JAMES A. FITZPATRICK NUCLEAR POWER PLANT
NRC INITIAL LICENSE EXAMINATION SCENARIO
27 MAY 2003

TITLE: LOI-03-01 SCENARIO 1, STUCK ROD/RWCU LEAK EOP-5

SCENARIO NUMBER: NEW

PATH:

	SIGNATURE
VALIDATION	
TRAINING	
OPERATIONS	

RECORD OF CHANGES

DATE	SOURCE OF CHANGE	BRIEF DESCRIPTION OF CHANGE	INITIATOR	REVIEWED

A. **TITLE:** LOI-03-01 SCENARIO 1, STUCK ROD/RWCU LEAK/EOP-5

B. **SCENARIO SETUP:**

1. Initial Protected IC-137

2. Special Instructions:
   a. Reactor Startup in progress at approximately 8% CTP.
   b. OP-65 complete through step D.21.1.b. Ready to place reactor mode switch into RUN (Mode 1).
   c. FWLC in automatic master control on either reactor feed pump.
   d. Confirm Reactor Analyst pull sequence agrees with simulator modeling.
   e. * denotes critical task(s)

3. Preset Conditions:
   a. RD10:42-27. Third rod in RWM Group 28 stuck
   b. ED24:B on Trigger E-6. Loss of MCC-153 triggered on 12MOV-15 green lamp on.
   c. RD13:22:27. Control rod 22-27 fails to scram. RMCS insertion still available.
   d. TC04:A-D. On event trigger 9. All BPV's fail closed after opening
   e. AD07:C and E. Two ADS SRV's fail to open.
   f. CU02:A on event trigger 5. RWCU Pump "A" trip.
   g. CU07 on event trigger 5 at 50%, 10 minute ramp.

4. Consumable Forms and Procedures:

   - AOP-24, STUCK CONTROL ROD, Rev. 7
   - AOP-1 Reactor Scram, Rev. 39

5. Modified Shift Turnover Sheet

   See Attachment 1

C. **SCENARIO SUMMARY:**

Commitment Document:
The scenario begins with the plant at ~8% CTP with a reactor startup in progress. The crew will continue the startup per OP-65 by placing the reactor mode switch in RUN, starting a second condensate pump and continuing rod withdrawal with guidance to proceed to 25% CTP with rods. After an appreciable reactivity manipulation with rods, an in-sequence rod will be found stuck requiring entry to AOP-24. All procedural actions will fail resulting in a Technical Specification review for an inoperable rod. The "A" RWCU pump will trip resulting in diagnostic actions. Shortly after, a steam leak will be detected in the Reactor Building vicinity of the Reactor Water Cleanup pumps. Automatic or manual isolation of RWCU will result in a loss of MCC-152 as 12 MOV-15 begins to stroke. This renders the leak unisolable. The leak severity will slowly grow requiring entry into EOP-5. EOP-5 actions to manually scram the reactor will find a control rod that failed to scram. This coupled with the previously stuck control rod will require entry into EOP-3 until operator action to insert the second rod with RMCS. Leak severity will eventually force an Emergency Depressurization when reactor building temperatures exceed 2 maximum safe values. Timely action to insert the above control rod and thus exit EOP-3 to EOP-2 will provide the opportunity for the crew to anticipate an Emergency Depressurization and open all Bypass Valves. Upon opening, the Bypass Valves will subsequently fail closed forcing the Emergency Depressurization. Upon Emergency Depressurization, 2 ADS SRV's will fail to open forcing additional SRV's to be operated. The scenario will terminate upon Emergency Depressurization.

Shift Turnover ATTACHMENT 1
A reactor startup is in progress. The plant is at approximately 8% CTP ready to place the Reactor Mode Switch into RUN (Mode 1). OP-65 is complete through Step D.21.1.b. ST-5D has just been completed to satisfy D.21.1.i and D.22.3 and is satisfactory. Chemistry has reported that all chemistry parameters are well within specification for Power Operation. I-131 Dose Equivalent is <.2uci/gm. Reactor Engineer guidance is to continue reactor startup with rods until 25%CTP. You are currently in RWM Step 26.

EVENT NO.	EVENT SEQUENCE
1.	**Preparations for and placing Reactor Mode Switch to RUN (Normal)**
2.	**Start of second Condensate Pump (Normal)**
3.	**Continue startup with Rod Withdrawal (Reactivity Manipulation)**
4.	**Stuck Control Rod (AOP-24) (Component and Tech Specs)**
5.	**RWCU pump trip and steam leak into Rx Bldg. (Component)**
6.	**Loss of MCC-152 upon 12MOV-15 closure**
7.	**Non-isolable RB steam leak/EOP-5/Manual Scram/Emergency Depressurization (Major)**
8.	**One rod fails to scram (Component)**
9.	**BPV's fail closed after opening (Component)**
10	**2 ADS SRV's fail to open (Component)**

D. **TERMINATION CUES:**

1. Emergency Depressurization in progress with 7 SRV's

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS/EVALUATION
Simulator in RUN Recorder and Alarm Power ON Simulator Checklist Complete			
Provide Modified Turnover			
After the shift turnover, allow no more than five minutes for panel walkdown	All	Walkdown the control panels	SAT / UNSAT / NA
	CRS	Conduct turnover brief. Order continuation of OP-65 startup	SAT / UNSAT / NA
	SNO/BOP	Close Main Steam Line Drain Valves (29MOV-101A-D, 77, 78, 79 and 74)	SAT / UNSAT / NA
	SNO/RO	Place reactor mode switch in RUN Place IRM/APRM recorder select switches in APRM/RBM Select and Withdraw all 8 IRM's per OP-16 E.9	SAT / UNSAT / NA
	SNO/BOP	Start second condensate pump per OP-3 D.7	SAT / UNSAT / NA
	SNO/BOP	Report to CRS that the plant is ready to continue power ascent.	SAT / UNSAT / NA
	CRS	Order in-sequence rod withdrawal	SAT / UNSAT / NA
	SNO/RO	Selects and withdraws control rods in sequence.	SAT / UNSAT / NA
	SNO/RO	Reports that control rod 42-27 will not move at normal drive pressures. May adjust up to 400 psid per OP-25 Section E.	SAT / UNSAT / NA
	ANY/ALL	Recognize symptom of AOP-24	SAT / UNSAT / NA
	CRS	Order performance of AOP-24	SAT / UNSAT / NA
Role Play: After several minutes report lineup as expected.	SNO/BOP	Confirm 09-5 panel indications and HCU lineup are normal per OP-25	SAT / UNSAT / NA
	SNO	Incrementally raise drive D/P at 50 psig increments and attempt rod movement after each adjustment.	SAT / UNSAT / NA

