</u> Outer MSIV (North) (NS04A) Outer MSIV (South)	Inner MSIV (North) (NS03A) Inner MSIV (South)	CR Pnl 11F	301	NA
	(NS04B)	(NS03B)	CR Pnl 11F	301	NA
	ELECTRICAL DIST. SYS EDG 1 Control Ckts EDG 2 Control Ckts Brkr 1C Control Ckts Brkr 1B2P Control Ckts Brkr 1B3M Control Ckts Brkr 1B3M Control Ckts Power Feeder to DC-2 Power Feeder to DC-F 125 vdc Cntrl Pwr to Swgr 1B Brkr 1A1P Control Circuit Brkr 1A3P Control Circuit Brkr 1A3P Control Circuit Brkr 1A3M Control Circuit Brkr 1A3M Control Circuit VACP-1	None LSP-DG-2 None LSP-1D RSP LSP-1D LSP-1B3 None None Switch Cntrl to DC-A None None None None None None None None	NA #2 EDG Vault NA "D" 4160 Swgr Room "B" 480V Room "D" 4160 Swgr Room Intake Structure NA NA "B" 4160V Swgr Room NA NA NA NA NA NA NA	341 341, 346 337 337, 346 346 337, 346 338, 346 340.3 340.3 340.1 337 337 337 337 337 338 338 338 339	NA NA NA NA NA NA 340.1 NA NA NA NA NA NA NA

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FIRE ZONE	EQUIPMENT POTENTIALLY AFFECTED	ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE
CONDENSER BAY (TB-FZ-11E) (cont'd)	CONTROL ROD DRIVE "B" CRD Pump Control Circuit #2 RBCCW Pump Control Ckt. RBCCW Press Ind (13R-63)	RSP Local bkr op (USS 1B2) Local Gauge (PI-50A or 51A)	"B" 480V Room 'B' 480V Room Intake Structure	302.1, 346 309.2 309.2	NA NA NA
	SHUTDOWN COOLING SYS. V-17-19 & V-17-54	Panel 3F Test Plugs	Control Room Panel 3F	305	NA

Additional Manual Actions Required:

1. It may be necessary to use the CRD bypass line due to the loss of instrument air by performing the following:

- Open V-15-237
- Throttle V-15-30 for desired flow on FI-225-2
- Close V-15-52
- 2. The Reactor Feedwater Pump/valve control circuits run through this area. Trip the pumps at their respective switchgear, and place their 69-permissive switches in the 'trip' position to ensure feedwater system isolation,
- 3. Recharge V-11-36 Accumulator per Procedure 307 as required (accumulator is sized for approximately 5 strokes).
- 4. If power is lost to "C" Battery Room HVAC fans from MCC 1A2, then ensure that the battery room door is opened within 31 hours to prevent a buildup of hydrogen.

5. Cable failures may prevent operation of Shutdown Cooling Isolation Valves V-17-19 and V-17-54 from the Main Control Room.

IF: V-17-19 & V-17-54 cannot be opened from Control Room Panel 11F

THEN: Operate test plugs in Panel 3F per procedure 305, section 9.0.

F	IRE ZONE	EQUIPMENT POTENTIALLY AFFECTED	ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE
TB-FZ-	11E Manual	Action Required (cont'd):				
6.	<u>IF</u> : <u>THEN</u> :	#2 RBCCW Pump spuriously trips (USS 1E Remove the trip fuses for this pump at USS	,	e breaker.		
7.	<u>IF</u> : <u>THEN</u> :	Breaker for #2 Service Water Pump spurio Remove the trip fuses for this pump at USS		e breaker.		

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FIRE ZONE	EQUIPMENT POTENTIALLY AFFECTED	ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE
FEED PUMP ROOM (TB-FZ-11F)	CORE SPRAY SYS I "A" core spray pump power ckt (NZ01A) "C" core spray pump power ckt (NZ01C)	None None	NA NA	308 308	NA NA
	ELECTRICAL DISTR Brkr 1D control ckt 125V DC control pwr to 4160V Bus 1D from DC-B 125V DC control pwr to 480V bus USS 1B3 from DC-B	None Control pwr from DC-A Control pwr from DC-A	NA 4160V Swgr 1D 480V USS 1B3	337 340.1 340.1	NA NA NA
	SHUTDOWN COOLING Loop Inlet Isol Vivs (V-17-1,2,3) Loop Outlet Isol Vivs (V-17-55,56,57)	Local Manual Local Manual	SDC Room SDC Room	305 305	NA NA
	RBCCW SYSTEM SDC HX Outlet Flow control Vlv (V-5-106)	Local Manual	SDC Room	305, 309.2	NA

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F	IRE ZONE	EQUIPMENT POTENTIALLY AFFECTED	ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE
GU 3E-9	<u>ces</u> : FEED F 911-41-040 911-41-042	PUMP ROOM (TB-FZ-11F) (cont'd) (Hot Shutdown Path #2 for TB-FZ-11 (Cold Shutdown Path #2 for TB-FZ-1				
Manual	Action Requir	ed:				
(1)	<u>IF</u>	feedwater injection can not be terminated d	ue to cable failures			
	<u>THEN</u>	trip the condensate pumps and if necessary	, lower level using the EMRV's	3.		
(2)	Prior to Re position for	actor Pressure decreasing to 310 psig, oper Core Spray Pumps NZ01B and NZ01C pro	n the breakers on 4160V Swgr vided these pumps are not rec	. 1D and lockout by taking the 69 quired to assure adequate core co	permissive switch to oling.	the "trip"
(3)	Makeup to procedure	the Isolation Condenser may have to be pro (close V-11-41 & 63 and open V-9-2099 & \	ovided by a fire diesel pump ar /-11-49).	nd valve line-up should be done in	accordance with the	307
(4)	Temporary the FAN O	Control Room ventilation may need to be ir NLY mode, provided vent dampers are man	nstalled per Procedure 331.1 if ually opened.	'B' CRHVAC is not available. 'A'	CRHVAC may be av	ailable in
(5)	<u>THEN</u>	Instrument Air is lost, V-2-90 in the Condensate Transfer Building in the CST may be required for reactor vess Demineralized Water (procedure 320.1), Hig V-9-9 and open V-11-247).	el makeup during cooldown to	cold shutdown. Makeup to the C	ST as necessary from	n
(6)	<u>IF</u> THEN	V-3-9 and open V-11-247). B battery charger is not available, V-14-34 can be cycled for short term operat the Isolation Condenser with V-14-34 left op	ion (approximately 3 hours) ar en or manually cycle V-14-34.	nd then V-14-36 will have to be uti	lized for long term op	eration of
(7)	Cable failur	es may prevent operation of Shutdown Coo	ling Isolation Valves V-17-19 a	and V-17-54 from the Main Contro	I Room.	
		/-17-19 & V-17-54 cannot be opened from C Operate test plugs in Panel 3F per procedur				
(8)	THEN: I	B' Battery Charger trips Restore Battery Charger to service per proc Distribution Systems A & B).	edures 2000-OPS-3024.10C(125VDC Diagnostic & Restoration) and 340.1 (125VD)	C
(9)		USS 1B2 is not energized,				
	1	Open USS 1B2M breaker and remove close operation if necessary). Note that this cross (local manual operation if necessary). In ad energized and then confirm closed EF-1-21 temporary ventilation IAW Procedure 331.	tie is required to get another dition, ventilation will have to t	SDC pump (B or C) and RBCCW pe restored to the B 480V Room b	pump (if needed) in a y confirming MCC 1E	service 321 is

FIRE ZONE	EQUIPMENT POTENTIALLY AFFECTED	ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE
TB-FZ-11F Manual Action Require	ed (cont'd):				
	V-5-106 has to be manually opened, Open its supply breaker on MCC 1B21A a	nd then manually operate V-5-	-106.		

FIRE ZONE	EQUIPMENT POTENTIALLY AFFECTED	ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE
TURBINE BLDG. MEZZANINE SOUTH (TB-FZ-11G)	CORE SPRAY SYSTEM "B" core spray pump control ckt (NZ01B) "C" core spray pump control ckt (NZ01C)	Local Breaker operation Local Breaker operation	4160V Bus 1D 4160V Bus 1D	308 308	NA NA
	EMER SERV WTR SYSTEM "C" ESW pump (52C) control ckt "D" ESW pump (52D) control ckt	None None	NA NA	310 310	NA NA
	RBCCW/SERV WTR SYS RBCCW disch hdr press indication (PT-IA18) Serv wtr pump 1-2 control ckt Serv wtr hdr press indication (PT-6)	Local gages (PI-50, 51) LSP-1B3 Local gage (PI-30)	RB 51'EI, East on pump disch piping Intake structure Intake structure	309.2 322, 346 322	NA NA NA
	FUEL ZONE LEVEL "A", "B" fuel zone level indications	"C", "D" fuel zone level indications	CR PNL 5F/6F or RSP ("B" 480V Swgr room)	410 346	NA NA

FI	RE ZONE	EQUIPMENT POTENTIALLY AFFECTED	ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE			
TB-FZ-1	1G References:				<u> </u>				
	11-41-040 11-41-042	(Hot Shutdown Path #1 for TB-FZ-1 (Cold Shutdown Path #1 for TB-FZ-1							
	Action Required: ITION: SC	: BA may be required to get to the 4160V	switchgear rooms. The closes	t SCBA is located in the Pretreatn	nent Building (east si	de).			
1.	Confirm Unit A	uxiliary breaker is tripped on 1B 4160V s	witchgear unit B3.						
2.	2. Prior to Reactor pressure decreasing to 310 psig, open the following breakers listed below at their respective switchgear (place 69-permissive switches in 'trip' for 4160V breakers), or if the 4160V switchgear rooms are inaccessible and Core Spray System actuating signals are present, THEN override the Core Spray initiation logic by depressing the OVERRIDE switches for all the sensors that are lit and depressing all ACTUATED switches, whether lit or unlit (Panel 1F/2F) and then close the parallel injection valves (V-20-15, 21, 40 & 41). These actions are only to be performed provided these pumps are not required to assure adequate core cooling:								
	b. Core Spra	ay Pump NZ01D at 4160V Swgr. 1C. ay Pumps NZ01B & NZ01C at 4160V Swg <u>OR</u> 20-15, 21, 40 & 41 and then trip the core s ance)		ar rooms are accessible (refer to E	OP Support Procedu	re #4 or #10			
3.	Reactor feedw and/or control	rater HP heater outlet valves power and c flow utilizing the Main Feedwater Regula	control circuits are contained in ting Valves V-2-732, 733, 734,	this fire zone and may have to tri 735 and 736 valves.	p the Reactor Feedw	ater pumps			
4.	IE CS THEN V-2 the col	ST may drain to the Hotwell on Loss of Ins ST Level indicator is not available in the c 2-90 in the Condensate Transfer Building a hotwell. Approximately 19.5 ft in the CS Id shutdown. Makeup to the CST as nece otection system (as last resort, close V-9	ontrol room or Instrument Air is should be closed promptly (w ST may be required for isolatio essary from Demineralized Wa	ithin approximately 30 minutes) to n condenser shell and reactor ves ter (procedure 320.1), High Purity	sel makeup during c	ooldown to			
5.	IE CS roc <u>THEN</u> Eit	may cause VACP-1 to trip. ST level indication (5F-27), RBCCW Pres om. ther read all indicators locally <u>OR</u>							
	Open all load Note that the l	breakers on VACP-1 and re-close VMCC breakers 16, 23, 25 & 26 on VACP-1 are	C 1B2 breaker compartment C2 not needed and should remain	and then re-close VACP-1 breat open to isolate the cable failures	aker 21 for the requir	ea indicators.			

FIRE ZONE	EQUIPMENT POTENTIALLY AFFECTED	ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE
SJAE ROOM: MECH VAC PUMP ROOM; HI-LOW CONDUCTIVITY RM, CON/DEMIN AREA (TB-FZ-11H)	<u>CORE SPRAY SYSTEM</u> "A" core spray pump power ckt (NZ01A) "B" core spray pump power ckt (NZ01B) "C" core spray pump power ckt (NZ01C) "D" core spray pump power ckt (NZ01D) <u>ELECTRICAL DISTR SYS</u> Brkr 1D control ckt Pwr feeder to USS 1B2 125V DC control pwr to 4160V Swgr 1D 124V DC control pwr to 480V Swgr USS 1B3 <u>SHUTDOWN COOLING SYS</u> Loop Inlet Isol VIvs (V-17-1,2,3) Loop Outlet Isol VIvs (V-17-55,56,57) <u>RBCCW SYSTEM</u> SDC HX Outlet Flow control Viv (V-5-106)	None None None None 125V DC Control Pwr from DC-A 125V DC Control Pwr from DC-A Local Manual Local Manual Local Manual	NA NA NA NA NA None 4160V Swgr 1D 480V USS 1B3 SDC Room SDC Room SDC Room	308 308 308 308 308 308 308 340.1 340.1 340.1 305 305 305 305, 309.2	REFERENCE NA NA NA NA NA NA NA NA NA NA
	SHUTDOWN COOLING SYS. V-17-19 & V-17-54	Panel 3F Test Plugs	Control Room Panel 3F	305	NA

FI	IRE ZONE	EQUIPMENT POTENTIALLY AFFECTED	ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE
SJAE RM Referenc		AC PUMP RM; HI-LOW CONDUCTIVITY RM,	CON/DEMIN AREA (TB-FZ-	11H) (conťd)		
)11-41-040)11-41-042	(Hot Shutdown Path #2 for TB-FZ-11 (Cold Shutdown Path #2 for TB-FZ-1				
Manual A	Action Requ	lired:				
(1)		leactor Pressure decreasing to 310 psig, oper e not required to assure adequate core coolin		. 1D for Core Spray Pumps NZ01	B and NZ01C provide	ed these
(2)		o the Isolation Condenser may have to be pro e (close V-11-41 & 63 and open V-9-2099 & V		nd valve line-up should be done in	n accordance with the	e 307
(3) (4)		ry Control Room ventilation may need to be in Y mode, provided vent dampers are manually. Instrument Air is lost,		'B' CRHVAC is not available. 'A'	CRHVAC may be av	ailable in the
	<u>THEN</u>	V-2-90 in the Condensate Transfer Building in the CST may be required for reactor vess Demineralized Water (procedure 320.1), Hig 9 and open V-11-247).	el makeup during cooldown to	cold shutdown. Makeup to the C	ST as necessary fron	n
(5)	<u>IF</u>	B battery charger is not available,				
	<u>THEN</u>	V-14-34 can be cycled for short-term opera the Isolation Condenser with V-14-34 left o			tilized for long-term o	peration of
(6)	Cable fail	ures may prevent operation of Shutdown Cool	ling Isolation Valves V-17-19 a	and V-17-54 from the Main Contro	l Room.	
	1F:	V-17-19 & V-17-54 cannot be opened from C	Control Room Panel 11F			
	THEN:	Operate test plugs in Panel 3F per procedure	e 305, section 9.0.			
(7)	IE	USS 1B2 is not energized,				
	<u>THEN</u>	Open USS 1B2M breaker and remove closo operation if necessary). Note that this croso manual operation if necessary). In addition then confirm closed EF-1-21 (unit E06) and ventilation IAW Procedure 331.	stie is required to get another , ventilation will have to be rea	SDC pump (B or C) and RBCCW stored to the B 480V Room by cor	pump (if needed) in firming MCC 1B21 is	service (local s energized and

FIRE ZONE	EQUIPMENT POTENTIALLY AFFECTED	ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE
TB-FZ-11H Manual Action Requ	ired (cont'd):				
(8) <u>IF</u> <u>THEN</u>	V-5-106 has to be manually opened, Open its supply breaker on MCC 1B21A a	and then manually operate V-5-	106.		

