

Facility: IP3 Scenario No.: 1 Op-Test No.: _____
 Examiners: _____ Operators: _____

Initial Conditions: 100%; preinsert auto MSIV failure and stuck open A MSIV

Turnover: Reduce power to 90% for stop and control valves test to be performed next shift

Event No.	Mal. No.	Event Type*	Event Description
1		N	reduce power
2	TUR10A	I	1 st stage pressure xmitter fails low
3	SGN5A	C	SG Tube leak
4	CVC-8 100%	I	VCT level fails high
5		R	Reduce power due to tube leak
6	MSS9A	MT	Steamline rupture outside containment
7	MSS13A,B,D opt 1	C	MSIVs fail to auto close
8	MSS13C opt 0	C	A MSIV fails to close by any means
9	SGN5 A & C	MT	Maximum SGTR in two Sgs (trip+2 min)

* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor

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Raise power to 100%

Form ES-D-2

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Op-Test No.: _____ Scenario No.: 1 Event No.: 6-9

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Event Description: Steamline break outside containment induces SGTR in 31 and 33 SG's;
MSIVs fail to auto close; 33 MSIV fails to close by any means

Time	Position	Applicant's Actions or Behavior
50	Crew	Recognize indications SI
	CRS/Crew	Implement E-0
		- verify reactor trip
		-verify turbine trip
		-verify power to 480 VAC busses
		-verify SI required (yes, continue E-0)
		-check AFW flow > 365 gpm
	BOP	perform RO-1 procedure start 32 SI Pp and 33 ESW Pp
	CRS/RO	continue E-0 verifications and diagnostics
		- determine steam break exists, auto MS line isolation failure
		- manually initiate MSIVs closure
		- note 33 SG still fails to close..
	CRS	Transition to E-2 (from E-0 step 15)
	CRS/RO	- dispatch NPO for local close of 33 MSIV
		- dispatch NPO to isolate TTABFP steam from 33 SG - MS-32
		-check secondary radiation, recognize SGTRs
	CRS	Transition to E-3 (attached)
		- determine if RCPs should be stopped
		- identify ruptured SGs by level, samples, or rad survey
		- isolate flow from ruptured Sgs (33 unisolable)
		- maintain 31,32,34 SG level > 9%
		- check PORVs avail, block valves X

Op-Test No.: _____ Scenario No.: _____ Event No.: _____

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Event Description:

Time	Position	Applicant's Actions or Behavior
		-verify E-2 performed on 33 SG
		-reset SI, CI phase A
		-establish IA to containment
		-verify RHR Pps should NOT be stopped
		-verify 33 SG press < 400 psig
	CRS	Transition to ECA-3.1 at E-3 step 12
	CRS/Crew	- reset SI
		- reset CI phase A
		- establish IA to containment
		- verify 480 vac busses energized, MCCs and lighting reset
		- verify containment spraynot running
		- maintain 31 SG level > 9%; DO NOT feed 33 SG.
		- stop RHR Pps if RCS press > 325 psig
		- evaluate plant status - initiate ECA-3.1 att 1
		- verify adequate RCP seal cooling
		-establish maximum charging from RWST
		-establish cooldown via ASDVs on all intact SGs
		Terminate when cooldown commenced

SPARE

Appendix D

Scenario Outline

Form ES-D-1

Facility: IP3 Scenario No.: 2 Op-Test No.: _____

Examiners: _____ Operators: _____

Initial Conditions: 100% power. RWST blocked suction preinsert

Turnover: Reduce power to 90% for stop and control valves test

Event No.	Malf. No.	Event Type*	Event Description
1		R	Increase power
2		N	Perform RHR COL in CR
3	NIS-7D	I	PRNI fails high
4		C	32 SW Pp trip
5	EPS-2A	C/I	Loss of an instrument bus/ATWT (auto only)
6	RCS-1A	MT	LB LOCA 100% (on trip)
7		C/MT	Blocked RWST outlet, no SI flow (suction valve X)

* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor

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Respond to SW pump trip

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Op-Test No.: _____ Scenario No.: 2 Event No.: 6,7

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Event Description:

Large Break LOCA on trip or during shutdown; no injection due to blocked RWST suction

Time	Position	Applicant's Actions or Behavior
	Crew	Recognize indications SI
	CRS/Crew	Implement E-0
		- verify reactor trip
		-verify turbine trip
		-verify power to 480 VAC busses
		-verify SI required (yes, continue E-0)
		-check AFW flow > 365 gpm
	BOP	perform RO-1 procedure start 32 SI Pp and 33 ESW Pp
	CRS/RO	continue E-0 verifications and diagnostics
		- recognize loss of injection flow
	CRS	Transition to E-1 from E-0 step 17
		-commence monitoring CSFSTs
		- determine if RCPs should be stopped - NO if HPSI not running
		-verify no faulted or ruptured SG
		-reset safeguards
		- continue actions of E-1 (attached) until CETs require transition

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CETs exceed 700 deg due to no injection

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Facility: _____ IP3 _____ Scenario No.: _____ 3 _____ Op-Test No.: _____
 Examiners: _____ Operators: _____

Initial Conditions: _100% reduce power for stop and control valves surv

Turnover: ____TTAFW Pp to be tagged O/S for maint

Event No.	Malf. No.	Event Type*	Event Description
1		N	Tag the TTAFW Pp for maint
2		R	Reduce power
3	SGN-1B	I	SG level channel fail Hi 120%
4	CVC-11	C	NRHX leak to CCW
5	ATS-3	C	MBFP speed control oscillations
6	CVC-8	I	VCT level failure low
7	ATS-4A,B	MT	Sequential loss of main feed pumps
	RPS 1A-D EPS-1	MT	ATWT, loss of offsite power on trip
	CFW1A,C	MT	Loss of all feed

* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor

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Event Description:

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Op-Test No.: _____ Scenario No.: 3 Event No.: _____ Page of

Event Description: Loss of all feed/ATWT/feed and bleed. Get back turbine AFW Pp, recover from feed and bleed.

Time	Position	Applicant's Actions or Behavior
50	RO	Recognize loss of all feed. ATWT
	CRS	Implement E-0
	CRS/RO	-verify reactor trip - accomplished by de-energizing 2A & 6A
		- verify turbine trip
		Loss of Offsite power
		- ensure safeguards busses load from EDGs
		- determine no SI required
		- determine AFW < 660 gpm
	CRS/crew	Transition to FR-H.1 (attached)
		- verify heat sink required
		-close FRVs for inop motor driven AFW Pps
		- attempt to restore TTAFW Pp
		-stop RCPs
		-attempt to restore offsite power
		- when 3 lowest WR levels < 25% establish feed and bleed
		RETURN TTAFW Pp when feed and bleed established
		- continue FR-H1 to step 21
		- referentially feed one SG max rate to > 9%. 100 gpm to others
		- steps 24-26 shut one PORV. then second
		- terminate at examiner discretion

Facility: _____ IP3 _____	Scenario No.: _____ 4 _____	Op-Test No.: _____
Examiners: _____	Operators: _____	
_____	_____	
_____	_____	
Initial Conditions: _____ 40%; 32 Recirc Pp tagged		
Turnover: 32 recirc Pp c/t for maint. Place 2 nd MFP I/S, raise power		

Event No.	Malf. No.	Event Type*	Event Description
1		N	Place second MFP I/S
2		R	Raise power
3	CFW-13E	C	MFRV ramp failure open
4	PRS-5	I	Pressurizer pressure channel fails high
5	EPS-5	C	Loss of bus 5 /A.
6	RCS-12B	C	RCP #1 seal failure
7	RCS-1	MT	LB LOCA
8		C	Loss of all recirc due to RHR sump suction valve fail X. (due to depowered bus)

* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor

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Place second MBFP I/S and raise power

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Event Description: MFRV fails open