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS/EVALUATION
	SNO	Report to CRS that rod will not move with maximum D/P applied.	SAT / UNSAT / NA
	SNO	Restore CRD hydraulic parameters to normal values	SAT / UNSAT / NA
	CRS	Consult Technical Specification 3.1.3	SAT / UNSAT / NA
	CRS	Declare control rod 42-27 inoperable and enter condition A.	SAT / UNSAT / NA
	CRS	Brief crew on inoperability and required actions	SAT / UNSAT / NA
TRG! E5	ANY/ALL	Recognize and report RWCU pump "A" trip.	SAT / UNSAT / NA
	CRS	Order response per ARP's and local investigations.	SAT / UNSAT / NA
	SNO	Dispatch NPO to RWCU panel.	SAT / UNSAT / NA
Role Play: After several minutes report a steam leak in overhead area of RWCU pumps on RB 300 foot elevation.	SNO	Relay report to CRS	SAT / UNSAT / NA
	CRS	Order actions to trip and isolate RWCU (OP-28, Section G.2)	SAT / UNSAT / NA
	SNO/BOP	Turn off RWCU pumps Close 12 MOV-15, 18, and 69	SAT / UNSAT / NA
	ANY/ALL	Recognize bus loss coincident with valve closures	SAT / UNSAT / NA
	CRS	Order investigation of bus loss.	
	SNO/BOP	Determine/report loss of MCC-152 Determine/report failure of 12MOV-15 to close	SAT / UNSAT / NA
CU07 severity may need to be slowly adjusted to drive the rest of the scenario actions by tracking temperatures on SCT	CRS	Recognize RWCU steam leak is un-isolable.	SAT / UNSAT / NA
	ANY/ALL	Recognize EOP-5 entry condition on RB Area Temperature/Radiation	SAT / UNSAT / NA
	CRS	Enter EOP-5	SAT / UNSAT / NA

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS/EVALUATION
	CRS	Execute RB/T, RB/R and RB/L concurrently prioritizing RB/T	SAT / UNSAT / NA
	CRS	Order maximizing Reactor Building area cooling	SAT / UNSAT / NA
	SNO/BOP	Start all remaining Crescent Area Unit Coolers.	
	CRS	Before any RB area Temperature exceeds Max Safe, Order Manual Scram and enter EOP-2	SAT / UNSAT / NA *** CRITICAL TASK**
	SNO/RO	Insert Manual Scram and perform AOP-1 Immediate Actions • Depress Manual Scram pushbuttons • Reactor Mode Switch to Shutdown • Fully Insert all SRM's and IRM's • Verify SDIV Vent and Drain valves closed • Verify APRM's downscale • Verify at least 1 Circ Water pump running	SAT / UNSAT / NA *** CRITICAL TASK**
	CRS	Order SNO/BOP to level control with Feed/Condensate at 177-222.5 inches.	SAT / UNSAT / NA
	SNO/BOP	Trend level performance and manipulate GEMAC Master/Individual controllers, RFP discharge valves and RFP trip as necessary to control level.	SAT / UNSAT / NA
	SNO/RO	Recognize and report that 1 rod failed to scram (22-27) and that another (42-27) was previously stuck and also did not insert	SAT / UNSAT / NA
	CRS	Enter EOP-3 based on 2 rods not inserted to or beyond 02	SAT / UNSAT / NA
	CRS	Order SNO to Pressure Control with EHC in automatic.	SAT / UNSAT / NA
	SNO	Confirm EHC controlling pressure in automatic	SAT / UNSAT / NA
	CRS	Order SNO/RO to initiate ARI	SAT / UNSAT / NA
	SNO/BOP	Initiate ARI and confirm all 5 valves energized.	SAT / UNSAT / NA
	CRS	Order SNO/RO to insert control rods per EP-3	SAT / UNSAT / NA

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS/EVALUATION
If rod 22-27 is attempted, it will insert. If rod 42-27 is attempted, it will not To reset ARI: RFI-RP20 to test	SNO/RO	Determine EP-3 success path is RMCS • Reset ARI by dispatching NPO to Relay Room • Bypass RWM • SDIV Hi Level Trip Switch to BYPASS • Scram Reset Switch to Group 2&3 then 1& 4. • Establish drive D/P. • Select control rod • Drive in with Rod Movement or Emergency In Control Switch.	SAT / UNSAT / NA
	CRS	May order O/R ADS and T/P Core Spray	SAT / UNSAT / NA
	SNO/BOP	If ordered: • Both ADS O/R switches to O/R • Both 14MOV-11 valve keylocks to bypass • Close 14MOV-11 A and B	SAT / UNSAT / NA
	SNO/RO	Report all rods in except 1	SAT / UNSAT / NA
	CRS	Exit EOP-3 and enter EOP-2	SAT / UNSAT / NA
	CRS	Recognize that 2 RB area temperatures above max safe requires Emergency Depressurization.	SAT / UNSAT / NA
	CRS	Order pressure control on SRV's at a 200 psig band.	SAT / UNSAT / NA
If ED is anticipated, TRG! E9 As BPV's are opening	CRS	If 2 max safe RB area temperatures are exceeded, announce that an emergency depressurization is required.	SAT / UNSAT / NA
	CRS	Enter EOP-2 ED leg and order opening of 7 ADS valves.	SAT / UNSAT / NA *** CRITICAL TASK**
	SNO	Open ADS valves A-H (excluding F)	SAT / UNSAT / NA *** CRITICAL TASK**
	SNO	Report that ADS valves C and E failed to open	SAT / UNSAT / NA *** CRITICAL TASK**

INSTRUCTOR ACTIVITY	POSITION CRS	OPERATOR ACTIONS/STANDARD Order additional SRV's opened to a total of 7 valves	COMMENTS/EVALUATION SAT / UNSAT / NA *** CRITICAL TASK**
	SNO	Opens 2 additional SRV's and reports 7 valves open	SAT / UNSAT / NA *** CRITICAL TASK**
		TERMINATE THE SCENARIO	

Shift Turnover
A reactor startup is in progress. The plant is at approximately 8% CTP ready to place the Reactor Mode Switch into RUN (Mode 1). OP-65 is complete through Step D.21.1.b. ST-5D has just been completed to satisfy D.21.1.i and D.22.3 and is satisfactory. Chemistry has reported that all chemistry parameters are well within specification for Power Operation. I-131 Dose Equivalent is <.2uci/gm. Reactor Engineer guidance is to continue reactor startup with rods until 25%CTP. You are currently in RWM Step 26.

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Nuclear Northeast

James A. FitzPatrick Nuclear Power Plant

OPERATIONS TRAINING PROGRAMS
JOB PERFORMANCE MEASURE

SRO NEW TASK TITLE: LOI-03-01 NRC EXAM E-PLAN DECLARATION FOR SCENARIO 1

APPL. TO JPM NUMBER

REV: 0 DATE: 5/25/03 NRC K/A SYSTEM NUMBER: 2.4.41 4.1

JAF TASK NUMBER: _____ JAF QUAL STANDARD NUMBER: _____

ESTIMATED COMPLETION TIME: 10 Minutes

SUBMITTED: _____ OPERATION REVIEW: _____

APPROVED: _____

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JOB PERFORMANCE MEASURE
RECORD AND CHECKLIST

SRO | NEW | TASK TITLE: LOI-03-01 NRC EXAM E-PLAN DECLARATION FOR SCENARIO 1

APPL. TO | JPM NUMBER

Current Update: 5/25/03 (Date) | By: RWD (Int.)