FIF	REZONE	EQUIPMENT POTENTIALLY AFFECTED	ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE		
	TERY ROON 3–FA–26)	ELECTRICAL DISTR. SYSTEM 125V DC Distribution Center "C"	None	NA	340.3	NA		
Reference	es:							
GU 3E-91 GU 3E-91		(Hot Shutdown Path #1 for TB-FA-26 (Cold Shutdown Path #1 for TB-FA-2						
Manual A	ction Require	d:						
(1)	<u>IF</u> Ir	strument Air is lost,						
	ir	-2-90 in the Condensate Transfer Building the CST may be required for isolation cor s necessary from Demineralized Water (pr -9-11, open V-9-9 and open V-11-247).	ndenser shell and reactor vess	el makeup during cooldown to col	d shutdown. Makeup	to the CST		
(2).	If "C" Batter	y Room HVAC is lost, then ensure that the	battery room door is opened w	ithin 31 hours to prevent a buildup o	of hydrogen.			
(3)								

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FIRE ZONE	EQUIPMENT POTENTIALLY AFFECTED	ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE
CONTROL ROOM COMPLEX (OB-FA-5) OLD CABLE SPREADING ROOM (OB-FZ-4) UPPER CABLE SPREADING ROOM (OB-FZ-22A) NORTH CABLE BRIDGE TUNNEL (OB-FZ-22B) SOUTH CABLE BRIDGE TUNNEL (OB-FZ-22C)	All System/Components in selected hot and cold shutdown paths are potentially affected by a fire in these areas.	Remote Shutdown Panel and Local Shutdown Panels	Various	346 and ABN–30	NA
CONTROL ROOM (OB-FZ-5)					
<u>References</u> : GU 3E-911-41-040 GU 3E-911-41-042 Manual Action Required: (1) All manual actio	(Hot Shutdown Path #1 for Control I (Cold Shutdown Path #1 for Control ons for fires in these areas are covered	Room Complex)	ntrol Room Evacuation".		

FIRE ZONE	EQUIPMENT POTENTIALLY AFFECTED	ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE
MECHANICAL EQUIPMENT ROOM 74' (OB-FZ-22D)	VENTILATION SYSTEM B control HVAC	A control room HVAC	Control Room	331.1	NA
References:		J	1	_L	
GU 3E-911-41-040 (GU 3E-911-41-042 ((Hot Shutdown Path #1 for OB-FZ-2 (Cold Shutdown Path #1 for OB-FZ-	2D) 22D)			
Manual Action Required:					
(1) Temporary Contro available in the FA	I Room ventilation may need to be i N mode.	installed per Procedure 331.1	if 'B' CRHVAC is not available sind	ce the 'A' CRHVAC r	nay only be

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FIRE ZONE	EQUIPMENT POTENTIALLY AFFECTED	ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE
"A" 480V SWGR RM (OB-	FZ6A)				
References:					
GU 3E-911-41-040	Hot Shutdown Path #1 – "B" Isolatio 1002, Rx. I	n Condenser, "B" CRD Pump, Pressure Ind. PI-622-999 & 10		Zone Level Ind. LI-6	22-1001 &
GU 3E-911-41-043	Cold Shutdown Path #3 ~2 EMRV's repairs), I LvI Ind (w	-uel Zone Level Ind. LI-622-10	mps, Containment Spray Pump (w)01 & 1002, Rx. Pressure Ind. PI-6 perature Ind Ti-664-43A and Torus	22-999 & 1000, Rx V	Vide Range
NOTE: This 'Cold Shutdo condition (Core S the list below.	wn' Path utilizes 'Alternate Decay Heat oray, Containment Spray in Torus Cool	Removal' per procedure 2000 ing, and EMRV's). It may be r	0-OPS-3024.27, Section 4.4 to app necessary to perform repairs on af	proach the Cold Shute fected equipment as	down identified in
Prompt Manual Actions:					
NOTE: These steps ca	in be performed concurrently and are li	sted in the order of priority but	are dependent on actual plant syr	mptoms.	
1) Confirm scram was o	completed in control room, if a scram w	as deemed necessary.			
normally rad	USS 1B2 cable bus tie is located in OB cked out. The cable bus tie is bolted to could trip the main breaker of USS 1B2	the main bus at USS 1B2 in C			
	e induced short in the "A" 480 volt switc ompleted within 3 hours in order to su		of and the inability to re-energize	USS 1B2. This repa	ir has to
2) SCB	A may be required for these actions in t	he B 480V room.			
IF a fire in OB	-FZ-6A results in the loss of USS 1B2 c	lue to the tripping of its main b	reaker,		
THEN 1. Discon	nect the cable bus tie at USS 1B2 per /	Appendix R Repair Procedure	2400-APR-3730.01.		
2. Reener	gize USS 1B2 by closing breaker 1B2F	and breaker 1B2M.			
	1				

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	FIRE ZOI	NE	EQUIPMENT POTENTIALLY AFFECTED	ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE
"A"	480V SWGF	R RM (OB	FZ–6A conťd)				
Pro	mpt Manual /	Actions (co	onťd)				
	3	. <u>IF</u> <u>Then</u>	breaker 1B2M and/or B CRD Pump c control breaker 1B2M and B CRD Pu				
			1. Confirm feeder breaker 1B2P to	o USS 1B2 is closed.			
			2. Obtain key from the Padlock at	the RSP.			
			3. Rotate keylock CRD and Break	er 1B2M Control Transfer Swi	tch to Alternate.		
			4. Confirm closed USS main Brea	ker, 1B2M at RSP			
			5. Operate B CRD pump at RSP a	as required.			
3)	Prior to Rea	actor Press	sure decreasing to 310 psig, perform th	e following provided these pur	nps are not required to assure ade	equate core cooling:	
	a.		breakers and remove close fuses on to er at RSP padlock).	op right of associated 480V US	S 1B2 cubicle for Core Spray Boo	oster Pumps NZ03B	and NZ03C
	b. c.	Open bre	aker 1A2P and place 69-permissive in akers and place 69-permissive in 'trip' a			and NZ03D.	
	d.		akers and place 69-permissive in 'trip' a				
4)	<u>NOTE:</u> IF		drain to the Hotwell on Loss of Instrum el indicator is not available in the contro		ŀ,		
	<u>THEN</u>	hotwell. / Deminera	the Condensate Transfer Building sho Approximately 17.4 ft in the CST may b Ilized Water (procedure 320.1), High Po V-11-247).	e required for isolation conder	ser shell side makeup. Makeup t	o the CST as necess	sary from
	CAUTION:	SCBA ma	y be required for this manual action in th	he B 480V room.			
5)	<u>IF</u>	The B Iso	lation Condenser level indicator is not a	vailable in the control room.			
	THEN	Obtain the	e level indication from the RSP indicator	•			

FIRE ZONE	EQUIPMENT POTENTIALLY AFFECTED	ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE
"A" 480V SWGR RM	CRD HYDRAULIC SYSTEM				
(OB-FZ-6A	"A" CRD Pump (NC08A)	LSP-1A2	"A" 480V Swgr Rm	302.1, 346	NA
cont'd)	"B" CRD Pump (NC08B)	RSP	"B" 480V Swgr Rm	302.1, 346	NA
	CRD Flow to Rx Ind.	Local Gage			
1	(FI-RD36)	(FI-225-998) or	RB 51', EI SE	302.1	NA NA
		(F1-225-002)	RB 23' EI, E	302.1	NA
	CORE SPRAY SYSTEM				
	All Core Spray Pumps	Local Manual	4160V Swgr. Rms.	- 308	NA
	Control Ckts	Operation at	1C or 1D		
	(NZ01A,B,C,D)	Switchgear			
	Core Spray Booster Pumps Power	If necessary to trip pumps -	4160V Swgr, Rm. 1C	308	NA
	and Control Ckts. NZ03A and	open Feeder Breaker at			}
	NZ03D	1A2P			
	Core Spray Booster Pumps Power	If necessary to trip pumps -	"B" 480V Swgr. Rm.	308	NA
	and Control Ckts.	open Feeder Breakers at			
	NZ03B and NZ03C	USS 1B2		308	NIA
	System I Core Spray	Local Manual	RB-19'EL, NW	308	NA
	Pump Suction VIvs.				ļ
	Power and Control Ckts				
	(V-20-3, 32)	Local Manual		308	NA
	System II Core Spray	Local Manual	RB-19'EL, SW	300	INA I
	Pump Suction VIvs. Power and Control Ckts				
	(V-20-4, 33)				
	System I Parallel Vivs	Local Manual	RB 51'EL, NW	308	NA
[Control Ckts.	Local Manual		500	
	(V-20-15, 40)				
	System II Parallel Vivs	Local Manual	RB 75'EL, SOUTH	308	NA
	Control Ckts.				
	(V-20-21, 41)		1		
	(

FIRE ZONE	EQUIPMENT POTENTIALLY AFFECTED	ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE
"A" 480V SWGR. ROOM (OB–FZ–6A) (cont'd)	Sys I Core Spray Pump Disch Press Ind (PI-RV04A)	Local Gages PIT-RV03A or PI-19A	RB-19' EI, NW	308	NA
	Sys II Core Spray Pump Disch Press Ind (PI-RV04B) (FI-RD36)	Local Gages (PIT-RV03B or PI-29B)	RB-19' EI, SW	308	NA
	SHUTDOWN COOLING SYS "A" SDC Pump (NU01A) "B" SDC Pump (NU01B) "C" SDC Pump (NU01C) V-17-19 Indication Ckt. V-17-54 Indication Ckt.	LSP-1A2 RSP None LSP-1AB2 LSP-1AB2	"A" 480V Swgr Rm "B" 480V Swgr Rm NA RB 23' EI, NE RB 23' EI, NE	305, 346 305, 346 305 305, 346 305, 346	NA NA NA NA
	REACTOR LVL/PRESS INSTR. "A" FUEL ZONE LEVEL LI-IA94A PI-622-849 "B" FUEL ZONE LEVEL LI-IA94B PI-622-850 RX LEVEL INSTR. GEMAC Wide Range Level Ind. (LI-IA13) CONTAINMENT INSTR SYS Torus Level Indication	"C" Fuel Zone Lvl. (LI-622-1001) (PI-622-999) "D" Fuel Zone Lvl. (LI-622-1002) (PI-622-1000) Install Local Gage (LI-626-1007) Wide Range Torus Level (LI-37,38) or	CR PNL 5F/6F or RSP ("B" 480V Swgr Rm) CR PNL 5F/6F or RSP ("B" 480V Swgr Rm) RK01 (R.B. 75' EL, East) CR Pni 16R or	410 346 410 346 Repair Procedure 412.1 or Repair Procedure	NA NA NA 2400-APR- 3665.01 NA or
	Torus Level Indication (LI-IP09A,B) Torus Temp. Ind. TI-644-43B	Install Temporary Ind (LI-626-1122)	CR Panel 1F/2F	312	2400–APR– 3228.01 NA

FIRE ZONE	EQUIPMENT POTENTIALLY AFFECTED	ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE
"A" 480V SWGR RM (OB-FZ-6A) (cont'd)	CONTAINMENT SPRAY SYS. All Cont. Spray Pumps Pwr & Control Ckts (51 A,B,C,D)	Repair Power Feeders to 51C or 51D use local control at USS 1B2 (manually ratchet closing motor)	"B" 480V Swgr Rm	310	2400–APR– 3214.01
	System I Cont. Spray Pumps Suc. VIvs. Control Ckt (V-21-9,7)	Local Manual	RB-19' EI, NE	310	NA
	System II Cont. Spray Pumps Suct. Vlvs. Control Ckt (V-21-1,3)	Local Manual	RB-19' EI, SE	310	NA
	System I Drywell Spray Isol. Vlv. Control Ckt (V-21-11)	Local Manual	RB 51' El, East	310	NA
	System I TORUS CLG Discharge VIv. Control Ckt (V-21-17)	Local Manual	RB 23' El, North	310	NA
	System II Drywell Spray Isol Vlv. Control Ckt (V-21-5)	Local Manual	RB 23' EI, SE	310	NA
	System II TORUS CLG Discharge Vlv Cont. Ckt (V-21-13)	Local Manual	RB 23' El, South	310	NA

FIRE ZONE	EQUIPMENT POTENTIALLY AFFECTED	ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE
"A" 480V SWGR RM (OB-FZ-6A)	Sys I, Sys II, Flow Ind (FT-IP03A,B)	None	NA	310	NA
(cont'd)	EMER SERV WATER SYS ESW Pump Control CKT 52A	None	NA	310	NA
	ESW Pump Control CKT 52B	None	NA	310	NA
	ESW Pump Control CKT 52C	None	NA	310	NA
	ESW Pump Control CKT 52D	Repair Control CKT and Control Pump at breaker	4160V Swgr. Rm ID	Repair Procedure	2400-APR- 3531.01
	ESW Disch Vlv. Sys I (V-3-88)	Local Manual	RB 23' EL, North	310	NA
	ESW Disch VIv. Sys II	Local Manual	RB 23' EL, South	310	NA
	(V-3-87) CONDENSATE TRANSFER				
	Cond Storage Tank	Local Gage	Cond Storage Tank	316.1	NA
	Level (LT-35)	(LI-424-993)			
	"A" ISOLATION COND.				
	AC Steam Isol. VIv	Local Manual	RB 75' EL, East	307	NA
	(V-14-30) AC Cond. Rtn Isol. Viv	None	NA	307	NA
	(V-14-36)	None		001	10.1
	"B" ISOLATION CONDENSER				
	Shell-side Level Indicator (W-1607B)	RSP	"B" 480V Switchgear Room	307	NA
	RBCCW SYSTEM				
	Discharge Hdr. Pressure Ind. (PT-IA18)	Local Gages	RB 51' EL, East on Pump	309.2	NA
	RBCCW Pump 1-1 Power	(PI-50, 51)	Disch. Piping	000.2	
	and Control Ckt.	LSP-1A2	"A" 480V Swgr Rm	309.2, 346	NA
	RBCCW Pump 1-2 Power				
	and Control Ckt.	RSP	"B" 480V Swgr Rm	309.2, 346	NA
	Shutdown Clg. Flow Control VIv. (V-5-106) Control Ckt.	Local Manual	RB, SDC Rm	305, 309.2	NA

FIRE ZONE	EQUIPMENT POTENTIALLY AFFECTED	ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE
"A" 480V SWGR RM (OB–FZ–6A) (cont'd)	RECIRC SYSTEM "B" Recirc Loop Suction Vlv. Control Ckt.	None	NA	301	NA
((NG02B) "D" Recirc Loop Suction VIv. Control Ckt.	None	NA	301	NA
	(NG02D) "B" Recirc Loop Discharge Viv Control Ckt	None	NA	301	NA
	(NG03B) "D" Recirc Loop Discharge VIv Control Ckt	None	NA	301	NA
	(NG03D) "E" Recirc Loop Discharge Vlv Control Ckt (NG03E)	LSP-1AB2	RB 23' EL, NE	301, 346	NA
	REACTOR CLEANUP SYSTEM Drywell Isol. VIv (V-16-1) Control Ckt.	None	NA	303	NA
	ADS SYSTEM A,B,C,D,E, EMRV ADS Control Ckts (NR108A,B,C,D,E)	Temporary Control and Ind. for NR108D,E	NA	Repair Procedures	2400–APR– 3411.01
					3411.04

FIRE ZONE	EQUIPMENT POTENTIALLY AFFECTED	ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE
"A" 480V SWGR RM (OB-FZ-6A) (cont'd)	VENTILATION SYSTEM Control Rm HVAC System "A"	Control Rm HVAC System "B"	Control Room	331.1	NA
	"A" 480V Swgr Room Supply Fan (FN-56-004)	LSP-1A2	"A" 480V Swgr Rm	331, 346	NA
	"A" 480V Swgr Room Exhaust Fan (FN-56-007)	LSP-1A2 or Start Alt Exhaust Fan (FN-56-008) from MCC 1B21	"A" 480V Swgr Rm <u>or</u> "B" 480V Swgr Rm	331, 346	NA
	"A" 480V Swgr Rm HVAC Dampers	Local Manual	"A" 480V Swgr Rm	331	NA
	ELECTRICAL DISTR. SYS. Bus Tie Breaker US-2T	Disconnect Bus-Tie Cable	"B" 480 Swgr Rm	338	2400-APR- 3730.01
	Brkr 1B2M Control Ckt.	RSP	"B" 480V Swgr Rm.	338, 346	NA
	480V USS 1A2 480V MCC 1A21 480V Vital MCC 1A2 Power Feeder to 480V MCC 1A23	None None None None	NA NA NA NA	338 338 338 338 338	NA NA NA NA
	Power Feeder to 480V MCC 1A21A Power Feeder to 480V	None	NA NA	338	NA NA
	MCC 1A21B				