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Event Description: Controlling pressurizer pressure channel fails low

[illegible]

Op-Test No.: _____ Scenario No.: 4 Event No.: 5

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Event Description: B RCP #1 seal degrades, can be fixed

[illegible]

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[illegible]

Op-Test No.: _____ Scenario No.: 4 Event No.: 7,8

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Event Description: Large break LOCA with loss of recirc due to loss of vital bus and RHR suction valve inside containment fails

Time	Position	Applicant's Actions or Behavior
60	Crew	Recognize indications SI
	CRS/Crew	Implement E-0
		- verify reactor trip
		-verify turbine trip
		-verify power to 480 VAC busses
		-verify SI required (yes, continue E-0)
		-check AFW flow > 365 gpm
	BOP	perform RO-1 procedure start 32 SI Pp and 33 ESW Pp
		-verify FW isolation
		-verify SI flow
		-verify CS needed
		-establish charging flow
		-verify RCPs stopped
	CRS/RO	continue E-0 verifications and diagnostics
		-determine LOCA
	CRS	transition to E-1 from E-0 step 17
	Crew	- verify equipment running, monitor plant
	CRS	transition to ES-1.3 at RWST < 11.5 feet
	RO/BOP	report trip of remaining recirc Pp
	CRS	direct external recirc
	RO/BOP	report suction valve failure
	CRS	transition to ECA-1.1
	RO	initiate makeup to VCT, RWST; chg from VCT
		- terminate scenario

Facility: _____ IP3 _____ Scenario No.: _____ 5 _____ Op-Test No.: _____ Examiners: _____ Operators: _____ _____ _____			
Initial Conditions: 100% 33 EDG preinsert failure Turnover: 31 chg Pp tagged for maintenance, 33 I/S. Reduce power for turbine stop and control valves test.			
Event No.	Malf. No.	Event Type*	Event Description
1		R	Reduce power
2	RCS-20A	I	Loop Tc fail High
3	CVC-17	C	Letdown Backpressure controller fail X
4		N	Place excess LD in service
5	CVC-5B,C	C	Loss chg Pp, standby won't start - fixable
6	RCS-7B	C	RCP vibrs # 32
7	RCS-3 EPS-1 SIS 1A,B	MT	RCP Locked Rotor/ATWT/SI auto fail/LOP
8	PRS-3D	MT	PORV 456 lift, fails open
9	DSG 2A DSG 1B DSG 1C	MT	Sequential los of EDG's, 60 sec apart

* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor

Op-Test No.: _____ Scenario No.: 5 Event No.: 1,2

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Event Description:

Loop 1 Tc fails Hi

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Loss of letdown due to failure X of backpressure regulator. Place excess letdown I/S

[illegible]

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Event Description:

[illegible]

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Op-Test No.: _____ Scenario No.: <u>5</u> Event No.: <u>6</u> Page <u> </u> of <u> </u>		
Event Description: RCP locked rotor, ATWT, Rx		
Time	Position	Applicant's Actions or Behavior
50	Crew	Recognize RCP trip, ATWT, stuck PORV (no block valve power)
	CRS/RO	Implement E-0
		- verify reactor trip, accomplished by deenergizing 2A & 6A
		- verify turbine trip (LOPA on turbine trip)
		- verify vital AC busses energized
	BOP	Report loss of EDG's (first EDG no start - disables PORV block vlv)
	CRS?crew	Transition to ECA 0.0
		- isolate RCS
		- shut MSIVs
		- verify AFW
		- attempt to restore power, dispatch NPOs to diesels
		- open CR and ABFW Pp rom doors, CR inst pnl doors
		Must be done within 30 min of loss of all AC
		- place equipment in PTL
		- determine if SG's should be depressurized (yes)
		Restored one EDG (and block valve) - before depress
		- start equipment
		- shut block valve
	CRS	Transition to ECA-0.2
		- terminate when block valve is shut or ECA-0.2 transition,
		whichever is later.