Outstanding Items:

_____ Technical Review
_____ Questions and Answers
_____ Procedural Change Required
_____ Additional Information
_____ Validation
_____ None

Comments:

Previous Revision Dates:

JOB PERFORMANCE MEASURE
REQUIRED TASK INFORMATION

SRO | NEW | TASK TITLE: LOI-03-01 NRC EXAM E-PLAN DECLARATION FOR SCENARIO 1

APPL. TO | JPM NUMBER

I. SAFETY CONSIDERATIONS

A. Ensure proper safety equipment and safety procedures are observed.

II. REFERENCES

A. JAF Emergency Plan Implementing Procedures IAP-2, Rev. 23

III. TOOLS AND EQUIPMENT

A. None

IV. SET UP REQUIREMENTS

A. This JPM is completed as followup after the scenario progress has been frozen.

V. EVALUATOR NOTES

A. If performing JPM in the plant, inform the candidate that the conditions of each step need only be properly identified and not actually performed.

B. The candidate should, at a minimum, identify the change in equipment status light indication when equipment operation is simulated.

VI. TASK CONDITIONS

A.

B.

*** - CRITICAL STEP**

S/RO/NLO NEW
TASK TITLE: LOI-03-01 NRC EXAM E-PLAN DECLARATION FOR SCENARIO 1

VII. INITIATING CUE

Based on the events that have just occurred determine if the current circumstances warrant classification in accordance with the JAF Emergency Plan and, if so, determine the appropriate classification level.

	STEP	STANDARD	EVALUATION / COMMENT
1.	Obtain/Approach IAP-2, Attachment 2.1	Candidate obtains the procedure or approaches the posted attachment.	SAT / UNSAT
2.	Recognize the applicable conditions	Candidate recognizes that the scenario events included a non isolable RWCU leak into the Reactor Building. Candidate may also recognize that an Emergency Depressurization was required.	SAT / UNSAT
3.	Confirm the conditions	Candidate reviews IAP-2 Technical Bases for expected declarations.	SAT / UNSAT
*4.	Classify the event	Candidate selects SAE-3.4.1 Any steam line or RWCU isolation failure resulting in a release pathway outside primary containment, Table 3.1 Table 3.1 MSLs HPCI RCIC If scenario progression resulted in a required Emergency Depressurization, candidate may alternatively select SAE-4.1.1 Primary system is discharging outside PC AND RB area temperatures are > maximum safe operating levels in two or more areas, EOP-5	SAT / UNSAT
EVALUATOR: Terminate the task at this point.			

JAMES A. FITZPATRICK NUCLEAR POWER PLANT
NRC INITIAL LICENSE EXAMINATION SCENARIO
27 MAY 2003

TITLE: LOI-03-01 SCENARIO 2, TURBINE VIBRATION/LOSS OF VACUUM/ATWS

SCENARIO NUMBER: NEW

PATH:

	SIGNATURE
VALIDATION	
TRAINING	
OPERATIONS	

RECORD OF CHANGES

DATE	SOURCE OF CHANGE	BRIEF DESCRIPTION OF CHANGE	INITIATOR	REVIEWED

A. **TITLE:** LOI-03-01 SCENARIO 1, STUCK ROD/RWCU LEAK/EOP-5

B. **SCENARIO SETUP:**

1. Initial Protected IC-138

2. Special Instructions:
   a. Plant operating normally at ~95% CTP
   b. Rod Pattern exchange just completed. Returning to 100% CTP.
   c. Confirm Reactor Analyst pull sequence agrees with simulator modeling.
   d. Confirm RAP-7.3.16 guidance is at the 09-5 panel

3. Preset Conditions:
   a. On Trigger 1, RR19:B fail as is.
   b. On Trigger 3, TU04:E at 21% and D at 22% no ramp. (7-9 mils)
   c. On Trigger 3, MC01 at 42% severity over 20 minutes.
   d. Preset RD22:A at 70%
   e. Preset RD01A:A

4. Consumable Forms and Procedures:

   - AOP-66, MAIN TURBINE HIGH VIBRATION, REV. 3
   - AOP-31, LOSS OF CONDENSER VACUUM, REV. 15
   - AOP-41/42, FEEDWATER MALFUNCTION, Rev. 6/10
   - AOP-1 Reactor Scram, Rev. 39

5. Modified Shift Turnover Sheet

   See Attachment 1

C. **SCENARIO SUMMARY:**

Commitment Document:
The crew will take the shift with the plant operating normally at ~95% CTP following a rod pattern exchange. Following Reactor Analyst guidance, the crew will continue a power ascent to 100% CTP using recirculation flow. Shortly into the power ascent, the operators will notice that the non-controlling FWLC level instruments are trending down while the controlling is steady. The crew will diagnose that the FWLC controlling instrument has failed as is causing actual level to trend down slowly. The crew will take manual control, of FWLC, enter AOP-41/42 and determine the cause to be a failed instrument. The crew will then swap FWLC to the alternate instrument input and return to automatic level control. The Control Room Supervisor will consult technical specifications for the failed instrument. The Main Turbine will then lose part of a low pressure blade that will penetrate the low pressure turbine exhaust boot. This will be indicated by a step change in turbine vibration followed by a slow loss of condenser vacuum that will eventually worsen. Turbine vibration will result in entry to AOP-66 but will not be severe enough to require a turbine trip. The condenser vacuum loss will eventually result in AOP-31 entry which will require a power reduction. The vacuum loss will worsen such that power reductions with both recirculation flow and rods will occur. Eventually the AOP-31 manual scram milestone will be met. The manual scram will not be completely successful due to hydraulic blockage in one of the scram discharge volumes. Power will be above 2.5% requiring significant EOP-3 action. As a nuisance, one SDIV vent valve will fail to close. The EP-3 success path will be inserting rods with RMCS and repeated manual scrams. As vacuum continues to trend away, level control will need to transition to HPCI and pressure control augmented with SRV's. The resulting challenge to containment will result in SLC injection if not already started.

Shift Turnover ATTACHMENT 1
The plant is operating normally at ~95% CTP. A rod pattern exchange has just been completed and the reactor analyst guidance is to return to 100% CTP using recirculation flow.