FIRE ZONE	EQUIPMENT POTENTIALLY AFFECTED	ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE
"A" 480V SWGR RM (OB–FZ–6A)	Power Feeder to 480V Vital MCC 1B2	None	NA	338	NA
(conťd)	Power Feeder to 480V MCC 1B23	None	NA	338	NA
	Power Feeder to 480V MCC 1B21A	None	NA	338	NA
	Power Feeder to 480V MCC 1B21B	None	NA	338	NA
	Power Feeder to 480V MCC 1AB2	None	NA	338	NA
	Power Feeder to PnI A2	None	NA	338	NA
	Power Feeder to RPS MG Set 1-1	None	NA	339	NA
	Power Feeder to RPS MG Set 1-2	None	NA	339	NA
	Power Feeder to PAIPP-1 (PDP-733-057) & RPS XMR PS-1 via SW-733-169	None	NA	339	NA
	Power Feeder to PAIPP-2 (PDP-733-058) & RPS XMR PS-1 via SW-733170	None	NA	339	NA

FIRE ZONE	EQUIPMENT POTENTIALLY AFFECTED	ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE
"A" 480V SWGR RM	Vital LTG Pnl VLDP-1	None	N/A	339	NA
(OB-FZ-6A) (cont'd)	120V Pnl. VACP-1	None	NA	339	NA
	120V Pnl. CIP-3	None	NA	339	NA
	120V Pnl. IP-4	None	NA	339	NA
	EDG#1 ECCS Idle Start Ckt	None	NA	NA	NA
	EDG#2 ECCS Idle Start Ckt	LSP-DG2	#2 EDG Vault	341, 346	NA
	120V DC PnI DC-F	None	NA	340.3	NA
	Pnl ER18A	None	NA	308	NA
	Pnl ER18B	None	NA	308	NA
	Brkr 1B2M Control Ckt.	RSP	"B" 480V Swgr Rm	338, 346	NA

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FIF	RE ZONE	EQUIPMENT POTENTIALLY AFFECTED	ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE
dditional	I Manual	Actions Required OB-FZ-6A (cont'd):				
(1)	no char	125 VDC Battery M.G. Set charger is fed b ger in service) either confirm the "B" MG Se nce with Procedure 340.1, "125 VDC Distri	t battery charger is operating pro			
(2)	• Öp • Th	be necessary to use the CRD bypass line d ben V-15-237 rottle V-15-30 for desired flow on FI-225-2 bse V-15-52	ue to the loss of instrument air b	y performing the following:		
(3).	Rechar	ge V-11-34 Accumulator per Procedure 30	7 as required (accumulator is siz	ed for approximately 5 strokes).		
(4)	<u>IF</u>	the C battery charger is not available				
	<u>THEN</u>	V-14-35 can be cycled for short term oper Isolation Condenser with V-14-35 left ope		t V-14-37 will have to be utilized for	or long term operation	of the
(5)	IF	Core Spray Pump NZ01B will be utilized for	or core cooling			
	THEN	Remove control fuses from breaker (Bus	1D, breaker D4) and manually cl	ose the breaker at the 1D Bus.		
(6).	lf power hydroge	is lost to "C" Battery Room HVAC fans from n.	VMCC 1A2, then ensure that the	e battery room door is opened withi	n 31 hours to prevent	a buildup of
(7)	<u>IF</u>	V-20-4 (MCC 1B21A) & 41 (MCC 1AB2)	and V-21-13 (MCC 1B21B) have	to be manually opened and/or V-2	1-5 (MCC 1B21B) clos	ed,
	THEN	It will be necessary to de-energize the an	plicable supply breakers prior to	opening the MOV's to prevent futur	e spurious operations	of the values

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	FIRE ZON	IE EQUIPMENT POTENTIALLY AFFI		ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE
"B" 4	180V SWGR	RM (OB-FZ-6B)					
<u>Refe</u>	erences:						
GU 3	3E-911-41-0	40 Hot Shutdown Path #2 -		Condenser, "A" CRD Pump, 2-849, Offsite Pwr available	Firewater for IC makeup, Fuel Zor	ne Level Ind. LI-IA94,	A, Rx. Pressure
GU 3	GU 3E-911-41-043 Cold Shutdown Path #3 - 2 EMRV's, Core Spray Pumps, Containment Spray Pump, ESW pump, Fuel Zone Level Ind. LI-IA94A, Rx. Pressure Ind. PI-622-849, Rx Wide Range LvI Ind LI-IA13, Torus Water Temperature Ind TI-664-43A and Torus Level Indicator (with repairs)						
Pron NOT	npt Manual <u>E:</u> Thes	<u>Actions</u> : e steps can be performed concurren	tly and are lis	sted in the order of priority but	are dependent on actual plant sy	mptoms.	
1)	Confirm sc	ram was completed in control room,	if a scram wa	as deemed necessary.			
2)	Prior to Re Booster pu	actor pressure decreasing to 310 ps mps NZ03B and NZ03C from injecti	ig, open brea ng provided t	ker 1B2P and place 69 Permi hese pumps are not required	issive Switch in Trip at 4160V Swo to assure adequate core cooling.	r. 1D to prevent Cor	e Spray
3)	<u>IF</u>	Instrument Air is lost,					
	THEN V-2-90 in the Condensate Transfer Building should be closed promptly to prevent the CST from draining to the hotwell. Approximately 17.4 ft in the CST may be required for isolation condenser shell makeup during cooldown to cold shutdown. Makeup to the CST as necessary from Demineralized Water (procedure 320.1), High Purity (procedure 351.2), or the Fire Protection system (as last resort, close V-9-11, open V-9-9 and open V-11-247).						
4)	Makeup to (close V-1	the Isolation Condenser may have t I-41 & 63 and open V-9-2099 & V-11	o be provideo 1-49).	d by a Fire diesel pump and va	alve line-up should be done in acc	ordance with the 307	7 procedure
			·				

FIRE ZONE	EQUIPMENT POTENTIALLY AFFECTED	ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE
"B" 480V SWGR. RM. (OBFZ6B)	CRD HYDRAULIC SYS. "B" CRD Pump (NC08B)	RSP	"B" 480V Swgr. Rm.	302.1, 346	NA
	CORE SPRAY SYSTEM "C" Core Spray Pump Control Ckt. (NZ01C)	None	NA	308	NA
	"B" Core Spray Booster Pump Power and Control	None	NA	308	NA
	Ckt. (NZ03B) "C" Core Spray Booster Pump Power and Control	None	NA	308	NA
	Ckt. (NZ03C) System I Core Spray Pump Suction Vlvs.	Local Manual	RB-19' EL, NW	308	NA
	Power and Control Ckts (V-20-3, 32) System I Core Spray Pump Disch. Press. Ind. (PI-RV04A)	Local Gages (PIT–RV03A or PI–RV29A)	RB19' EL, NW	308	NA
	SHUTDOWN COOLING SYS. "B" SDC Pump (NU01B) "C" SDC Pump (NU01C)	RSP None	"B" 480V Swgr. Rm. NA	305, 346 305	NA NA
	CONTAINMENT INSTR. SYS. Torus Level Indication (LI-IP09A, B)	Wide Range Torus Lvl. (LT–37 and/or LT–38) or install Temporary Ind (LI- 626-1122)	CR Pnl. 16R Or RB –19' El, NW	412.1 or Repair Procedure	NA Or 2400-APR- 3228.01

FIRE ZONE	EQUIPMENT POTENTIALLY AFFECTED	ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE
"B" 480V SWGR. RM. (OB–FZ–6B) (conťd)	RBCCW SYSTEM Disch. Hdr. Press. Ind. (PT-IA1B) RBCCW Pump 1-2 Shutdown Clg. Flow Control Viv. (V-5-106) Power Supply	Local Gages (PI–50, 51) RSP Local Manual	RB51' EL, East on Pump Disch. Piping "B" 480V Swgr. Rm. RB, SDC Room	309.2 309.2, 346 305, 309.2	NA NA NA
	CONTAINMENT SPRAY SYS. "C" Cont. Spray Pump Power and Control Ckt.	None	NA	310	NA
	(51C) "D" Cont. Spray Pump Power and Control Ckt.	None	NA	310	NA
	(51D) Sys. II Cont. Spray Pumps Suct. Vlv.	Local Manual	RB-19' EL, SE	310	NA
	Control Ckt. (V-21-1,3) Sys. II Drywell Spray Isol. VIv. Control Ckt.	Local Manual	RB–23' EL, SE	310	NA
	(V-21-5) Sys. II TORUS CLG Discharge VIv. Control Ckt. (V-21-13)	Local Manual	RB-23' EL, South	310	NA
	<u>"A" ISOLATION CONDENSER</u> Shell Makeup Valve Power Ckt. (V-11-36)	Local Manual	RB–95' EL, East	307	NA

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FIRE ZONE	EQUIPMENT POTENTIALLY AFFECTED	ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE
"B" 480V SWGR. RM.	"B" ISOLATION CONDENSER AC Steam Isol, VIV.	RSP or Local Manual	"B" 480V Swgr. Rm or	307, 346	NA
(OB-FZ-6B) (cont'd)	(V-14-32) Control Ckt.	NOF OF LOCAL MAILUAL	RB-75'EL, East	507, 540	
(001110)	DC Steam Isol. VIv.	RSP or Local Manual	"B" 480V Swgr. Rm or	307, 346	NA
	(V-14-33) Control Ckt.		RB-75'EL, East		
	DC Cond. Return Isolation Viv. Control Ckt.	RSP or Local Manual	"B" 480V Swgr. Rm or RB-75'EL, East	307, 346	NA
	(V-14-35)		RD-75 EL, East		
	AC Cond. Return Isolation	RSP	"B" 480V Swgr. Rm	307, 346	NA
	Vlv. Control Ckt.		, ·		
	(V-14-37)	DCD as Level Manual		207 246	NA
	Shell Makeup Valve Power Ckt. (V-11-34)	RSP or Local Manual	"B" 480V Swgr. Rm RB-95'EL, East	307, 346	I NA
	Shell Level Indication	RSP	"B" 480V Swgr. Rm	307, 346	NA
	(LI-IG06B)		, C		
	SERV. WTR. SYSTEM				
	Service Wtr. Hdr.	Local Gage (PI-29)	Intake Structure	322	NA
	Pressure Indication				
	(PT-6)				
	FUEL ZONE LEVEL				
	"C", "D" Fuel Zone Level	"A" and/or "B" Zone	CR Pnl. 5F/6F	410	NA
	Instruments	LvI. Instruments			
	VENTILATION OVOTENA				
	VENTILATION SYSTEM "A/B" Battery Room	RSP	"B" 480V Swgr, Rm.	331, 346	NA
	Exhaust Fan (EF 1-20)			001,010	
	"B" 480V Swgr. Rm.	RSP	"B" 480V Swgr. Rm.	334, 346	NA
	Supply Fan (SF 1-21)				

FIRE ZONE	EQUIPMENT POTENTIALLY AFFECTED	ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE
"B" 480V SWGR. RM. (OB–FZ–6B) (cont'd)	"B" 480V Swgr. Rm. Exhaust Fan (EF 1-21) "A/B" Battery Room Dampers	RSP Local Manual	"B" 480V Swgr. Rm. "A/B" Battery Rm.	331, 346 331	NA NA
	"B" 480V Swgr. Room Dampers "A" 480V Swgr. Room Alternate Exhaust Fan (FN-56-008)	Local Manual SF 1–21, EF 1–21	"B" 480V Swgr. Rm. CR Pnl. 11R	331 331	NA NA
	ELECTRICAL DISTR. SYS				
	480V USS 1B2	None	NA	338	NA
	480V MCC 1B21	None	NA	338	NA
	480V Vital MCC 1B2	None	NA	338	NA
	Power Feeder to 480V MCC 1B23	None	NA	338	NA
	Power Feeder to 480V MCC 1B21A	None	NA	338	NA
	Power Feeder to 480V MCC 1B21B	None	NA	338	NA
	Battery Charger MG Set "A"	None	NA	340.1	NA
	Battery Charger MG Set "B"	None	NA	340.1	NA
	A/B Battery Static Charger	None	NA	340.1	NA

						APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE		
"B" 480∨	B" 480V SWGR RM (OB-FZ-6B) (cont'd)								
Addition	al Manual	Actions	Required:						
(1)	<u>IF</u>	the A 4	80 Volt Switchgear Room Ventilation has	s tripped due to the fire in this	; fire zone (OB–FZ–6B),				
	AND	the Lice	ensed Operations Supervisor has directe	d its restart,					
	<u>THEN</u>	close b	confirm dampers DM-56-15 and DM-56-16 are open (manually open by disconnecting linkage if necessary) and DM-56-17 is closed (manually close by disconnecting linkage if necessary) and then restart the ventilation in accordance with Procedure 331 or install portable ventilation in the 'A' 480V Room in accordance with Procedure 331.						
(2)	<u>IF</u>	B batter	ry charger is not available,						
	<u>THEN</u>		t can be cycled for short-term operation (on Condenser with V-14-34 left open or m		hen V-14-36 will have to be utilize	ed for long term oper	ation of the		
(3)	It may	be neces	ssary to use the CRD bypass line due to t	the loss of instrument air by p	performing the following:				
	 Open V-15-237 Throttle V-15-30 for desired flow on FI-225-2 Close V-15-52 								
(4).	Rechar	ge V-11-:	36 Accumulator per Procedure 307 as re-	quired (accumulator is sized	for approximately 5 strokes).				
(5)			trol Room ventilation may need to installe rovided vent dampers are manually open		CRHVAC is not available. 'A' CRI	HVAC may be availa	ble in the FAN		

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	FIRE	ZONE	EQUIPMENT POTENTIALLY AFFECTED	ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE	
RE	RECIRC MG SET RM (OB-FZ-8A)							
<u>Ref</u>	erences:							
GU	3E-911-41	1-040 Ho	t Shutdown Path #2 – "B" Isolatior Ind. PI-622	n Condenser, "A" CRD Pump, -849, Offsite Power available	Firewater for IC Makeup, Fuel Zor	e Level Ind. LI-IA94/	∖, Rx. Pressure	
GU	3E-911-41	1-042 Co	ld Shutdown Path #2 - "A" & (B or Pressure Ir	C) SDC Pumps, "A" CRD, RB nd. PI-622-849 and Reactor W	CCW and Service Water Pumps, ide Range Level Indicator LI-IA13.	Fuel Zone Level Ind.	LI-IA94A, Rx.	
	Prompt Manual Actions: NOTE: These steps can be performed concurrently and are listed in the order of priority but are dependent on actual plant symptoms.							
1) (Confirm sc	ram was complete	ed in control room, if a scram was	deemed necessary.				
2) <u>1</u>	NOTE:	During a fire cond from an external control switch on	source will be supplied to an EMR	OB-FZ-8A), the possibility exist /, causing it to fail open. This s	ts that hot shorts will develop in the spuriously opened EMRV will be re	EMRV cabling such closable using the no	that 125 VDC rmal EMRV	
	JTION:	The following act controls associat	ion is required to preclude or termined with the EMRV's. If the EOP's r	nate a spuriously opened EMR require the use of the EMRV's t	V. This action will disable the ADS he disable switches can be returne	, High Pressure and d to the normal positi	manual on.	
	<u>IF</u>	One or more EM	RV's exhibit abnormal or spurious o <u>OR</u>	operation.				
		There are insuffic	cient indications available to determ	nine the status of an EMRV.				
	<u>THEN</u>	Ensure the react	or is scrammed in accordance with <u>AND</u>	ABN-1 "Reactor Scram."				
		Place the disable	switch on the rear of panel 1F/2F	to the "DISABLE" position for t	hose EMRV's affected.			
2)	<u>NOTE:</u>	The Reactor Re	circulation pump circuits are locat	ed in this fire zone and they h	ave to be tripped to utilize the Fue	I Zone Level Indicato	rs.	
	<u>IF</u>	The Reactor Re	circulation Pumps won't trip from	the control room,				
	THEN	Trip the pumps	from their respective switchgear (A' or 'B' 4160V Busses) and p	lace their 69-permissive switches	in the 'trip' position.		