EVENT NO.	EVENT SEQUENCE
1.	**FWLC Controlling Instrument upscale failure (Instrument and Tech Specs)**
2.	**Swap to alternate FWLC Instrument input and return FWLC to automatic.**
3.	**Step change in Turbine Vibration (Component)**
4.	**Slow loss of condenser vacuum (Component)**
5.	**Power reduction with recirculation flow (Reactivity)**
6.	**Power reduction with rod insertion (Reactivity)**
7.	**ATWS/EOP-3 (Major)**
8.	**SDIV Vent and Drain valve fails to close (Component)**

D. **TERMINATION CUES:**

1. Control rods being/inserted using EP-3
2. Level control stable at 0-222.5 inches
3. Pressure control stable
4. SLC injecting

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS/EVALUATION
Simulator in RUN Recorder and Alarm Power ON Simulator Checklist Complete			
Provide Modified Turnover			
After the shift turnover, allow no more than five minutes for panel walkdown	All	Walkdown the control panels	SAT / UNSAT / NA
	CRS	Conduct turnover brief. Order continuation of power ascent to 100% using recirculation flow	SAT / UNSAT / NA
TRG! E1	SNO/BOP	Alternatively adjust recirculation MG set speeds in 1-3% increments.	SAT / UNSAT / NA
	SNO/RO	Monitor power pressure and level at 09-5 during ascent.	SAT / UNSAT / NA
	ANY/ALL	Recognize off normal RPV water level condition	SAT / UNSAT / NA
	SNO	Select FWLC to manual. Stabilize and restore RPV level to green band.	SAT / UNSAT / NA
	CRS	Order entry into AOP-41/42	SAT / UNSAT / NA
	SNO/BOP	Perform actions of AOP-41/42. Determine that controlling "B" instrument is failed which caused an actual low RPV level condition.	SAT / UNSAT / NA
	CRS	Order swap to "A" level transmitter and return FWLC to automatic per OP-2A	SAT / UNSAT / NA
	SNO/BOP	Select OP-2A, section G.30 • Place column select switch to "A" • Return to Automatic FWLC per G.7 • Select Master Controller to MANUAL • Balance individual M/A Stations • Select individual and master controllers to Balance	SAT / UNSAT / NA

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS/EVALUATION
TRG! E3	ANY/ALL	Recognize Main Turbine High Vibration condition.	SAT / UNSAT / NA
	CRS	Order entry into AOP-66	SAT / UNSAT / NA
ROLE PLAY: If requested, report that there is abnormally high noise levels and vibrations on the Main Turbine elevation (300')	SNO	Announce turbine bearings 4 and 5 are alarming at elevated vibration values (7-9 mils)	SAT / UNSAT / NA
ROLE PLAY as Mike Tallents and acknowledge report. State that you are coming in	CRS	Report abnormal vibration to Main Turbine Expert	SAT / UNSAT / NA
	CRS	May order power reduction using recirculation flow at normal rates to attempt to reduce vibration levels.	SAT / UNSAT / NA
	SNO/BOP	If ordered, commence power reduction using recirculation flow. Alternatively reduce each MG set speed in 1-3% increments.	SAT / UNSAT / NA
TRG! E4	ANY/ALL	Recognize and announce worsening trend in condenser vacuum.	SAT / UNSAT / NA
	CRS	Order entry into AOP-31	SAT / UNSAT / NA
Monitor and adjust MC01 as necessary to ensure the remaining scenario actions	SNO/BOP	Commence actions of AOP-31 • Trip Recombiner • Isolate TB Equip Sump Vacuum Drag • Order spare SJAE's in service • Determine source is air in-leakage • Dispatch operators to search for air leak	SAT / UNSAT / NA
	CRS	Set Manual Scram benchmark of 23-25 inches Hg	SAT / UNSAT / NA
	CRS	Order power reduction with recirculation flow to counter vacuum trend. Caution against reducing below 50% core flow.	SAT / UNSAT / NA
	SNO/BOP	Reduce recircualtion flow to ~50% Core Flow.	SAT / UNSAT / NA
	ANY/ALL	Recognize/report that condenser vacuum is still worsening	SAT / UNSAT / NA

INSTRUCTOR ACTIVITY	POSITION CRS	OPERATOR ACTIONS/STANDARD Order insertion of the first cram group.	COMMENTS/EVALUATION SAT / UNSAT / NA
ROLE PLAY: As NPO, report that there is a visible tear in the exhaust boot of LP turbine B.	SNO/RO	Select and fully insert all rods in the first cram group	SAT / UNSAT / NA
Monitor and adjust MC01 as necessary to force manual scram	ANY/ALL	Recognize/report that condenser vacuum is still worsening	
Delete TU04: D and E	CRS	Order Manual Scram	SAT / UNSAT / NA
	SNO/RO	Insert Manual Scram and perform AOP-1 Immediate Actions • Depress Manual Scram pushbuttons • Reactor Mode Switch to Shutdown • Fully Insert all SRM's and IRM's • Verify SDIV Vent and Drain valves closed • Verify APRM's downscale (Will not be) • Verify at least 1 Circ Water pump running	SAT / UNSAT / NA
	CRS	Order SNO/BOP to level control with Feed and Condensate 177-222.5 inches	SAT / UNSAT / NA
	SNO/BOP	Manipulate RFP, GEMAC Controllers and RFP Discharge valves to control RPV level.	SAT / UNSAT / NA
	SNO/RO	Report multiple rods out, APRM's NOT downscale and one SDIV Vent valve failed to close.	SAT / UNSAT / NA *** CRITICAL TASK**
	CRS	Announce EOP-3 entry from EOP-2	SAT / UNSAT / NA *** CRITICAL TASK**

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS/EVALUATION
	CRS	Order SNO/RO to perform the following EOP-3 actions • Initiate ARI • Reduce recirculation flow to minimum • Trip both recirculation pumps • Override ADS • Determine EP-3 success path and insert rods.	SAT / UNSAT / NA *** CRITICAL TASK**
	CRS	Order SNO/BOP to terminate and prevent all injection except SLC, CRD and RCIC per EP-5. New level band is –19 to 110. Injection source will be Feedwater. Caution against rapid injection.	SAT / UNSAT / NA *** CRITICAL TASK**
	SNO/BOP	Perform the following EOP-3/EP-5 level control actions: • Reduce running RFP(s) M/A stations to manual minimum. • Ensure running RFP min flow valve(s) open • Depress HPCI Turbine Trip pushbutton.	SAT / UNSAT / NA *** CRITICAL TASK**
	SNO	• 10MOV-27A/B Auto Control to bypass and close 10MOV-27A/B (May be deferred) • 14MOV-11A/B Auto Actuation to Bypass and close 14MOV-11A/B (may be deferred)	SAT / UNSAT / NA
	CRS	Order SNO to pressure control with EHC in automatic. Band of 900-1000 psig.	SAT / UNSAT / NA
	SNO	Confirm EHC in automatic controlling RPV pressure in band.	SAT / UNSAT / NA
Adjust MC01 to force loss of Bypass Valves	SNO/BOP	Reinject with HPCI by: • Ensure SGT running • Ensure 01-125MOV-13A or B is open • Ensure HPCI flow controller in Manual minimum • Depress turbine trip reset • Verify automatic initiation lineup • Control speed to control injection	SAT / UNSAT / NA