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FIRE	ZONE	EQUIPMENT POTENTIALLY AFFECTED		LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE
CIRC MG	SET RM (OB-FZ	Z-8A)				
ompt Man	ual Actions (cor	nťd):				
Prior to R breakers,	remove 'close' fu	ises on top right of associated 480V br	reaker cubicle) provided these p	oumps are not required to assure ad	vitches in trip' position equate core cooling:	on 4160V
			by a Fire diesel pump and va	lve line-up should be done in acco	ordance with the 307	procedure (close
<u>IF</u>	Instrument Air	is lost,				
<u>THEN</u>	CST may be re	equired for reactor vessel makeup du	iring cooldown to cold shutdow	wn. Makeup to the CST as necess	ary from Demineraliz	ed Water
	CIRC MG <u>ompt Mann</u> Prior to R breakers, Make up V-11-41 & <u>IF</u>	Prior to Reactor pressure of breakers, remove 'close' furnities and the solution of the solutic distribute of the solution of the solution of the solution of t	FIRE ZONE POTENTIALLY AFFECTED CIRC MG SET RM (OB-FZ-8A) Compt Manual Actions (cont'd): Prior to Reactor pressure decreasing to 310 psig, open the follow breakers, remove 'close' fuses on top right of associated 480V bit a. Core Spray Booster Pumps NZ03B & NZ03C at b. Core Spray Pumps NZ01B & NZ01C at 4160V S Make up to the Isolation Condenser may have to be provided V-11-41 & 63 and open V-9-2099 & V-11-49). IF Instrument Air is lost, THEN V-2-90 in the Condensate Transfer Building should CST may be required for reactor vessel makeup due	FIRE ZONE POTENTIALLY AFFECTED CONTROL/INDICATION CIRC MG SET RM (OB-FZ-8A) Compt Manual Actions (cont'd): Control (cont'd): Prior to Reactor pressure decreasing to 310 psig, open the following breakers at their respective breakers, remove 'close' fuses on top right of associated 480V breaker cubicle) provided these p a. Core Spray Booster Pumps NZ03B & NZ03C at 480V USS 1B2 (fuse puller at b. Core Spray Pumps NZ01B & NZ01C at 4160V Swgr. 1D. Make up to the Isolation Condenser may have to be provided by a Fire diesel pump and va V-11-41 & 63 and open V-9-2099 & V-11-49). IE Instrument Air is lost, THEN V-2-90 in the Condensate Transfer Building should be closed promptly to preven CST may be required for reactor vessel makeup during cooldown to cold shutdow	FIRE ZONE POTENTIALLY AFFECTED CONTROL/INDICATION CONTROL/INDICATION CIRC MG SET RM (OB-FZ-8A) cont d): Prior to Reactor pressure decreasing to 310 psig, open the following breakers at their respective switchgear (place 69-permissive sw breakers, remove 'close' fuses on top right of associated 480V breaker cubicle) provided these pumps are not required to assure ad a. Core Spray Booster Pumps NZ03B & NZ03C at 480V USS 1B2 (fuse puller at RSP padlock). b. b. Core Spray Pumps NZ01B & NZ01C at 4160V Swgr. 1D. Make up to the Isolation Condenser may have to be provided by a Fire diesel pump and valve line-up should be done in accord V-11-41 & 63 and open V-9-2099 & V-11-49). IE Instrument Air is lost, THEN V-2-90 in the Condensate Transfer Building should be closed promptly to prevent the CST from draining to the hot CST may be required for reactor vessel makeup during cooldown to cold shutdown. Makeup to the CST as necess	FIRE ZONE POTENTIALLY AFFECTED CONTROL/INDICATION CONTROL/INDICATION PROCEDURE(S) CIRC MG SET RM (OB-FZ-8A)

FIRE ZONE	EQUIPMENT POTENTIALLY AFFECTED	ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE
RECIRC. MG SET RM. (OB-FZ-8A) (cont'd)	<u>CRD HYDRAULIC SYSTEM</u> CRD Return to Reactor Flow Indication (FI-RD36)	Local Gage (FI–225–0998 or FI-225-0002)	RB51' EL, SE	302.1	NA
	<u>CORE SPRAY SYSTEM</u> "B", "D" Core Spray Booster Pumps Power Ckt. (NZ03B,D)	None	NA	308	NA
	"A" Core Spray Pump	Local Manual	RB-19' EL, NW	308	NA
	Suction VIv. Power and Control Ckt. (V-20-3) "B" Core Spray Pump Suction VIv. Power and	Local Manual	RB–19' EL, SW	308	NA
	Control Ckt. (V-20-4) "D" Core Spray Pump Suction VIv. (Power and Control CKT. (V-20-33)	Local Manual	RB–19' EL, SW	308	NA
	System II Parallel Vlvs. Control Ckts. (V-20-21, 41)	Local Manual	RB75' EL, South	308	NA
	System I Pump Disch. Vlv. Power and Control Ckt. (V-20-12)	Local Manual	RB–51' EL, NW	308	NA
	System II Pump Disch. Vlv. Power and Control	Local Manual	RB-75' EL, South	308	NA
	Ckt. (V-20-18) System II Core Spray Pump Disch. Press. Ind. (PI-RV04B)	Local Gages (PI–29B, D)	RB-19' EL, SW	308	NA
					l

FIRE ZONE	EQUIPMENT POTENTIALLY AFFECTED	ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE
RECIRC. MG SET RM. (OB-FZ-8A) (cont'd)	System II Booster Pump Disch. Press. Ind. (PI-RV43B)	Local Gage (PI-40B)	RB-23'EL, SW	308	NA
	"A" ISOLATION CONDENSER				
	DC Steam Isol. Viv.	Local Manual	RB-75' EL, East	307	NA
	Control Ckt. (V-14-31) DC Cond. Return Isol. Vlv. Control Ckt. (V-14-34)	Local Manual	RB-75' EL, East	307	NA
	EMRVs				
	Valve Cont. Ckt. (EMRV A, B, C, D, E)	EMRV Disable Swts (EMRV A, B, C, D, E)	Rear CR Pnl 1F/2F	301	NA
		Temporary EMRV Control and Ind. for NR108 D, E	NA	Repair Procedures	2400-APR- 3411.01 2400-APR- 3411.02 2400-APR- 3411.03 2400-APR- 3411.04
	SHUTDOWN COOLING SYS.				
	"A" SDC Pump (NU02A) Cont, Ckt.	LSP-1A2	"A" 480V Swgr. Rm.	305, 346	NA
	"A" Loop Suct. Vlv. Cont. Ckt. (V-17-1)	Local Manual	SDC Room	305	NA
	"B" Loop Suct. Vlv. Cont. Ckt. (V-17-2)	Local Manual	SDC Room	305	NA
	"C" Loop Suct. VIv. Cont. Ckt. (V-17-3)	Local Manual	SDC Room	305	NA

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FIRE ZONE	EQUIPMENT POTENTIALLY AFFECTED	ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE
RECIRC. MG SET RM.	"A" Loop Disch. Vlv Control Ckt (V-17-55)	Local Manual	SDC Room	305	NA
(OB-FZ-8A) (cont'd)	"B" Loop Disch. Vlv	Local Manual	SDC Room	305	NA
	Control Ckt (V-17-56) "C" Loop Disch. Vlv	Local Manual	SDC Room	305	NA
	Control Ckt (V-17-57) SHUTDOWN COOLING SYS. V-17-19 & V-17-54	Panel 3F Test Plugs	Control Room Panel 3F	305	NA
	CONTAINMENT INSTR. Drywell Press Ind. (PI-IP12)	Drywell Press. Ind.	CR Pnl 10R	312	NA
	CONTAINMENT SPRAY SYS "C" Containment Spray Pump Power Ckt (51C) "D" Containment Spray Pump Power Ckt (51D)	Repair Pwr Feeders to 51C or 51D, use local control at USS 1B2 (manually ratchet closing motor)	B 480 Swgr Rm	310	2400-APR- 3214.01
	Sys. II Cont Spray Pumps Suction VIv.	Local Manual	RB -19' EL, SE	310	NA
	Control Ckt (V-21-1, 3) Sys. II Drywell Spray Isol. Vlv Control Ckt	Local Manual	RB -23' EL, SE	310	NA
	(V-21-5) Sys. II TORUS CLG Discharge VIv. Control Ckt (V-21-13)	Local Manual	RB -23' EL, South	310	NA
	Sys. II Flow Ind. (FI-IP03B)	None	NA	310	NA
	EMER SERV WATER SYS ESW Disch VIv Sys II (V-3-87)	Local Manual	RB 23' EL, South	310	NA

FIRE ZONE	EQUIPMENT POTENTIALLY AFFECTED	ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE
RECIRC. MG SET RM. (OB-FZ-8A) (cont'd)	RECIRC SYSTEM "E" Loop Discharge Vlv. (NG03E) Cont Ckt	LSP-1AB2	RB 23' EL. NE	301, 305, 346	NA
	<u>MSIV's</u> Inner MSIV, North (NS03A) Inner MSIV, South (NS03B)	Outer MSIV, North (NS04A) Outer MSIV, South (NS04B)	CR Pnl 11F CR Pnl 11F	301 301	NA NA
	ELECTRICAL DISTR. SYS Power Feeder to 480V MCC 1A21A Power Feeder to 125VDC	None	NA	338 340.1	
	MCC DC-1 125V DC Control Power to 4160V Swgr 1D from DC-B	125V DC from DC-A	4160V Swgr. 1D USS 1B3	340.1	
	125V DC Cont Power to 480V USS 1B3 from DC-B	125V DC from DC-A	033 183	540.1	

FIF	RE ZONE		EQUIPMENT POTENTIALLY AFFECTED	ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE		
Additional			Required: RECIRC MG SET RM (OB-						
(1)	(1) RC makeup can be provided (if required) using the CRD pumps by manually opening the CRD bypass valves V-15-30 & 237 and closing V-15-52.								
(2)	(2) Recharge V-11-34 Accumulator per Procedure 307 as required (accumulator is sized for approximately 5 strokes). Recharge V-11-34 Accumulator per Procedure 307 as required (accumulator is sized for approximately 5 strokes).								
(3)	(3) To restore power to USS 1B3 for 'B' Control Room HVAC, manually open breaker 1B3M and remove 'close' fuses, trip all load breakers on 1B3 and then rack in the breaker US3T and manually close breaker IAW Procedure 338. Note that temporary Control Room ventilation can be installed per Procedure 331.1 if needed.								
(4)	IF at least one recirculaiton loop cannot be verified open using Control Room indications,								
	<u>THEN</u>	EN verify at least one loop is open per Attachment ABN-29-2.							
(5)	Cable fai	lures m	ay prevent operation of Shutdown Coo	oling Isolation Valves V-17-19	and V-17-54 from the Main Contro	l Room.			
	<u>IF</u> :	V-17-1	19 & V-17-54 cannot be opened from (Control Room Panel 11F					
	THEN:	Opera	ate test plugs in Panel 3F per procedu	re 305, section 9.0.					
(6)	Cable fa	ilures n	nay prevent operation of Shutdown Co	oling Loop Isolation Valves fro	m the Main Control Room.				
	<u>IF</u> :	Any S	DC valve (V-17-1, 2, 3, 55, 56 & 57) h	as to be manually opened,					
	<u>THEN</u> :	<u>THEN:</u> Open their supply breakers at MCC DC-1 on Rx Bldg 23' SE, and manually operate the valves as required.							

FIR	RE ZONE	EQUIPMENT POTENTIALLY AFFECTED	ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	DOCUMENT REFERENCE		
Additional	Manual A	Actions Required: RECIRC MG SET RM (OF	B-FZ-8A) (cont'd)					
(7)	Cable fa	ilures may prevent operation of RBCCW Shu	utdown Cooling Outlet Valve V-5	i-106 from the main Control Room				
	IF:	V-5-106 cannot be operated from the Cont	106 cannot be operated from the Control Room					
	THEN: Manually open breaker B03 at MCC 1B21A on Rx Bldg 23', and manually operate the valve as required.							
(8)	<u>IF</u>	USS 1B2 is not energized,						
	<u>THEN</u>	Open USS 1B2M breaker and remove close fuses. Crosstie USS 1A2 & 1B2 IAW Procedure 338 by closing the tie-breaker (local manual operation if necessary). Note that this crosstie is required to get another SDC pump (B or C) and RBCCW pump (if needed) in service (local manual operation if necessary). In addition, ventilation will have to be restored to the B 480V Room by confirming MCC 1B21 is energized and then confirm closed EF-1-21 (unit E06) and SF-1-21 (unit D06) MCC 1B21 breakers and start EF-1-21 & SF-1-21 or provide temporary ventilation IAW Procedure 331.						
(9)	<u>IF</u>	HVAC is lost to the "A/B" battery room and the	ne battery chargers are operating	J,				
	<u>THEN</u>	N ensure that the battery room door is opened within 87 hours to prevent a buildup of hydrogen.						

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1	RE ZONE	EQUIPMENT POTENTIALLY AFFECTED	ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE	
MECH. EQUIPT. RM (OB-FZ-8B)		VENTILATION SYSTEM Control Room HVAC System "A"	Control Room HVAC System "B"	Control Room	331.1	NA	
<u>Referen</u>	ces:						
	11-41-040 11-41-042	(Hot Shutdown Path #2 for OB-FZ- (Cold Shutdown Path #2 for OB-FZ					
Manual	Action Required:						
(1)		r pressure decreasing to 310 psig, ope kers and remove close fuses for 480V				hes in 'trip'	
	b. Core Sp	ray Booster Pumps NZ03A & NZ03D a ray Booster Pumps NZ03B & NZ03C a ray Pumps NZ01B & NZ01C at 4160V	t 480V USS 1B2.				
(2)		rer to USS 1B3 for 'B' Control Room H ker 1A3T and manually close breaker .1 if needed.					
(3)	<u>IF</u> Inst	rument Air is lost,					
	in th Den	90 in the Condensate Transfer Buildin e CST may be required for reactor ves hineralized Water (procedure 320.1), H 9 and open V-11-247).	sel makeup during cooldown to	cold shutdown. Makeup to the C	ST as necessary from	า	
	v-9-9 and open v-11-247). Makeup to the Isolation Condenser may have to be provided by a Fire diesel pump and valve line-up should be done in accordance with the 307 procedure (close V-11-41 & 63 and open V-9-2099 & V-11-49).						
(4)	Makeup to the			·		9 307	

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(6) [F T] (7) C [F (8) Ca [F) tion Required I <u>F</u> at I <u>THEN</u> ver	east one recirculation loop cannot be ver	ified open using Control Room	indications						
(6) [F T] (7) C [F (8) Ca [F	I <u>F</u> at I THEN ver	east one recirculation loop cannot be ver	ified open using Control Room	indications						
[7] (7) C [6] (8) Ca [6]	 THENver		ified open using Control Room	indications						
(7) C IE <u>Ti</u> (8) Ca IE		ify at least one loop is open per Attachme	at least one recirculation loop cannot be verified open using Control Room indications,							
<u>ال</u> (8) Ca الح	Cable failures	verify at least one loop is open per Attachment ABN-29-2.								
		able failures may prevent operation of Shutdown Cooling Isolation Valves V-17-19 and V-17-54 from the Main Control Room.								
(8) Ca 	IE: V-17-19 & V-17-54 cannot be opened from Control Room Panel 11F									
<u>1</u>	<u>THEN</u> : Op	erate test plugs in Panel 3F per procedur	e 305, section 9.0.							
	able failures r	may prevent operation of Shutdown Cooli	ng Loop Isolation Valves from	the Main Control Room.						
I	I <u>F</u> : Any	y SDC valve (V-17-1, 2, 3, 55, 56 & 57) h	as to be manually opened,							
		en their supply breakers at MCC DC-1 or uired.	n Rx Bldg 23' SE, and manuall	y operate the valves as						
(9) C	Cable failures	may prevent operation of RBCCW Shute	lown Cooling Outlet Valve V-5	-106 from the main Control Room						
<u>1</u>	<u>IF</u> : V-8	5-106 cannot be operated from the Contro	ol Room							
T	<u>THEN</u> : Ma	nually open breaker B03 at MCC 1B21A	on Rx Bldg 23', and manually	operate the valve as required.						
(10) <u>IF</u>	I <u>F</u> US	S 1B2 is not energized,								
THEN Open USS 1B2M breaker and remove close fuses. Crosstie USS 1A2 & 1B2 IAW Procedure 338 by closing the tie-breaker (local manu operation if necessary). Note that this crosstie is required to get another SDC pump (B or C) and RBCCW pump (if needed) in service (manual operation if necessary). In addition, ventilation will have to be restored to the B 480V Room by confirming MCC 1B21 is energized and then confirm closed EF-1-21 (unit E06) and SF-1-21 (unit D06) MCC 1B21 breakers and start EF-1-21 & SF-1-21 or provide tempo ventilation IAW Procedure 331.						ervice (local energized				
		st to the "A/B" battery room and the batten ildup of hydrogen.	y chargers are operating, then	ensure that the battery room door i	s opened within 87 h	ours to				