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS/EVALUATION
	SNO/RO	Perform the following EOP-3 actions: • Select ARI Switch to ACT • Adjust both recirculation GEMAC manual controls to minimum speed demand while trending RPV level • Select both drive motor breaker control switches to PTL • Select both ADS override switches to override • Determine EP-3 success path is both RMCS and Manual Scrams	SAT / UNSAT / NA *** CRITICAL TASK**
	CRS	Order control rod insertion with EP-3 success paths	SAT / UNSAT / NA
	SNO/RO	NOTE: SNO/RO should pursue both paths in that RMCS can complete partial insertions while SDIV's are draining to enable Manual scrams.	SAT / UNSAT / NA
To reset ARI, RFI-RP20 to Test	SNO/RO	EP-3 RMCS path actions: • Dispatch NPO to reset ARI and observe solenoids de-energized. (if not already done) • RWM Keylock to Bypass • Raise drive water D/P. Options include shut CRD-56, Start second CRD pump, manually adjust FIC-301 to open AOV-19A(B) • Select and drive rod full in in EP-3 attachment sequence.	SAT / UNSAT / NA *** CRITICAL TASK**
Monitor and adjust MC01 as necessary to force RFP trip and loss of bypass valves	ANY/ALL	Recognize that as condenser vacuum continues to worsen, Pressure control will need to transition to HPCI augmented with SRV's.	SAT / UNSAT / NA
	CRS	If not already done, order SLC injection with either system. SLC injection is required prior to exceeding BIIT.	SAT / UNSAT / NA *** CRITICAL TASK**
	SNO	Select SLC control switch to ordered division and report tank level.	SAT / UNSAT / NA *** CRITICAL TASK**
	CRS	Order transition of RPV pressure control to HPCI and augment with SRV's. Modify band to 800-1000 psig.	SAT / UNSAT / NA

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS/EVALUATION
	SNO	To transition Pressure Control. • Augment HPCI operation with sequential opening of SRV's to maintain 800-1000 psig	SAT / UNSAT / NA
	SNO	Report downward trend in SLC tank level.	SAT / UNSAT / NA
RFI- RP21:A1, A2, B1, and B2 to hang RPS jumpers When the scram is reset, delete malfunction RD22A	SNO/RO	EP-3 Manual Scram path actions • Dispatch NPO to reset ARI and observe solenoids de-energized (if not already done) • Order/hang 09-15/17 auto scram jumpers. • Open CRD-56 if closed. • SDIV Hi Level Trip to Bypass • Rx Scram Reset to Group 2 and 3 then 1 and 4. • When SDIV's are drained insert Manual Scram	SAT / UNSAT / NA * **CRITICAL TASK**
	CRS	When all rods in exit EOP-3 and enter EOP-2	SAT / UNSAT / NA
		TERMINATE THE SCENARIO	

ATTACHMENT 1

Shift Turnover
The plant is operating normally at ~95% CTP. A rod pattern exchange has just been completed and the reactor analyst guidance is to return to 100% CTP using recirculation flow.

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OPERATIONS TRAINING PROGRAMS
JOB PERFORMANCE MEASURE

SRO NEW TASK TITLE: LOI-03-01 NRC EXAM E-PLAN DECLARATION FOR SCENARIO 2

APPL. TO JPM NUMBER

REV: 0 DATE: 5/25/03 NRC K/A SYSTEM NUMBER: 2.4.41 4.1

JAF TASK NUMBER: _____ JAF QUAL STANDARD NUMBER: _____

ESTIMATED COMPLETION TIME: 10 Minutes

SUBMITTED: _____ OPERATION REVIEW: _____

APPROVED: _____

~~~
~~~

JOB PERFORMANCE MEASURE
RECORD AND CHECKLIST

SRO NEW TASK TITLE: LOI-03-01 NRC EXAM E-PLAN DECLARATION FOR SCENARIO 2

APPL. TO JPM NUMBER

Current Update: 5/25/03 By: RWD
Date Int.

Outstanding Items:

_____ Technical Review _____ Additional Information

_____ Questions and Answers _____ Validation

_____ Procedural Change Required _____ None

Comments:

Previous Revision Dates:

JOB PERFORMANCE MEASURE
REQUIRED TASK INFORMATION

SRO NEW TASK TITLE: LOI-03-01 NRC EXAM E-PLAN DECLARATION FOR SCENARIO 2

APPL. TO JPM NUMBER

I. SAFETY CONSIDERATIONS

A. Ensure proper safety equipment and safety procedures are observed.

II. REFERENCES

A. JAF Emergency Plan Implementing Procedures IAP-2, Rev. 23

III. TOOLS AND EQUIPMENT

A. None

IV. SET UP REQUIREMENTS

A. This JPM is completed as followup after the scenario progress has been frozen.

V. EVALUATOR NOTES

A. If performing JPM in the plant, inform the candidate that the conditions of each step need only be properly identified and not actually performed.

B. The candidate should, at a minimum, identify the change in equipment status light indication when equipment operation is simulated.

VI. TASK CONDITIONS

A.

B.

*** - CRITICAL STEP**

S/RO/NLO NEW
TASK TITLE: LOI-03-01 NRC EXAM E-PLAN DECLARATION FOR SCENARIO 2

VII. INITIATING CUE

Based on the events that have just occurred determine if the current circumstances warrant classification in accordance with the JAF Emergency Plan and, if so, determine the appropriate classification level.

	STEP	STANDARD	EVALUATION / COMMENT
1.	Obtain/Approach IAP-2, Attachment 2.1	Candidate obtains the procedure or approaches the posted attachment.	SAT / UNSAT
2.	Recognize the applicable conditions	Candidate recognizes that the scenario events included an ATWS condition with a challenge to primary containment integrity.	SAT / UNSAT
3.	Confirm the conditions	Candidate reviews IAP-2 Technical Bases for expected declarations.	SAT / UNSAT
*4.	Classify the event	Candidate selects SAE-2.2.2 Any RPS setpoint has been exceeded AND Automatic and manual scrams fail to result in a control rod pattern which assures reactor shutdown under all conditions without boron AND Either: Reactor power > 2.5% OR Torus temperature > Boron Injection Initiation Temperature	SAT / UNSAT
EVALUATOR: Terminate the task at this point.			

JAMES A. FITZPATRICK NUCLEAR POWER PLANT
NRC INITIAL LICENSE EXAMINATION SCENARIO
27 MAY 2003

TITLE: LOI-03-01 SCENARIO 3, Combustion in After Condenser, Steam Leak in Drywell, EOP-4

SCENARIO NUMBER: NEW

PATH:

	SIGNATURE
VALIDATION	
TRAINING	
OPERATIONS	

RECORD OF CHANGES

DATE	SOURCE OF CHANGE	BRIEF DESCRIPTION OF CHANGE	INITIATOR	REVIEWED

A. **TITLE:** LOI-03-01 SCENARIO 3, Combustion in After Condenser, Steam Leak in Drywell, EOP-4

B. **SCENARIO SETUP:**

1. Initial Protected IC-139

2. Special Instructions:
   a. Plant operating normally at 100% CTP
   b. Confirm Reactor Analyst pull sequence agrees with simulator modeling.
   c. Confirm Reactor Analyst RAP-7.3.16 guidance is available at 09-5 panel.
   d. Ensure LPRM bypass postings are current to support scenario.
   e. Bypass additional LPRM's as necessary to support Event 2 Tech Spec exercise.
   f. Ensure A and B SW pumps in service. C in standby

3. Preset Conditions:
   a. NM11:6B3613 on Trigger E-2 at 100% severity and 10 minute ramp, LPRM Upscale failure. (LPRM will be assigned to a B division APRM such that upon failure, APRM inop on 2 per level count).
   b. OG04 on Trigger E-3, Combustion in Off-Gas
   c. Annunciator 09-6-1-23 crywolf on Trigger E-3
   d. Recombiner trip on Trigger E-3
   e. RR15:A on Trigger E-6 at 50% severity and 10 minute ramp, Steam Leak in Drywell.
   f. Preset RD13:XX:YY, One rod fail to scram
   g. ED18:X on Fast transfer trigger assigned to Trigger E-7, Loss of 10500 Bus.

4. Consumable Forms and Procedures:

   - AOP-5, Combustion in SJAE After Condenser, Rev. 10
   - AOP-1 Reactor Scram, Rev. 39

5. Modified Shift Turnover Sheet

   See Attachment 1

C. **SCENARIO SUMMARY:**

Commitment Document:
The scenario begins with the plant operating normally at 100% CTP. A repair of the C SW strainer has just been completed and the tags are clear. The shift will swap to the C SW pump in service and B in Standby to facilitate a pressure leak test of the C SW pump strainer. An LPRM will start a slow upscale failure resulting in a single LPRM slowly trending up. If not caught and bypassed, a half scram on APRM upscale will result. The crew will determine the failed LPRM as the cause and bypass the LPRM. The bypass will result in an INOP APRM on the 2 per level count basis. A Tech Spec review will identify a Potential LCO with trip function maintained by the remaining divisional APRM's. A fire in the SJAE After Condenser will require entry to AOP-5. Actions to extinguish the fire will not be successful until Rx power has been reduced with both recirculation flow and control rods. After the fire is out, a steam leak in the drywell will force entry into EOP-2 and 4. On the Manual Scram, a single rod will fail to insert and will subsequently be driven in by normal RMCS. On the fast transfer, the 10500 bus will experience catastrophic failure resulting in a loss of containment cooling capability with the A RHR loop as well as a loss of both A and B RHR pumps. This reduces EOP-4 actions to a single (D) RHR pump in the B loop. A single drywell spray evolution will result in scenario termination.

Shift Turnover ATTACHMENT 1
The plant is operating normally at 100% CTP. Maintenance has just completed a repair to the C SW pump discharge strainer and the tags have been cleared. An NPO is standing by with maintenance to perform a pressure leak check of the strainer. Swap to the C SW pump in service and B in Standby.

EVENT NO.	EVENT SEQUENCE
1.	**Swap in service Service Water pumps (Normal)**
2.	**LPRM Upscale failure/APRM half scram (Instrument and Tech Specs)**
3.	**Combustion in SJAE After Condenser (AOP-5) (Component)**
4.	**AOP-5 directed power reduction with recirculation flow (Reactivity)**
5.	**AOP-5 directed power reduction with Control Rods (Reactivity)**
6.	**Steam leak in the Drywell (Major)**
7.	**Loss of 10500 bus (Component)**

D. **TERMINATION CUES:**

1. Completion of 1 Drywell Spray Evolution

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS/EVALUATION
Simulator in RUN Recorder and Alarm Power ON Simulator Checklist Complete			
Provide Modified Turnover			
After the shift turnover, allow no more than five minutes for panel walkdown	All	Walkdown the control panels	SAT / UNSAT / NA
	CRS	Conduct turnover brief. Order coordination with field to start C SW pump and place B in STBY per OP-42 G.1	SAT / UNSAT / NA
	SNO/BOP	Start C SW pump. Stop B and place in Standby	SAT / UNSAT / NA
TRG! E2	ANY/ALL	Recognize/Report LPRM/APRM upscale trend. Determine failed LPRM is 36-13-B	SAT / UNSAT / NA
	SNO/RO	Report that all other APRM's are stable.	SAT / UNSAT / NA
	CRS	Order bypass of LPRM 36-13-B per OP-16	SAT / UNSAT / NA
	SNO/BOP	Bypass LPRM as follows: • Bypass APRM • Select APRM meter function switches to the LPRM • Place LPRM amplifier card in BY • Place meter function switch in AVERAGE • Select a neighboring control rod at 09-5 to check RBM inputs. • Count APRM total and per level remaining inputs • Report results to CRS	SAT / UNSAT / NA
	CRS	Recognize that APRM is inoperable on 2 per level criteria and consult Tech Specs 3.3.1.1 and TRM 3.3.B.1. Determine that no condition entry is required.	SAT / UNSAT / NA

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS/EVALUATION
TRG! E3 **Cause of recombiner trip is low outlet temperature**	ANY/ALL	Recognize/Report indications of combustion in SJAE after condenser.	SAT / UNSAT / NA
	CRS	Announce entry to AOP-5. Direct SNO/BOP to perform actions of AOP-5	SAT / UNSAT / NA
	SNO/BOP	Perform the following actions: • Dispatch NPO to place additional SJAE's in service. • Report to CRS that power reduction is required until 40% or fire is extinguished.	SAT / UNSAT / NA
	CRS	Brief crew and direct SNO/BOP to reduce power using recirculation flow to 50% core flow or the fire is out. NOTE: CRS judgment on desired power ramp rate.	SAT / UNSAT / NA
	SNO/BOP	Alternatively adjust Recirculation GEMAC controllers in 1-3% increments OR Concurrently reduce both GEMAC's at a rapid rate without causing RPV Hi Water level trip.	SAT / UNSAT / NA
	SNO/RO	Monitor power/pressure/level during downpower.	SAT / UNSAT / NA
	SNO/BOP	Report Core Flow at ~ 50% and combustion still indicated.	SAT / UNSAT / NA
	CRS	Order SNO/RO to insert the first cram group	SAT / UNSAT / NA
	SNO/RO	Select and fully insert all rods in the cram group.	SAT / UNSAT / NA
DELETE OG04	ANY/ALL	Recognize that combustion has extinguished.	SAT / UNSAT / NA
	CRS	Order chemistry to complete a confirmatory hydrogen sample.	SAT / UNSAT / NA
TRG! E6	ANY/ALL	Recognize indications of steam leak in drywell.	SAT / UNSAT / NA
	CRS	Order establishment of a Torus Vent per OP-37 Set a benchmark for a manual scram of 2-2.3 psig drywell pressure.	SAT / UNSAT / NA
	SNO/BOP	Commence actions to establish Torus vent.	SAT / UNSAT / NA