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	FIRE	ZONE	EQUIPMENT POTENTIALLY AFFECTED	ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE
A/B	BATTERY	RM. (OB-FZ-80	2)				
<u>REF</u>	ERENCE	<u>5</u>					
GU	3E - 911-41	-040 Hot Shutdo	wn Path #2 – "B" Isolation Conder Pressure Ind. PI-62	iser, "A" CRD Pump, Firewate 2-999 & 1000, Offsite Power a		Ind. LI-622-1001 & 1	002, Rx.
GU	3E-911 - 41	-042 Cold Shutd	lown Path #2 - "A" & (B or C) SDC PI-622-999 & 1000	Pumps, "A" CRD, RBCCW an and Reactor Wide Range Leve		001 & 1002, Rx. Pres	ssure Ind.
Proi		al Actions:	e performed concurrently and are li	sted in the order of priority but	are dependent on actual plant sv	motoms	
		·	, ,		are dependent on detail plant sy	mptorno.	
1)	Confirm	scram was comp	pleted in control room, if a scram w	as deemed necessary.			
2)	NOTE:	During a fire i	n the A/B Battery Room (OB-FZ-80	C), the possibility exists that 12	25 vdc control power will be lost to	the "B" 4160V Swite	chgear.
	CAUTIO	<u>N</u> : The feedwate	r pumps might have to be secured	to prevent an overfill condition	۱.		
-	<u>IF</u>	the feedwater	pumps are required to be secured	i,			
	<u>THEN</u>	From the con V-2-12.	trol room, Place the Feedwater cor	ntrol switches in PTL (1B & 1C	pumps may not trip) and/or stop t	flow by closing V-2-1	0, V-2-11 and
3)	<u>NOTE:</u>	The Reactor R	ecirculation pump circuits are locat	ted in this fire zone and they h	ave to be tripped to utilize the Fue	I Zone Level Indicato	ors.
	<u>IF</u>	The Reactor R	ecirculation Pumps won't trip from	the control room,			
	<u>THEN</u>	Trip the pump	os from their respective switchgear	('A' or 'B' 4160V Busses) and	place their 69-permissive switche	s in the 'trip' position	
4)	<u>NOTE</u> :	During a fire i	n the A/B Battery Room (OB-FZ-80	C), the possibility exists that th	e Plant page and alarm system m	ay be lost.	
	<u>IF</u>	The Plant page	e and alarm system is lost,				
	THEN	Perform comm	unication using radios.				

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	FIRE Z	ONE	EQUIPMENT POTENTIALLY AFFECTED	ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE		
	BATTERY F nt'd)	RM. (OB-FZ-8C	;)						
Pro	Prompt Manual Actions (cont'd)								
5)	5) Prior to Reactor pressure decreasing to 310 psig, open the following breakers at their respective switchgear (place 69-permissive switches in trip' position on 4160V breakers, remove 'close' fuses on top right of associated 480V breaker cubicle) provided these pumps are not required to assure adequate core cooling:								
	 a. Core Spray Booster Pumps NZ03A & NZ03D at 480 USS 1A2 (fuse puller at RSP padlock). b. Core Spray Booster Pumps NZ03B & NZ03C at 480V USS 1B2 (fuse puller at RSP padlock). c. Core Spray Pumps NZ01B & NZ01C at 4160V Swgr. 1D. d. Core Spray Pump NZ01A & NZ01D at 4160V Swgr. 1C 								
6)			ondenser may have to be provided 9-2099 & V-11-49). Note Isolation						
7)	<u>NOTE:</u>	USS 1A2 mai	n breaker may trip						
	<u>IF</u>	USS 1A2 brea	aker trips,						
	<u>THEN</u>	Control USS 1 transferred to	1A2 Main breaker at LSP-1A2 IAW LSP-1A2.	with Procedure 346. Note the	at control of the A CRD, SDC and	RBCCW pumps will	also be		
8)	NOTE:	CST may drai	in to the Hotwell on Loss of Instrum	nent Air.					
	<u>IF</u>	CST Level inc	licator is not available in the contro	ol room or Instrument Air is los	t,				
	THEN V-2-90 in the Condensate Transfer Building should be closed promptly (within approximately 73 minutes) to prevent the CST from draining to the hotwell. Approximately 10.1 ft in the CST may be required for reactor vessel makeup during cool down to cold shutdown. Makeup to the CST as necessary from Demineralized Water (procedure 320.1), High Purity (procedure 351.2), or the Fire Protection system (as last resort, close V-9-11, open V-9-9 and open V-11-247).								
		· · · · · · · · · · · · · · · · · · ·							

FIRE ZONE	EQUIPMENT POTENTIALLY AFFECTED	ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE
A/B BATTERY RM. (OB–FZ–8C) (cont'd)	CRD HYDRAULIC SYSTEM "A" CRD Pump Cont. Ckt.	LSP-1A2	"A" 480V Swgr. Rm.	302.1, 346	NA
(cont u)	CRD Return to Reactor Flow Ind. (FI-RD36)	Local Gage (FI-225-998 or FI-225- 002)	RB 51'EL, SE or RB 23' EL	302.1	NA
	<u>CORE SPRAY SYSTEM</u> All Core Spray Pumps Control Ckts. (NZ01A,B,C,D)	Local Manual at Switchgear	4160V Swgr. Rooms 1C or 1D	308	NA
	All Core Spray Booster Pumps Power and Control Ckts. (NZ03A,B,C,D)	None	NA	308	NA
	System I Core Spray Pump Suction Vlvs. Power and Control Ckts. (V-20-3,32)	Local Manual	RB-19'EL, NW	308	NA
	System II Core Spray Pump Suction Vlvs. Power and Control Ckts. (V-20-4,33)	Local Manual	RB-19'EL, SW	308	NA
	System I Parallel Vivs. Control Ckts. (V-20-15,40) and V-20- 15 Power Ckt.	Local Manual	RB-51'EL, NW	308	NA

FIRE ZONE	EQUIPMENT POTENTIALLY AFFECTED	ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE
A/B BATTERY RM. (OB-FZ8C)	System II Parallel Vivs. Control Ckts. (V-20-21,41)	Local Manual	RB-75'EL, South	308	NA
(cont'd)	System I Testable Check Vlvs. Control Ckts. (NZ02A,C)	None	NA	308	NA
	System I Core Spray Pump Disch. Press. Ind. (PI-RV04A)	Local Gages (PIT- RV03A or PI-RV29A)	RB-19'EL, NW	308	NA
	System II Core Spray Pump Disch. Press. Ind. (PI-RV04B)	Local Gages (PIT- RV03B or PI-RV29B)	RB-19'EL, SW	308	NA
	System II Core Spray Booster Pump Disch. Press. Ind. (PI-RV43B)	Local Gage (PI-40B)	RB-23'EL, SW	308	NA
	<u>"A" ISOLATION CONDENSER</u> AC Steam Isol. Vlv. Control Ckt. (V-14-30)	Local Manual	RB-75'EL, East	307	NA
	DC Steam Isol. VIv. Control Ckt. (V-14-31)	Local Manual	RB-75'EL, East	307	NA
	DC Cond. Return VIv. Control Ckt. (V-14-34)	Local Manual	RB-75'EL, East	307	NA
	<u>"B" ISOLATION CONDENSER</u> Shell-side Level Indicator (LI-IG07B)	RSP	"B" 480V Switchgear Room	307	NA

FIRE ZONE	EQUIPMENT POTENTIALLY AFFECTED	ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE
A/B BATTERY RM. (OB-FZ-8C)	AC Cond. Return VIv. Control Ckt. (V-14-36)	Local Manual	RB-75'EL, East	307	NA
(cont'd)	Shell Makeup VIv. Power and Control Ckt. (V-11-36)	Local Manual	RB-95'EL, East	307	NA
	EMRVs "A" EMRV Ind. Ckt.	None	NA	308	NA
	(NR108A) "B" EMRV Ind. Ckt.	None	NA	308	NA
	(NR108B) "C" EMRV Ind. Ckt.	None	NA	308	NA
	(NR108C) "D" EMRV Ind. Ckt. (NR108D)	None	NA	308	NA
	"E" EMRV Ind. Ckt. (NR108E)	None	NA	308	NA
	SHUTDOWN COOLING SYS. "A" SDC Pump Control Ckt.	LSP-1A2	"A" 480V Swgr. Room	305, 346	NA

FIRE ZONE	EQUIPMENT POTENTIALLY AFFECTED	ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE
A/B BATTERY RM. (OB-FZ-8C)	"B" SDC Pump Control Ckt. "C" SDC Pump Control Ckt.	RSP None	"B" 480V Swgr. Room NA	305, 346 305	NA NA
(conťd)	"A" Loop Suction VIv.	Local Manual	SDC Room	305	NA
	Control Ckt. (V-17-1) "B" Loop Suction Vlv. Control Ckt. (V-17-2)	Local Manual	SDC Room	305	NA
	"C" Loop Suction Vlv. Control Ckt. (V-17-3)	Local Manual	SDC Room	305	NA
	"A" Loop Disch. Vlv. Control Ckt. (V-17-55)	Local Manual	SDC Room	305	NA
	"B" Loop Disch. Vlv. Control Ckt. (V-17-56)	Local Manual	SDC Room	305	NA
	"C" Loop Disch. Vlv.	Local Manual	SDC Room	305	NA
	Control Ckt. (V-17-57) SDC System Inlet Isol.	LSP-1AB2	RB-23'EL, NE	305, 346	NA
	Vlv. Ind. Ckt. (V-17-19) SDC System Outlet Isol. Vlv. Ind. Ckt. (V-17-54)	LSP-1AB2	RB-23'EL, NE	305, 346	NA
	RX. LEVEL/PRESS. INSTR. "A", "B" Fuel Zone Level Instr. GEMAC Wide Range Level Indication (LI-IA13)	"C", "D" Fuel Zone Level Instr. Install Local Gage (LI-626-1007)	CR Pnl. 5F/6F or RSP ("B" 480V Swgr. Rm.) RK01 (RB-75'EL, East)	410 346 Repair Procedure	NA 2400-APR- 3665.01

FIRE ZONE	EQUIPMENT POTENTIALLY AFFECTED	ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE
A/B BATTERY RM. (OB–FZ–8C) (cont'd)	CONTAINMENT INSTR. Torus Level Indicator (LT-IP09A,B)	Wide Range Torus Level (LT-37,38)	CR Pnl. 16R	412.1	NA
	Torus Temperature Ind. (TE-644-43 A&B)	None	NA	312	NA
	RBCCW SYSTEM Discharge Header Press Indication (PT-IA18)	Local Gages (PI-50,51)	RB-51'El, East on Pump Disch. Piping	309.2	NA
	RBCCW Pump 1-1 Control Ckt.	LSP-1A2 or manually close breaker at USS 1A2	"A" 480V Swgr. Rm.	309.2, 346	NA
	RBCCW Pump 1-2 Control Ckt.	RSP	"B" 480V Swgr. Rm.	309.2, 346	NA
	SDC Flow Control VIv. Control Ckt. (V-5-106)	Local Manual	SDC Room	305, 309.2	NA
	RX. CLEANUP SYSTEM Aux. Pump Suct. Vlv. Control Ckt. (V-16-2)	Local Manual	RB-51'EL, South	303	NA
L	<u> </u>			<u> </u>	

FIRE ZONE	EQUIPMENT POTENTIALLY AFFECTED	ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE
A/B BATTERY RM. (OB-FZ-8C)	Aux. Pump Bypass Vlv. Control Ckt. (V-16-14)	Local Manual	RB-51'EL, South	303	NA
(cont'd)	<u>CONDENSATE TRANSFER</u> Cond. Storage Tank Level Ind. (LT-35)	Local Gage (LI-424-993)	Cond. Storage Tan	316.1	NA
	CONTAINMENT SPRAY SYS Containment spray pumps power (C,D only) and control ckts (51A,B,C,D)	Repair pwr feeders to 51C or 51D. Use local control at USS 1B2 (manually ratchet closing motor)	"B" 480V swgr Rm	310	2400-APR- 3214.01
	Sys I cont spray pumps suct vlvs control ckt (V-21-9,7)	Local Manual	RB -19' EL, NE	310	NA
	Sys II cont spray pmps suct vivs control ckt	Local Manual	RB -19' EL, SE	310	NA
	(V-21-1,3) Sys I drywell spray isol vlv control ckt	Local Manual	RB 51' EL, East	310	NA
	(V-21-11) Sys I TORUS CLG Discharge vlv	Local Manual	RB 23' EL, North	310	NA
	control ckt (V-21-17) Sys II drywell spray isol vlv control ckt (V-21-5)	Local Manual	RB 23' EL, SE	310	NA
	Sys II TORUS CLG Discharge vlv control ckt (V-21-13)	Local Manual	RB 23' EL, South	310	NA

FIRE ZONE	EQUIPMENT POTENTIALLY AFFECTED	ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE
A/B BATTERY RM. (OB–FZ–8C) (cont'd)	EMER SERV WTR SYS ESW disch vlv, Sys I (V-3-88) ESW disch vlv, Sys II (V-3-87)	Local Manual Local Manual	RB 23' EL, North RB 23' EL, South	310 310	NA NA
	VENTILATION SYSTEM Control room HVAC Sys. "A"	Control Room HVAC Sys. "B"	Control Room	331.1	NA
	'A' 480V Rm Supply Fan FN-56-4	LSP-1A2	'A' 480V Room	338, 346	NA
	'A' 480V Rm Exhaust Fan FN-56-7	LSP-1A2	'A' 480V Room	338, 346	NA
	SERVICE WATER SYS Service wtr htr press indication (PT-6)	Local gage (PI-29)	Intake Structure	322	NA
	RECIRC SYSTEM "E" recirc loop disch vlv control ckt (V-37-54)	LSP-1AB2	RB 23' EL, NE	301, 346	NA
	<u>MSIV'S</u> Inner MSIV, north (NS03A) Inner MSIV, south (NS03B)	Outer MSIV, North (NS04A) Outer MSIV, south (NS04B)	CRPNL11F CRPNL11F	301 301	NA NA
	ELECTRICAL DISTR SYS 125V DC Battery "A" 125V DC Battery "B"	None None	NA NA	340.1 340.1	NA NA

FIRE ZONE	EQUIPMENT POTENTIALLY AFFECTED	ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE
A/B BATTERY RM. (OB-FZ-8C) (cont'd)	ELECTRICAL DISTR SYS A/B batteries static charger	None	NA	340.1	NA
	Battery charger MG set "B" power feeder	None	NA	340.1	NA
	480V power to MCC1A21A	None	NA	338	NA
	Static inverter pwr to RSP (ALT)	Power to RSP from PnI IP-4 (Norm)	"B" 480V swgr rm	346	NA
	Brkr 1A2M control ckt	LSP-1A2	" A" 480V swgr rm	338, 346	NA
	Power feeder to pnI DC-1	None	NA	340.1	NA
	125V DC Pnl "D"	None	NA	340.1	NA
	#2 EDG fast start ckt	LSP-DG2 (will not regain fast start ckt)	#2 EDG Vault	341, 346	NA
	EDG #1 & #2 Idle Ckt.	None	NA	NA	NA
	120V AC power to pnl 9R	None	NA	339	NA
	Power feeder to pnl ER18A	None	NA	340.1	NA
	Power feeder to pnI ER18B	None	NA	340.1	NA

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FIF	RE ZONE EQUIPMENT ALTERNATE LOCATION OF ALTERNATE APPLICABLE DOCUMENT CONTROL/INDICATION PROCEDURE(S) REPAIR DOCUMENT REFERENCE								
OB-FZ-80 Additiona		ctions Required:			• <u></u>				
(1)	OpeThree	e necessary to use the CRD bypass line due t en V-15-237 ottle V-15-30 for desired flow on FI-225-2 se V-15-52	o the loss of instrument air by	performing the following:					
(2)	and pla	actor Feedwater Pump/FW Regulating valve c ace their 69-permissive switches in the 'trip' po s isolated,							
(3)	Rechar	ge V-11-34 Accumulator per Procedure 307 a	s required (accumulator is size	ed for approximately 5 strokes).					
(4)	breaker	re 'B' Control Room HVAC, it may be necessa 1B3M at USS 1B3, trip all load breakers on 1 (Unit 061C) is closed. Note that temporary co	B3, close tie breaker 1A3T at	USS 1A3 IAW Procedure 338, and	d confirm Control Ro				
(5)	<u>IF</u>	USS 1B2 is not energized,							
	<u>THEN</u>	Open USS 1B2M breaker and remove close operation if necessary). Note that this cross manual operation of SDC and RBCCW pum breaker. In addition, ventilation will have to EF-1-21 (unit E06) and SF-1-21 (unit D06) M 331.	tie is required to get another 5 p may be required. If local op be restored to the B 480V Roo	SDC pump (B or C) and RBCCW p eration is required, remove trip fue om by confirming MCC 1B21 is en	oump (if needed) in s ses prior to manually ergized and then col	ervice. Local closing the nfirm closed			
(6)	<u>IF</u> THEN	at least one recirculation loop cannot be ver verify at least one loop is open per Attachme	ified open using Control Room ent ABN-29-2.	indications,					
(7)	<u>IF</u> THEN	Breaker for RBCCW Pump 1-1 spuriously tri Remove the trip fuses from the breaker cubi		breaker.					
(8)	<u>IF</u>	Any MOV's for SDC (V-17-1, 2, 3, 55, 56 or	57) or RBCCW (V-5-106) hav	e to be manually opened					
	<u>THEN</u>	Open the valve's supply breaker at MCC DC	C-1 for SDC valves and MCC 1	B21A for V-5-106 before manual	y operating the valve	Э.			
(9)	May hav	ve to use LSP-1AB2 for controlling V-17-19 &	54 and V-37-54						
(10)	0) If HVAC is lost to the "A/B" battery room and the battery chargers are operating, then ensure that the battery room door is opened within 87 hours to prevent a buildup of hydrogen.								

FIRE ZONE	EQUIPMENT POTENTIALLY AFFECTED	ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE
OFFICE BLDG RMS (OB-FA-9)	<u>CONDENSATE TRANSFER</u> Cond. Storage Tank Level Ind. (LT-35)	Local Gage (LI-424-993)	Cond. Storage Tank	316.1	NA
	EMRVS "A" EMRV control ckt "B" EMRV control ckt	None None	NA NA	308 308	NA NA
	RX. LEVEL/PRESS. INSTR. GEMAC Wide Range Level Indication (LI-IA 13)	Install Local Gage (LI-626-1007)	RK01 (RB-75'EL. East)	Repair Procedure	2400-APR- 3665.01
	RBCCW SYSTEM Discharge Header Press Indication (PT-IA 18)	Local Gages (PI-50, 51)	RB-51' El. East on Pump Disch. Piping	309.2	NA
	SERVICE WATER SYS Service water header press indication (PT-6)	Local gage (PI-30)	Intake Structure	322	NA
	SHUTDOWN COOLING SYS. V-17-19 & V-17-54	Panel 3F Test Plugs	Control Room Panel 3F	305	NA
	VENTILATION SYSTEM Control Room HVAC System "A" fan power circuit	Control Room HVAC System "B"	Control Room	331.1	NA

Procedure ABN-29 Rev. 9 DF ALTERNATE APPLICABLE REPAIR DOCUMEN

FIF	RE ZONE	EQUIPMENT POTENTIALLY AFFECTED	ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE
OFFICE I (OB–FA– (cont'd)	BLDG RMS 9)					
Referenc	<u>es</u> :					
	11-41-040 11-41-042	(Hot Shutdown Path #1 for OB-FA-9) (Cold Shutdown Path #1 for OB-FA-9				
Manual A	ction Requir	red:				
(1)	CST may	drain to the Hotwell on Loss of Instrument A	.ir.			
	<u>IF</u>	CST Level indicator is not available in the co	ontrol room or Instrument Air is	s lost,		
		V-2-90 in the Condensate Transfer Building the hotwell. Approximately 19.5 ft in the CS cold shutdown. Makeup to the CST as nece Protection system (as last resort, close V-9-	T may be required for isolation ssary from Demineralized Wa	n condenser shell and reactor ves ter (procedure 320.1), High Purity	sel makeup during co	ool down to
(2)	Cable fail	ures may prevent operation of Shutdown Co	oling Isolation Valves V-17-19	and V-17-54 from the Main Cont	rol Room.	
	<u>IF</u> :	V-17-19 & V-17-54 cannot be opened from	Control Room Panel 11F			
	THEN:	Operate test plugs in Panel 3F per procedu	re 305, section 9.0.			
(3)	A/B Batter	y Room Ventilation may be lost due to cable	failures in this fire area.			
	<u>IF</u> :	A/B Battery Room Ventilation is lost.				
		Repair dampers (block open) if failed closed ventilation per Procedure 331.	d and EF-1-20 may have to be	run with its control switch in the "	Bypass" position or i	nstall portable
(4)	B Control	Room Ventilation may be lost due to LFAP#	6 cable failures in this fire area	a.		
	<u>IF</u> :	B Control Room Ventilation is lost.				
	<u>THEN</u> :	FN-826-8B may have to be run with	its control switch in the "Bypa	ss" position		

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FIRE ZONI	EQUIPMENT POTENTIALLY AFFECTED	ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE			
	ANGE AREA (OB-FZ-10A)							
References:								
GU 3E-911-41-04	GU 3E-911-41-040 Hot Shutdown Path #2 - "A" Isolation Condenser, "A" CRD Pump, Firewater for IC Makeup, Fuel Zone Level Ind. LI-622-1001 & 1002, Rx. Pressure Ind. PI-622-999 & 1000, Offsite Power available							
GU 3E-911-41-04		C) SDC Pumps, "A" CRD, RB0 2-999 & 1000and Reactor Wide	CCW and Service Water Pumps, I e Range Level Indicator (with repa	.I-622-1001 & 1002, irs).	Rx. Pressure			
Prompt Manual A								
NOTE: These	teps can be performed concurrently and are I	isted in the order of priority but	are dependent on actual plant sy	nptoms.				
1) Confirm scran	was completed in control room, if a scram wa	s deemed necessary.						
VDC	a fire condition in the Monitor and Change Are rom an external source will be supplied to an E ' control switch on 1F/2F.							
	llowing action is required to preclude or termina Is associated with the EMRV's. If the EOP's re							
<u>IF</u> One	r more EMRV's exhibit abnormal or spurious of OR	peration.						
There	are insufficient indications available to determin	ne the status of an EMRV.						
<u>THEN</u> Ensu	e the reactor is scrammed in accordance with A	ABN-1 "Reactor Scram".						
Place	<u>AND</u> Place the disable switch on the rear of Panel 1F/2F to the "DISABLE" position for those EMRV's affected.							

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	FIRE ZONE	EQUIPMENT POTENTIALLY AFFECTED	ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE
	NITOR AND CHANGE Ant'd)	AREA (OB-FZ-10A)				
<u>3</u>)		in the Monitor and Change Area (OB-FZ I cause a spurious isolation of valves V-			w logic circuitry of the	"A" Isolation
	IF No other deca	y heat removal system is available,				
	THEN Override the is	solation signal by placing the individual v	alve control switches to the po	sition desired.		
4)	SF-1-20 may trip and	will have to be run with its control switcl	h in the "Bypass" position.			
5)	Makeup to the Isolatio 63 and open V-9-2099	n Condenser may have to be provided 3 & V-11-49).	by a Fire diesel pump and val	ve line-up should be done IAW the	e 307 procedure (clos	se V-11-41 &
6)	IF Instrument Air	is lost,				
THEN V-2-90 in the Condensate Transfer Building should be closed promptly to prevent the CST from draining to the hotwell. Approximately 10.1 ft in the CST may be required for reactor vessel makeup during cooldown to cold shutdown. Makeup to the CST as necessary from Demineralized Water (procedure 320.1), High Purity (procedure 351.2), or the Fire Protection system (as last resort, close V-9-11, open V-9-9 and open V-11-247).						

FIRE ZONE	EQUIPMENT POTENTIALLY AFFECTED	ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE
MONITOR AND CHANGE AREA (OB-FZ-10A) (cont'd)	CORE SPRAY SYSTEM I "A" Core Spray Booster Pump Pwr. Ckt (NZ03A)	None	NA	308	NA
	Parallel Valve Power and Control Ckt (V-20-15)	Local Manual	RB 51' El. NW	308	NA
	System I Booster Pump Discharge Press Ind. (PT-RV41A)	Local Gage (PI-40C)	RB 51' EI. NW	308	NA

FIRE ZONE	EQUIPMENT POTENTIALLY AFFECTED	ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE
MONITOR AND CHANGE AREA (OB–FZ–10A) (cont'd)	"B" ISOLATION CONDENSER AC Steam Isol. Valve Control Ckt (V-14-32) DC Steam Isol. Valve Control Ckt (V-14-33) DC Cond Return Isol. Vlv Control Ckt (V-14-35) AC Cond Return Isol. Vlv Control Ckt (V-14-37) Shell Makeup Vlv Control Ckt (V- 11-34) Shell Level Indication (LI-IG-6B)	RSP RSP RSP RSP RSP RSP	"B" 480V Swgr. Rm "B" 480V Swgr. Rm	307, 346 307, 346 307, 346 307, 346 307, 346 307, 346	NA NA NA NA NA
	EMRV'S "A" EMRV Control Ckt "B" EMRV Control Ckt "C" EMRV Control Ckt "D" EMRV Control Ckt	EMRV "A" Disable Swt EMRV "B" Disable Swt EMRV "C" Disable Swt EMRV "D" Disable Swt Temporary EMRV Control & Indication EMRV "E" Disable Swt Temporary EMRV Control & Indication	Rear CR Pnl 1F/2F Rear CR Pnl 1F/2F Rear CR Pnl 1F/2F Rear CR Pnl 1F/2F NA Rear CR Pnl 1F/2F NA	301 301 301 301 Repair Procs. 301 Repair Procs.	NA NA NA NA 2400-APR-3411.01 2400-APR-3411.02 2400-APR-3411.04 2400-APR-3411.03 2400-APR-3411.03

FIRE ZONE	EQUIPMENT POTENTIALLY AFFECTED	ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE
MONITOR AND CHANGE AREA	RX VESSEL LVL/PRESSURE ADS Control Ckts	None	NA	308	NA
(OB-FZ-10A) (cont'd)	Fuel Zone Channel "A"	Fuel Zn. Channel "C"	CR Pnl 5F/6F or RSP ("B" 480V Rm)	410 or 346	NA
	Fuel Zone Channel "B"	Fuel Zn. Channel "D"	CR Pnl 5F/6F or RSP ("B" 480V Rm)	410 or 346	NA
	GEMAC Wide Range Level Indication (LI-IA13)	Install Local Gage (LI-626-1007)	RK01 (RB 75' EL. East)	Repair Procedure	2400-APR- 3665.01

FIRE ZONE	EQUIPMENT POTENTIALLY AFFECTED	ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE
MONITOR AND CHANGE AREA (OB-FZ10A) (cont'd)	CONTAINMENT INSTR SYS Drywell Press Ind. (PI-IP07) RBCCW/SERV WTR SYSTEM	Drywell Press Ind (PI-IP12)	CR Pnl 1F/2F	312	NA
(001104)	RBCCW Disch Hdr. Press Ind. (PI-IA18) Shutdown Cooling Flow	Local Gages (PI-50, 51)	RB 51' EL. East on Pump Disch. Piping	309.2	NA
	Control Valve (V-5-106) Service Wtr Hdr Press	Local Manual Local Gage	SDC Room	305, 309.2	NA
	Ind. (PT-6) <u>CONTAINMENT SPRAY SYS</u> Sys I Drywell Spray	(PI-29) Local Manual	Intake Structure RB 51' EL. East	322	NA
	Isolation Valve Control Ckt (V-21-11)			510	
	System I Flow Ind. (FI-IP03A)	None	NA	310	NA
	System II Flow Ind. (FI-IP03B) VENTILATION SYSTEM	None	NA	310	NA
	"A/B" Battery Room Exhaust Fan Power and Control Ckt (EF1-20)	RSP	"B" 480V Swgr. Room	331, 346	NA
	"B" 480V Swgr. Rm Supp. Fan Power and Control Ckt (SF1-21)	RSP	"B" 480V Swgr. Room	331, 346	NA
	"B" 480V Swgr. Rm Exhst Fan Power and Control Ckt (EF1-21)	RSP	"B" 480V Swgr. Room	331, 346	NA

FIRE ZONE	EQUIPMENT POTENTIALLY AFFECTED	ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE
MONITOR AND CHANGE AREA (OB-FZ-10A)	ELECTRICAL DISTR. SYS. 125 VAC DC Control Pwr to USS 1B2 from DC "B"	125V DC Control Pwr from DC "A"	480V USS 1B2	340.1	NA
(cont'd)	Power Feeder to "A/B" Batt Static Charger	None	NA	340.1	NA
	120VAC Power to RSP from Static Inverter (ALT) 125VDC Power to RSP from DC Pnl	120VAC Power to RSP From PnI IP-4 (NORM)	"B" 480V Swgr. Room	346	NA
	"D" Remote Shutdown Pnl	None	NA	346	NA
	RSP Trouble Alarm (9XF-1-F)	Local Indications on RSP	"B" 480V Swgr. Room	346	NA
	SHUTDOWN COOLING SYS A, B, C Loop Suction Valves (V-17-1, 2, 3)	Local Manual	SDC Room	305	NA
	A, B, C Loop Disch. Valves (V-17-55,56, 57)	Local Manua	SDC Room	305	NA
	SHUTDOWN COOLING SYS. V-17-19 & V-17-54	Panel 3F Test Plugs	Control Room Panel 3F	305	NA

FIRE	EZONE	EQUIPMENT POTENTIALLY AFFECTED	ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE
ΜΟΝΙΤΟ	R AND CHA	NGE AREA (OB-FZ-10A) (cont'd)				
Additiona	al Manual Ac	tions Required:				
(1)	<u>IF</u> B	battery charger is not available,				
		14-34 can be cycled for short term operation Condenser with V-14-34 left open c		then V-14-36 will have to be utilize	d for long term opera	ation of the
(2)	Oper Oper Thro	necessary to use the CRD bypass line du n V-15-237 ttle V-15-30 for desired flow on FI-225-2 e V-15-52	e to the loss of instrument air by	performing the following:		
(3).	Recharge	V-11-36 Accumulator per Procedure 307 a	as required (accumulator is size	d for approximately 5 strokes).		
(4)	in the FAN	y Control Room ventilation may need to be I ONLY mode and may have to position its er 331.1 Procedure.				
(4)		res may prevent operation of Shutdown C -17-19 & V-17-54 cannot be opened from		and V-17-54 from the Main Contro	l Room.	
	<u>THEN</u> : O	perate test plugs in Panel 3F per procedu	re 305, section 9.0.			
(5)	<u>IF</u>	USS 1B2 is not energized,				
	<u>THEN</u>	Open USS 1B2M breaker and remove c operation if necessary). Note that this c (local manual operation if necessary). If closing the breaker.	ross-tie is required to get anothe	er SDC pump (B or C) and RBCCV	V pump (if needed) ir	n service
(6)	<u>IF</u>	Ventilation is tripped in the B 480V Room	m			
	<u>THEN</u>	It has to be restored to support SDC by D06) MCC 1B21 breakers and start EF- ventilation IAW Procedure 331.				
(7)	<u>IF</u> THEN	V-5-106 has to be opened manually, Open its supply breaker at MCC 1B21A	. prior to opening V-5-106.			