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS/EVALUATION
	ANY/ALL	Recognize/Report manual scram benchmark	SAT / UNSAT / NA
	SNO/RO	Insert Manual Scram and perform AOP-1 Immediate Actions • Depress Manual Scram pushbuttons • Reactor Mode Switch to Shutdown • Fully Insert all SRM's and IRM's • Verify SDIV Vent and Drain valves closed • Verify APRM's downscale • Verify/trip Main Turbine • Verify electrical fast transfer NSS-RSS • Verify at least 1 Circ Water pump running	
	CRS	Order SNO/BOP to level control with Feed/Condensate at 177-222.5 inches.	SAT / UNSAT / NA
	SNO/BOP	Trend level performance and manipulate GEMAC Master/Individual controllers, RFP discharge valves and RFP trip as necessary to control level.	
	SNO/RO	Recognize and report that 1 rod failed to scram and that the 10500 is de-energized with A and C EDG's running	SAT / UNSAT / NA
Role Play: Report as NPO that 10500 bus has heavy damage at the 10514 breaker and heavy smell of burnt insulation.	SNO	Dispatch NPO to assess status of 10500 bus and EDG's	SAT / UNSAT / NA
	CRS	Order SNO to Pressure Control with EHC in automatic.	SAT / UNSAT / NA
	SNO	Confirm EHC controlling pressure in automatic	SAT / UNSAT / NA
	CRS	Order EDG A and C shutdown	SAT / UNSAT / NA
	SNO	Shutdown EDG A and C	SAT / UNSAT / NA
	ANY/ALL	Recognize/Report EOP2/4 entry condition on D/W pressure	SAT / UNSAT / NA
	CRS	Announce entry into EOP-2 and 4	SAT / UNSAT / NA

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS/EVALUATION
	ANY/ALL	Recognize/Report HPCI initiation	SAT / UNSAT / NA
	CRS	Determine HPCI injection not needed and order HPCI tripped	SAT / UNSAT / NA
	SNO	Trip HPCI	SAT / UNSAT / NA
RR15:A severity may need to be adjusted to force scenario milestones	CRS	When torus pressure >2.7 psig order B loop of RHR in torus spray with excess flow to torus cooling.	SAT / UNSAT / NA
	SNO	Startup B loop RHR in Torus Spray. Excess flow to torus cooling while observing current limitation on RHR pump.	SAT / UNSAT / NA
	CRS	Set a torus pressure benchmark of 15 psig. Order terminate and prevent RHR and Core Spray per EP-5	SAT / UNSAT / NA
	SNO/RO	• Keylock override 10MOV-27A/B to bypass • Close 10MOV-27A/B • Keylock override 14MOV-11A/B • Close 14MOV-11A/B • Stop Core Spray pumps A/B	SAT / UNSAT / NA
	CRS	Order RPV cooldown at <100 degrees per hour with caution that drywell steam leak is contributing to cooldown	SAT / UNSAT / NA
	SNO	Trend cooldown and adjust bypass jack and auxiliary steam loads to commence a cooldown at < 100 degrees per hour.	SAT / UNSAT / NA
	SNO	Announce torus pressure 15 psig milestone	SAT / UNSAT / NA
	CRS	Order/confirm drywell cooling fans and recirculation pumps tripped	SAT / UNSAT / NA
	SNO	Trip both recircualtion pumps	SAT / UNSAT / NA
	CRS	Confirm operation in safe region of D/W spray initiation limit.	SAT / UNSAT / NA
	CRS	Order drywell sprays using B RHR. Caution SNO to terminate drywell sprays before drywell pressure drops below 0 psig.	* **CRITICAL TASK**

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS/EVALUATION
	SNO	Places B RHR in drywell spray observing caution for excessive pump amps.	SAT / UNSAT / NA *** CRITICAL TASK**
	ANY/ALL	Trend and report drop in drywell pressure	SAT / UNSAT / NA
		TERMINATE THE SCENARIO	

Shift Turnover
The plant is operating normally at 100% CTP. Maintenance has just completed a repair to the C SW pump discharge strainer and the tags have been cleared. An NPO is standing by with maintenance to perform a pressure leak check of the strainer. Swap to the C SW pump in service and B in Standby.

Entergy
Nuclear Northeast

James A. FitzPatrick Nuclear Power Plant

OPERATIONS TRAINING PROGRAMS
JOB PERFORMANCE MEASURE

SRO NEW TASK TITLE: LOI-03-01 NRC EXAM E-PLAN DECLARATION FOR SCENARIO 3

APPL. TO JPM NUMBER

REV: 0 DATE: 5/25/03 NRC K/A SYSTEM NUMBER: 2.4.41 4.1

JAF TASK NUMBER: _____ JAF QUAL STANDARD NUMBER: _____

ESTIMATED COMPLETION TIME: 10 Minutes

SUBMITTED: _____ OPERATION REVIEW: _____

APPROVED: _____

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JOB PERFORMANCE MEASURE
RECORD AND CHECKLIST

SRO NEW TASK TITLE: LOI-03-01 NRC EXAM E-PLAN DECLARATION FOR SCENARIO 3

APPL. TO JPM NUMBER

Current Update: 5/25/03 By: RWD
Date Int.

Outstanding Items:

_____ Technical Review _____ Additional Information

_____ Questions and Answers _____ Validation

_____ Procedural Change Required _____ None

Comments:

Previous Revision Dates:

JOB PERFORMANCE MEASURE
REQUIRED TASK INFORMATION

SRO | NEW | TASK TITLE: LOI-03-01 NRC EXAM E-PLAN DECLARATION FOR SCENARIO 3

APPL. TO | JPM NUMBER

I. SAFETY CONSIDERATIONS

A. Ensure proper safety equipment and safety procedures are observed.

II. REFERENCES

A. JAF Emergency Plan Implementing Procedures IAP-2, Rev. 23

III. TOOLS AND EQUIPMENT

A. None

IV. SET UP REQUIREMENTS

A. This JPM is completed as followup after the scenario progress has been frozen.

V. EVALUATOR NOTES

A. If performing JPM in the plant, inform the candidate that the conditions of each step need only be properly identified and not actually performed.

B. The candidate should, at a minimum, identify the change in equipment status light indication when equipment operation is simulated.

VI. TASK CONDITIONS

A.

B.

*** - CRITICAL STEP**

S/RO/NLO NEW
TASK TITLE: LOI-03-01 NRC EXAM E-PLAN DECLARATION FOR SCENARIO 3

VII. INITIATING CUE

Based on the events that have just occurred determine if the current circumstances warrant classification in accordance with the JAF Emergency Plan and, if so, determine the appropriate classification level.

	STEP	STANDARD	EVALUATION / COMMENT
1.	Obtain/Approach IAP-2, Attachment 2.1	Candidate obtains the procedure or approaches the posted attachment.	SAT / UNSAT
2.	Recognize the applicable conditions	Candidate recognizes that the scenario events included a steam leak in the drywell challenging primary containment integrity.	SAT / UNSAT
3.	Confirm the conditions	Candidate reviews IAP-2 Technical Bases for expected declarations.	SAT / UNSAT
*4.	Classify the event	Candidate selects ALERT-3.1.1 Primary containment pressure cannot be maintained < 2.7 psig due to coolant leakage	SAT / UNSAT
EVALUATOR: Terminate the task at this point.			