FIRE ZONE	EQUIPMENT POTENTIALLY AFFECTED	ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE
CHEM LAB, PASS ROOM, INSTR. SHOP (OB-FZ-10B)	<u>SHUTDOWN COOLING SYS</u> A, B, C Loop Suct. Isolation Valves (V-17-1, 2, 3)	Local Manual	SDC Room	305	NA
	A, B, C Loop Disch. Isolation Valves (V-17-55, 56, 57)	Local Manual	SDC Room	305	NA
	ELECTRICAL DISTR SYSTEM 1B2M Control Circuit 120 VAC Power to RSP From Static Inverter (ALT) 125VDC Power to RSP	Local Manual 120VAC Power to RSP from Pnl IP-4 (NORM)	"B" 480V Swgr. Room "B" 480V Swgr. Room	338 346	NA NA
	From DC Panel "D" 125VDC Control Power to USS 1B2 from DC "B" Power to "A/B"	None 125VDC Control Pwr From DC "A"	NA 480V USS 1B2	346 340.1	NA NA
	Batt Static Charger	None	NA	340.1	NA

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FII	RE ZONE	EQUIPMENT POTENTIALLY AFFECTED	ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE
CHEM LA ROOM, II (OB-FZ-1 (cont'd)	NSTR. SH)P				
Referenc	<u>es</u> :					
	11-41-040 11-41-042	(Hot Shutdown Path #2 for OB-FZ-10 (Cold Shutdown Path #2 for OB-FZ-1				
Manual A	ction Requ	ired:				
(1)		eactor pressure decreasing to 310 psig, open lose' fuses, provided these pumps are not rec			C at 480V USS 1B2,	and
(2)		o the Isolation Condenser may have to be pro e (close V-11-41 & 63 and open V-9-2099 & V		nd valve line-up should be done i	accordance with the	e 307
(3)		y Control Room ventilation may need to be in Y mode, provided vent dampers are manually		'B' CRHVAC is not available. 'A'	CRHVAC may be av	ailable in the
(4)	<u>IF</u> Ins	trument Air is lost,				
	<u>THEN</u>	V-2-90 in the Condensate Transfer Building in the CST may be required for reactor vess Demineralized Water (procedure 320.1), Hig 9 and open V-11-247).	el makeup during cooldown to	cold shutdown. Makeup to the C	ST as necessary from	ı
(5)	<u>IF</u>	USS 1B2 is not energized,				
	<u>THEN</u>	 Close USS 1B2M breaker and restore the for USS 1B2 breakers may be required due to the Battery charger to the B battery (static Ventilation to the B 480V Room (EF-1-ventilation IAW Procedure 331. SDC pump (B or C) for cold shutdown. RBCCW pump (if needed) 	he potential loss of DC control charger from MCC 1B21 or M -21 & SF-1-21 from MCC 1B2	power. IG Set from VMCC 1B2)		

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FIRE ZONE	EQUIPMENT POTENTIALLY AFFECTED	ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE
MAIN TRANSFORMER AND CONDENSATE TRANSFER PAD	CONDENSATE TRANSFER SYS Condensate Transfer Pmp 1-1 Motor and Control Ckt	None	NA	316.1	NA
(MT–FA–12)	Condensate Transfer Pmp 1-2 Motor and Control Ckt Condensate Storage Tank Level Indication LT-35	LSP-1B32 Local Gage (LI-424-993)	Chlor. Bldg. Cond. Stg. Tank	346 316.1	NA NA
	ELECTRICAL DISTR SYS 480V Power to MCC1B32	None	NA	338	NA

References:

GU 3E-911-41-041	(Hot Shutdown Path #3 for MT-FA-12)
GU 3E-911-41-042	(Cold Shutdown Path #1 for MT-FA-12)

Manual Action Required:

(1) IF Instrument Air is lost,

> THEN V-2-90 in the Condensate Transfer Building should be closed promptly to prevent the CST from draining to the hotwell or if V-2-90 is unavailable, then close V-2-54, 55 & 56 (Condenser Bay) and V-2-230, 231 & 232 (Feedpump Room) as depicted in ABN-37-5. Approximately 10.1 ft in the CST may be required for reactor vessel makeup during cool down to cold shutdown. Makeup to the CST as necessary from Demineralized Water (procedure 320.1), High Purity (procedure 351.2), or the Fire Protection system (as last resort, close V-9-11, open V-9-9 and open V-11-247).

FIRE ZONE	FIRE ZONE EQUIPMENT POTENTIALLY AFFECTED		LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE
INTAKE AREA (CW–FA–14)	SERVICE WATER SYSTEM Service Water Pump 1-1 Service Water Pump 1-2 Service Water Hdr Press Indication (PT-6)	None LSP-1B3 Local Gage (PI-30)	NA Intake structure Intake Structure	322 322, 346 322	NA NA NA
	EMERGENCY SERV WTR SYS All ESW Pumps Pwr and Control Ckts (52 A, B, C, D)	Temporary Power to An ESW Pump from 4160V Swgr 1D	NA	Repair Procedure	2400-APR- 3531.01
	ELECTRICAL DISTR SYS USS 1A3 USS 1B3 480V MCC 1B32	None None None	NA NA NA	338 338 338	NA NA NA
	VENTILATION SYSTEM Control Room HVAC System "B"	Control Room HVAC System "A"	Control Room	331.1	NA

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FIRE	ZONE	EQUIPMENT POTENTIALLY AFFECTED	ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE
INTAKE / (CW-FA-	AREA -14) (conťď)					
Referenc	<u>es</u> :					
	11-41-040 11-41-043	(Hot Shutdown Path #1 for CW-FA (Cold Shutdown Path #3 for CW-F				
0	This 'Cold S condition (Co he matrix.	hutdown' Path utilizes 'Alternate Decay He ore Spray, Containment Spray in Torus Co	eat Removal' per procedure 2000 poling, and EMRV's). It may be i	0-OPS-3024.27, Section 4.4 to app necessary to perform repairs on af	proach the Cold Shut fected equipment as	down identified in
Manual A	ction Requi	red:				
(1)		Y Control Room ventilation may need to be Y mode, provided vent dampers are manu		f 'B' CRHVAC is not available. 'A'	CRHVAC may be av	ailable in the
(2)	Makeup to 307.	the Isolation Condensers may have to be	e provided by a Fire Diesel pump	; valve lineup should be performed	l in accordance with	Procedure
(3)	<u>IF</u>	Instrument Air is lost,				
	<u>THEN</u>	V-2-90 in the Condensate Transfer Buildin in the CST may be required for reactor ver Demineralized Water (procedure 320.1), V-9-9 and open V-11-247).	essel makeup during cooldown to	o cold shutdown. Makeup to the C:	ST as necessary fror	n
(4)	The Circu	lating Water Pump control and power cabl	es run through this area.			
	<u>IF</u> :	The S1A or S1B breakers spuriously trip	open,			
	<u>THEN</u> :	Manually open the Circ Water Pump breat then manually reclose incoming breaker s	kers on the bus (i.e. breakers A S1A or S1B, as applicable.	6 and A7 on 4160V bus 1A or B5	and B7 on 4160V bu	is 1B),

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#1 EDG VAULT (DG-FA-15) All #1 EDG Control Ckts SHUTDOWN COOLING SYS. None NA 341 NA References: SUTTOWN COOLING SYS. Panel 3F Test Plugs Control Room Panel 3F 305 NA References: GU 3E-911-41-040 GU 3E-911-41-042 (Hot Shutdown Path #1 for DG-FA-15) GU 3E-911-41-042 (Hot Shutdown Path #1 for DG-FA-15) Manual Action Required: (1) IE Instrument Air is lost, THEN V-2-90 in the Condensate Transfer Building should be closed promptly to prevent the CST from draining to the hotwell. Approximately 19.5 ft in the CST may be required for isolation condenser shell and reactor vessel makeup during cooldown to cold shutdown. Makeup to the CST as necessary from Demineralized Water (procedure 320.1), High Purity (procedure 351.2), or the Fire Protection system (as last resort, close V-9-11, open V-9-9 and open V-11-247). (2) Cable failures may prevent operation of Shutdown Cooling Isolation Valves V-17-19 and V-17-54 from the Main Control Room. IF: V-17-19 & V-17-54 cannot be opened from Control Room Panel 11F THEN: Operate test plugs in Panel 3F per procedure 305, section 9.0. Section 9.0.	FIF	RE ZONE	EQUIPMENT POTENTIALLY AFFECTED	ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE			
SHUTDOWN COOLING SYS. Panel 3F Test Plugs Control Room Panel 3F 305 NA References: GU 3E-911-41-040 (Hot Shutdown Path #1 for DG-FA-15) GU 3E-911-41-042 (Cold Shutdown Path #1 for DG-FA-15) GU 3E-911-41-042 (Cold Shutdown Path #1 for DG-FA-15) GU 3E-911-41-042 (Cold Shutdown Path #1 for DG-FA-15) Manual Action Required: (1) IE Instrument Air is lost, THEN V-2-90 in the Condensate Transfer Building should be closed promptly to prevent the CST from draining to the hotwell. Approximately 19.5 ft in the CST may be required for isolation condenser shell and reactor vessel makeup during cooldown to cold shutdown. Makeup to the CST as necessary from Demineralized Water (procedure 320.1), High Purity (procedure 351.2), or the Fire Protection system (as last resort, close V-9-11, open V-9-9 and open V-11-247). (2) Cable failures may prevent operation of Shutdown Cooling Isolation Valves V-17-19 and V-17-54 from the Main Control Room. IE: V-17-19 & V-17-54 cannot be opened from Control Room Panel 11F			All #1 EDG Control Ckts	None	NA	341	NA			
GU 3E-911-41-040 (Hot Shutdown Path #1 for DG-FA-15) GU 3E-911-41-042 (Cold Shutdown Path #1 for DG-FA-15) Manual Action Required: (1) IF IF Instrument Air is lost, THEN V-2-90 in the Condensate Transfer Building should be closed promptly to prevent the CST from draining to the hotwell. Approximately 19.5 ft in the CST may be required for isolation condenser shell and reactor vessel makeup during cooldown to cold shutdown. Makeup to the CST as necessary from Demineralized Water (procedure 320.1), High Purity (procedure 351.2), or the Fire Protection system (as last resort, close V-9-11, open V-9-9 and open V-11-247). (2) Cable failures may prevent operation of Shutdown Cooling Isolation Valves V-17-19 and V-17-54 from the Main Control Room. IF: V-17-19 & V-17-54 cannot be opened from Control Room Panel 11F	(DC	G–FA–15)		Panel 3F Test Plugs	Control Room Panel 3F	305	NA			
 IF Instrument Air is lost, <u>THEN</u> V-2-90 in the Condensate Transfer Building should be closed promptly to prevent the CST from draining to the hotwell. Approximately 19.5 ft in the CST may be required for isolation condenser shell and reactor vessel makeup during cooldown to cold shutdown. Makeup to the CST as necessary from Demineralized Water (procedure 320.1), High Purity (procedure 351.2), or the Fire Protection system (as last resort, close V-9-11, open V-9-9 and open V-11-247). (2) Cable failures may prevent operation of Shutdown Cooling Isolation Valves V-17-19 and V-17-54 from the Main Control Room. <u>IF</u>: V-17-19 & V-17-54 cannot be opened from Control Room Panel 11F 	GU 3E-91	GU 3E-911-41-040 (Hot Shutdown Path #1 for DG-FA-15)								
 in the CST may be required for isolation condenser shell and reactor vessel makeup during cooldown to cold shutdown. Makeup to the CST as necessary from Demineralized Water (procedure 320.1), High Purity (procedure 351.2), or the Fire Protection system (as last resort, close V-9-11, open V-9-9 and open V-11-247). (2) Cable failures may prevent operation of Shutdown Cooling Isolation Valves V-17-19 and V-17-54 from the Main Control Room. <u>IF</u>: V-17-19 & V-17-54 cannot be opened from Control Room Panel 11F 		•								
IF: V-17-19 & V-17-54 cannot be opened from Control Room Panel 11F		<u>THEN</u>	in the CST may be required for isolation con as necessary from Demineralized Water (pro	n the CST may be required for isolation condenser shell and reactor vessel makeup during cooldown to cold shutdown. Makeup to the CST as necessary from Demineralized Water (procedure 320.1), High Purity (procedure 351.2), or the Fire Protection system (as last resort, close						
	(2)	Cable fail	ilures may prevent operation of Shutdown Cooling Isolation Valves V-17-19 and V-17-54 from the Main Control Room.							
THEN: Operate test plugs in Panel 3F per procedure 305, section 9.0.		<u>IF</u> :	V-17-19 & V-17-54 cannot be opened from Control Room Panel 11F							
		THEN:	Operate test plugs in Panel 3F per procedure 305, section 9.0.							

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FIRE ZONE	EQUIPMENT POTENTIALLY AFFECTED	ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE
#2 EDG VAULT (DG–FA–17)	ELECTRICAL DISTRIBUTION #2 EDG Control Ckts.	None	NA	341	NA
	SHUTDOWN COOLING SYS A, B, C Loop Suction Isolation Valves (V-17-1, 2, 3)	Local Manual	SDC Room	305	NA
	A, B, C Loop Disch. Isolation Valves (V-17-55, 56, 57)	Local Manual	SDC Room	305	NA
	RBCCW SYSTEM Shutdown Cooling HX Outlet Flow Control Valve (V-5-106)	Local Manual	SDC Room	305, 309.2	NA

FII	RE ZONE	EQUIPMENT POTENTIALLY AFFECTED							
#2 EDG \ (DG–FA–	/AULT -17) (cont'd)								
	<u>es</u> : 11-41-041 11-41-042	(Hot Shutdown Path #4 for DG-FA-1 (Cold Shutdown Path #2 for DG-FA-							
Manual A 1)		ed: y Control Room ventilation may need to be i NLY mode, provided vent dampers are mar		f 'B' CRHVAC is not available. 'A	' CRHVAC may be a	vailable in			
2)	<u>IF</u>	Instrument Air is lost,							
	<u>THEN</u>	V-2-90 in the Condensate Transfer Buildin ft in the CST may be required for reactor v Demineralized Water (procedure 320.1), H V-9-9 and open V-11-247).	essel makeup during cooldow	n to cold shutdown. Makeup to th	e CST as necessary	from			
3)	<u>IE</u>	USS 1B2 is not energized,							
	<u>THEN</u>	Open USS 1B2M breaker and remove clos operation if necessary). Note that this cross manual operation if necessary). In addition then confirm closed EF-1-21 (unit E06) and ventilation IAW Procedure 331.	stie is required to get another , ventilation will have to be re	SDC pump (B or C) and RBCCW stored to the B 480V Room by co	/ pump (if needed) in nfirming MCC 1B21 i	service (local s energized and			
4)	<u>IF</u>	V-5-106 has to be manually opened,							
	THEN	Open its supply breaker on MCC 1B21A ar	nd then manually operate V-5-	106.					

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FIRE ZONE	EQUIPMENT POTENTIALLY AFFECTED	ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE			
EDG FUEL OIL STORAGE TANK (FS-FA-16)	Both EDG Fuel Oil Supplies from 14,000 Gal. Storage Tank	Bypass Line from 75,000 Gal. Storage Tank	Aux Boiler House, EDG Vaults	341	NA			
<u>References</u> : GU 3E-911-41-040 GU 3E-911-41-042	(Hot Shutdown Path #1 for FS-FA-1 (Cold Shutdown Path #1 for FS-FA-	6) 16)						
Manual Action Required: (1) There are no additional manual actions required for a fire in this area.								

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FIRE ZONE	EQUIPM POTENTIALLY		ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE
AUX BOILER HOUSE (AB-FA-13)	Non	e	NA	NA	NA	NA
FIRE DIESEL PUMP HOUSE (FW-FA-18) OLD RAD WASTE BLDG. (OR-FA-19)	References: GU 3E-911-41-040 GU 3E-911-41-042		itdown Path #1) iutdown Path #1)			
NEW RAD WASTE BLDG. (NR-FA-20) AOG BLDG. (OG-FA-21)	Manual Action Req (1) <u>IF</u>	uired: Instrument Air is	s lost,			
NEW WAREHOUSE (NW-FA-23) MAINT. BLDG. (MB-FA-24)	THEN	hotwell. Approx makeup during (procedure 320	kimately 19.5 ft in the CST may cooldown to cold shutdown. N	hould be closed promptly to preve y be required for isolation conden lakeup to the CST as necessary fi 1.2), or the Fire Protection system	ser shell and reactor rom Demineralized V	vessel /ater
REDUNDANT FIRE PUMP HOUSE (PH-FA-25)						
SITE EMERGENCY BLDG. (EB-FA-28)						
LOW LEVEL RAD WASTE STGE. FAC (LL-FA-29)						

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EQUIPMENT POTENTIALLY AFFECTED	ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE				
None	NA	NA	NA	NA				
References: GU 3E-911-41-040 (Hot Shutdown Path #1) GU 3E-911-41-042 (Cold Shutdown Path #1)								
(1) <u>IF</u> Instrument Air is lost,								
THEN V-2-90 in the Condensate Transfer Building should be closed promptly to prevent the CST from draining to the hotwell. Approximately 19.5 ft in the CST may be required for isolation condenser shell and reactor vessel makeup during cooldown to cold shutdown. Makeup to the CST as necessary from Demineralized Water (procedure 320.1), High Purity (procedure 351.2), or the Fire Protection system (as last resort, close V-9-11, open V-9-9 and open V-11-247).								
	POTENTIALLY AFFECTED None Hot Shutdown Path #1) Cold Shutdown Path #1) Cold Shutdown Path #1) nt Air is lost, n the Condensate Transfer Building ST may be required for isolation col sary from Demineralized Water (pi	POTENTIALLY AFFECTED CONTROL/INDICATION None NA None NA Hot Shutdown Path #1) None Cold Shutdown Path #1) None Int Air is lost, Intercondensate Transfer Building should be closed promptly to ST may be required for isolation condenser shell and reactor vess asary from Demineralized Water (procedure 320.1), High Purity (procedure	POTENTIALLY AFFECTED CONTROL/INDICATION CONTROL/INDICATION None NA NA None NA NA Hot Shutdown Path #1) Solution Solution Loid Shutdown Path #1) Solution Solution In the Condensate Transfer Building should be closed promptly to prevent the CST from draining to ST may be required for isolation condenser shell and reactor vessel makeup during cooldown to col Stary for Demineralized Water (procedure 320.1), High Purity (procedure 351.2), or the Fire Protect	POTENTIALLY AFFECTED CONTROL/INDICATION CONTROL/INDICATION PROCEDURE(S) None NA NA NA NA None NA NA NA NA Automatic and the state of the				

Procedure ABN-29 Rev. 9

	FIRE ZONI	E EQUIPMENT POTENTIALLY AFFECTED		ALTERNATE CONTROL/INDICATION	LOCATION OF ALTERNATE CONTROL/INDICATION	APPLICABLE PROCEDURE(S)	REPAIR DOCUMENT REFERENCE			
)B Roof, TE a, Outside)		None	NA	NA	NA	NA			
Referenc	ces:			· · · · · · · · · · · · · · · · · · ·						
	11-41-040 11-41-042		ot Shutdown Path #1 or Path #2 d old Shutdown Path #1 or Path #2c							
Manual A	Action Requ	uired:								
(1)	<u>IF</u>	Instrumer	nt Air is lost,		· .					
	<u>THEN</u>	in the CS as necess	the Condensate Transfer Building T may be required for isolation cor sary from Demineralized Water (pr pen V-9-9 and open V-11-247).	ndenser shell and reactor vess	el makeup during cooldown to col	d shutdown. Makeup	to the CST			
(2)	<u>IF</u> T <u>HEN</u>		oom ventilation has to be shutdow ble ventilation per procedure 331.		of ventilation are affected for a fire	e on OB Roof,				
(3)	<u>IF</u> <u>THEN</u>	B 480v Room ventilation is affected or AB Battery Room ventilation is affected, use HSP # 2 and CSP #2								
(4)	<u>IF</u> <u>THEN</u>	A 480V Room ventilation is affected, use HSP #1 and CSP #1								
(5)	<u>IF</u> <u>THEN</u>	The fire is at the Condensate Storage Tank (CST), use HSP #3 (GU 3E-911-41-041) and CSP #3 (GU 3E-911-41-043)								
(6)	<u>IF</u>	V-5-106	V-5-106 has to be manually opened,							
	<u>THEN</u>	Open its	supply breaker on MCC 1B21A a	nd then manually operate V-5	-106.					

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OYSTER CREEK GENERATING STATION PROCEDURE

Number **ABN-29**

Title

PLANT FIRE

Revision No.

9

ATTACHMENT ABN-29-2

DETERMINING OPEN RECIRCULATION LOOP ISOLATION VALVES

WHEN one (1) open recirculation loop has been determined by this attachment,

THEN Tag open the breakers for the recirculation loop suction and discharge valves associated with the open recirculation loop

Determine one (1) open recirculation loop (discharge valve and its associated suction valve both open) per the following steps. Recirculation loops may be checked in any order.

- 1.0 **Recirculation Loop A**
 - V-37-10, A Recirculation Loop Discharge valve in MCC 1A21A, Unit A04 1.1 (ref. GE 157B6350 Sh 327)
 - 1.1.1 Open the breaker for the A Recirculation Loop Discharge valve, V-37-10 on MCC 1A21A.

1

1.1.2 Remove the control power fuse for A Recirculation Loop Discharge valve, V-37-10.

Removed By:

Verified By:

- 1.1.3 Lift the following leads for the V-37-10 closed limit switch from the terminal strip in Unit A04 (cable 22-376).
 - TB-1

Removed By:

Verified By:

• TB-60

Removed By:

Verified By:

	Ar	An Exelon Co	en.s.		K GENERATING ROCEDURE	Number ABN-29
Title			PL	ANT FIRE	······································	Revision No. 9
				ATTACHMENT A	BN-29-2 (continued)	
		DET	ERMININ	G OPEN RECIRCUI	ATION LOOP ISOL	ATION VALVES
		1.1.4		hat there is <u>no</u> conti hich indicates V-37-		7-10 closed limit switch lift
			•			
			Not Op	en		
		1.1.5	<u>IF</u>	V-37-10 is open,		
			THEN	check that the A Re	circulation Loop Suct	ion valve, V-37-9 is open.
		1.1.6	<u>IF</u>	V-37-10 is not open	3	
			THEN	check a different rec	circulation loop for op	en suction and discharge v
	1.2			lation Loop Suction 0 Sh 326)	valve in MCC 1A21A	<u>, Unit A01</u>
		1.2.1		e breaker for the A on MCC 1A21A.	Recirculation Loop S	uction valve,/
		1.2.2		e the control power f valve, V-37-9.	fuse for A Recirculation	on Loop
			Remove	ed By:		_
			Verified	Ву:	· · · · · · · · · · · · · · · · · · ·	_
		1.2.3		following leads for th ninal strip in Unit A0	ne V-37-9 closed limit 1(cable 22-373).	switch from
			• TB-1			
			Rem	oved By:		_
			Verif	ied By:		_
			• TB-6	0		
			Rem	oved By:		_
			Verif	ied By:		

AmerGe	OYSTER CREEK GENERATII	NG Number ABN-29
Title	PLANT FIRE	Revision No. 9
	ATTACHMENT ABN-29-2 (conti	nued)
DETER	MINING OPEN RECIRCULATION LOOP	
	Check for <u>no</u> continuity through the V-37-9 indicates V-37-9 is open.	elosed limit switch lifted leads
	Open	
	Not Open	
1.2.5	<u>F</u> V-37-9 is open,	
	THEN no further action is required in this	attachment.
1.2.6	F V-37-9 is not open,	
	THEN check a different recirculation loop	for open suction and discharge

	An	nerGe	en . mpany	OYSTER CREEK GENERATING STATION PROCEDURE	Number ABN-29	
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			····			
				ATTACHMENT ABN-29-2 (continued)		
		DETE	ERMININ	IG OPEN RECIRCULATION LOOP ISOL	ATION VALVES	
2.0	Recirc	culation Lo	oop B			
	2.1			culation Loop Discharge valve in MCC 1E 50 Sh 347)	321A, Unit A03	
~		2.1.1	Open t	he breaker for the B Recirculation Loop D V-37-21 on MCC 1B21A.	vischarge	
		2.1.2		ve the control power fuse for B Recirculati arge valve, V-37-21.	on Loop	
			Remov	/ed By:	_	
			Verifie	d By:	_	
		2.1.3		following leads for the V-37-21 closed lin minal strip in Unit A03 (cable 22-384).	nit switch from	
			• TB-	1		
			Rer	noved By:	_	
			Ver	ified By:		
			• TB-	60		
			Rer	noved By:	_	
			Ver	ified By:	_	
		2.1.4		for <u>no</u> continuity through the V-37-21 clos lifted leads which indicates V-37-21 is op		
			Open			
			Not Op	oen		
		2.1.5	<u>IF</u>	V-37-21 is open,		
			<u>THEN</u>	check that the B Recirculation Loop Suc V-37-20 is open.	tion valve,	
		2.1.6	IF	V-37-21 is not open,		
			THEN	Check a different recirculation loop for o	pen suction	

<u>A</u>	merGe An Exelon Cor		OYSTER CREEK GENERATING STATION PROCEDURE	Number ABN-29	
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			ATTACHMENT ABN-29-2 (continued)		
	DETE	<u>-RMINII</u>	NG OPEN RECIRCULATION LOOP ISOL	ATION VALVES	
2.2			rculation Loop Suction valve in MCC 1B21 50 Sh 346)	<u>A, Unit A01</u>	
	2.2.1		the breaker for the B Recirculation Loop S 20 on MCC 1B21A.	uction Valve,/	
	2.2.2		ve the control power fuse for B Recirculation n valve, V-37-20.	on Loop	
		Remo	ved By:	-	
		Verifie	d By:	-	
	2.2.3		e following leads for the V-37-20 closed lim minal strip in Unit A01 (cable 22-382).	it switch from	
		• TB-	-1		
		Rei	moved By:	-	
		Vei	ified By:	-	
		• TB-	-60		
		Re	moved By:	-	
		Vei	ified By:		
	2.2.4		for <u>no</u> continuity through the V-37-20 clos lifted leads which indicates V-37-20 is ope		
		Open			
		Not O	pen		
	2.2.5	<u>IF</u>	V-37-20 is open,		
		<u>THEN</u>	no further action is required in this attach	ment.	
	2.2.6	<u>IF</u>	V-37-20 is not open,		
		<u>THEN</u>	check a different recirculation loop for op and discharge valves.	en suction	

	An	nerG An Excelon Co	en "	OYSTER CREEK GENERATING STATION PROCEDURE	Number ABN-29
Title			Pl	ANT FIRE	Revision No. 9
				ATTACHMENT ABN-29-2 (continued)	
		DCT			
				IG OPEN RECIRCULATION LOOP ISOL	ATION VALVES
3.0		culation L			
	3.1			culation Loop Discharge valve in MCC 1A 50 Sh 328)	<u>21A, Unit B01</u>
		3.1.1		he breaker for the C Recirculation Loop D V-37-32 on MCC 1A21A.)ischarge//
		3.1.2		ve the control power fuse for C Recirculati rge valve, V-37-32.	on Loop
			Remov	ved By:	_
			Verifie	d By:	_
		3.1.3		following leads for the V-37-32 closed lim minal strip in Unit B01 (cable 22-377).	nit switch from
			• TB-	1	
			Rer	noved By:	_
			Ver	ified By:	_
			• TB-	60	
			Rer	noved By:	-
			Ver	ified By:	_
		3.1.4		for <u>no</u> continuity through the V-37-32 clos lifted leads which indicates V-37-32 is op	
			Open		
			Not Op	en	
		3.1.5	<u>IF</u>	V-37-32 is open,	
			<u>THEN</u>	check that the C Recirculation Loop Such V-37-31 is open.	tion valve,
		3.1.6	<u>IF</u>	V-37-32 is not open,	
			<u>THEN</u>	check a different recirculation loop for op and discharge valves.	en suction

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OYSTER CREEK GENERATING STATION PROCEDURE

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ATTACHMENT ABN-29-2 (continued)

DETERMINING OPEN RECIRCULATION LOOP ISOLATION VALVES

- 3.2 <u>V-37-31, C Recirculation Loop Suction valve in MCC 1A21A, Unit A02</u> (ref. GE 157B6350 Sh 326)
 - 3.2.1 Open the breaker for the C Recirculation Loop Suction Valve, V-37-31 on MCC 1A21A.
 - 3.2.2 Remove the control power fuse for C Recirculation Loop Suction valve, V-37-31.

Removed By:

Verified By:

- 3.2.3 Lift the following leads for the V-37-31 closed limit switch from the terminal strip in Unit A02 (cable 22-374).
 - TB-1

Removed	By:	
---------	-----	--

Verified By:

• TB-60

Removed By:

Verified By:

3.2.4 Check for <u>no</u> continuity through the V-37-31 closed limit switch lifted leads which indicates V-37-31 is open.

Open ____

Not	Oper	n
1100	Opci	•

3.2.5 <u>IF</u> V-37-31 is open,

THEN no further action is required in this attachment.

- 3.2.6 <u>IF</u> V-37-31 is not open,
 - <u>THEN</u> check a different recirculation loop for open suction and discharge valves.

	An	nerG An Exelon Co	en ompany	OYSTER CREEK GENERATING STATION PROCEDURE	Number ABN-29	
Title	_		Р	LANT FIRE	Revision No. 9	
				ATTACHMENT ABN-29-2 (continued)		
4.0	Decir	_		NG OPEN RECIRCULATION LOOP ISOLA	ATION VALVES	
4.0		Recirculation Loop D				
	4.1 <u>V-37-43, D Recirculation Loop Discharge valve in MCC 1B21A, Unit A04</u> (ref. GE 157B6350 Sh 347)					
	4.1.1 Open the breaker for the D Recirculation Loop Discharge Valve, V-37-43 on MCC 1B21A.					
		on Loop				
			Remo	ved By:	-	
			Verifie	ed By:	-	
	4.1.3 Lift the following leads for the V-37-43 closed limit switch from the terminal strip in Unit A04 (cable 22-385).					
			Re	moved By:	-	
			Ve	rified By:	-	
			• TB	-60		
			Re	moved By:	-	
			Ve	rified By:	-	
		4.1.4	ed limit en.			
			Open			
			Not O	pen		
		4.1.5	<u>IF</u>	V-37-43 is open,		
			<u>THEN</u>	check that the D Recirculation Loop Suct V-37-42 is open.	ion valve,	
		4.1.6	IE	V-37-43 is not open,		

	merGen	OYSTER CREEK GENERATING STATION PROCEDURE	Number ABN-29
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4.2	V-37-42, D Recir (ref. GE 157B63 4.2.1 Open V-37-4 4.2.2 Remov Suctio Remov Verifie	the breaker for the D Recirculation Loop S 2 on MCC 1B21A. ve the control power fuse for D Recirculation n valve, V-37-42. ved By:	A, Unit A02 uction Valve,/ on Loop
	• TB- Rei Ver • TB- Rei Ver 4.2.4 Check	moved By:	- - ed limit
	4.2.5 <u>IF</u> THEN	V-37-42 is open, no further action is required in this attach	ment.
	4.2.6 <u>IF</u>	V-37-42 is not open, check a different recirculation loop for ope and discharge valves.	