JAMES A. FITZPATRICK NUCLEAR POWER PLANT
NRC INITIAL LICENSE EXAMINATION SCENARIO
27 MAY 2003

TITLE: LOI-03-01 SCENARIO 4, Seismic Event, MSL Break in Turbine Building

SCENARIO NUMBER: NEW

PATH:

	SIGNATURE
VALIDATION	
TRAINING	
OPERATIONS	

RECORD OF CHANGES

DATE	SOURCE OF CHANGE	BRIEF DESCRIPTION OF CHANGE	INITIATOR	REVIEWED

A. **TITLE:** LOI-03-01 SCENARIO 4, Seismic Event, MSL Break in Turbine Building

B. **SCENARIO SETUP:**

1. Initial Protected IC-140

2. Special Instructions:
   a. Plant operating normally at 75% CTP
   b. Confirm Reactor Analyst pull sequence agrees with simulator modeling.
   c. Confirm Reactor Analyst RAP-7.3.16 guidance is available at 09-5 panel.

3. Preset Conditions:
   a. On trigger 1, MFI-EP09, Seismic Alarm
   b. On trigger 1, AN964:18, RFP Vibration Crywolf
   c. On trigger 1, ZA031VR100 (2) and (3) to 5 mils on 20 minute ramp
   d. On trigger 2, RR23:B, "B" Flow Unit Downscale
   e. On trigger 7, MS05 to 50% on 15 minute ramp, MSL leak in Turbine Building
   f. Preset RP13, MSIV Failure to Automatically Isolate
   g. Set Scram to trigger 8
   h. On trigger 8, RFI-HP15, HPCI AOP Breaker Trip
   i. Preset AD07:A, E, and K, SRV's fail to operate

4. Consumable Forms and Procedures:
   AOP-40
   AOP-1
   AOP-14

5. Modified Shift Turnover Sheet

   See Attachment 1

C. **SCENARIO SUMMARY:**

Commitment Document:
The crew will relieve the watch at 75% power returning to 100% after a rod pattern adjustment. Shortly into the watch, the EPIC Seismic Event alarm will occur simultaneous with a Reactor Feed Pump vibration alarm in and clear. Shortly after the 'B' Recirculation flow unit will fail downscale prompting a corrective action to bypass the erroneous signal, reset of the half scram and declaring the flow unit inoperable. The seismic event will be confirmed at >.08g requiring a normal reactor shutdown. While performing the AOP-14 actions, additional RFP vibration in and clear alarms will prompt monitoring vibration. The crew will observe a rising trend and dispatch an NPO for local observation. The NPO report will conclude the need to remove the RFP from service. A power reduction with both rods and recirculation flow will end with a normal shutdown of the RFP. The major event will be a slowly worsening Main Steam Line break in the steam tunnel. At the high temperature setpoint, the MSIV's will FAIL to automatically isolate. AOP-40 directed action or recognizing the failure to isolate will cause the crew to manually scram the reactor and manually isolate the MSIV's. Shortly after the scram the HPCI AOP breaker will trip disabeling HPCI. With the leak isolated, the crew will be forced to either depressurize with the SRV's to enable Condensate Booster Pump injection OR establish pressure and level control with RCIC and augment pressure control with the SRV's.

Shift Turnover ATTACHMENT 1
Currently at 75% Power A rod pattern exchange has just been completed. Return to 100% with Recirculation Flow.

EVENT NO.	EVENT SEQUENCE
1.	**EPIC Seismic Alarm and RFPT Vibration in and clear**
2.	**Flow Unit Downscale Failure**
3.	**RFPT High Vibration**
4.	**Power Reduction using recirculation flow**
5.	**Power reduction using rods**
6.	**Remove RFPT from service**
7.	**MSL Break in Turbine Building, Failure to Auto Isolate**
8.	**HPCI Start Failure**
9.	**Several SRV's fail to operate**

D. **TERMINATION CUES:**

1. Level Control on RCIC or CBP's
2. Pressure control on SRV's
3. Leak Isolated

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS/EVALUATION
Simulator in RUN Recorder and Alarm Power ON Simulator Checklist Complete			
Provide Modified Turnover			
After the shift turnover, allow no more than five minutes for panel walkdown	All	Walkdown the control panels	SAT / UNSAT / NA
	CRS	Conduct turnover brief. Order return to 100% using recirculation flow	SAT / UNSAT / NA
TRG! E1 Then delete crywolf	ANY/ALL	Recognize and report EPIC Seismic alarm and RFP 'B' vibration alarm	SAT / UNSAT / NA
Report B RFP vibration is abnormal but not significant	SNO/BOP	Dispatch NPO to investigate RFP 'B' vibration	SAT / UNSAT / NA
	CRS	Order actions of AOP-14	SAT / UNSAT / NA
When contacted, report earthquake magnitude at .10g	SNO/BOP	Obtain AOP-14: • Dispatch NPO's to tour plant and component verification • Contact NMP-2 or National Center for Earthquake Engineering • Report Earthquake magnitude at .10g	SAT / UNSAT / NA
	CRS	Order the commencement of a normal reactor shutdown per OP-65	SAT / UNSAT / NA
TRG! E2	ANY/ALL	Recognize/report half scram 'B' and flow unit off normal	SAT / UNSAT / NA
	CRS	Order response per ARP's and local report of Flow Unit status	SAT / UNSAT / NA
	SNO/BOP	Observe comparator and downscale lamps at 09-14 and reports B flow unit downscale	SAT / UNSAT / NA
	CRS	Order bypass of B flow unit and reset of half scram.	SAT / UNSAT / NA
	SNO/BOP	Per ARP 09-5-2-25 and OP-16 E.22, bypass B flow unit	SAT / UNSAT / NA

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS/EVALUATION
	SNO/RO	Per ARP 09-5-1-4, Rest half scram	SAT / UNSAT / NA
	CRS	Review ITS 3.3.1.1.2.b bases and TRM T3.3.B.1 and concludes the flow unit inoperable requires a potential LCO related to APRM operability	SAT / UNSAT / NA
Report as NPO that B RFP vibration is worsening. Recommend removing from service.	SNO/BOP	Share report with CRS	SAT / UNSAT / NA
	CRS	Order power reduction using recirculation flow to not less than 50% core flow.	SAT / UNSAT / NA
	SNO/BOP	Commence recirculation flow reduction to ~50% core flow.	SAT / UNSAT / NA
	CRS	Order insertion of first cram group.	SAT / UNSAT / NA
	SNO/RO	Insert first cram group	SAT / UNSAT / NA
	CRS	Order additional cram group(s) to achieve <50% CTP	SAT / UNSAT / NA
	SNO/RO	Insert additional cram groups	SAT / UNSAT / NA
	CRS	When power <50%, order shutdown of B RFP	
Upon shutdown, ramp vibrations to 0 over 5 minutes	SNO/BOP	Shutdown B RFP per OP-2A	SAT / UNSAT / NA
TRG! E7	ANY/ALL	Recognize/report EPIC alarms: • Turbine Building Ventilation Exhaust • Steam Tunnel Temperature	SAT / UNSAT / NA
NPO reports a large amount of steam coming from TB-272 Condenser Bay through LHRA door	SNO/BOP	Dispatch NPO with caution to area of steam tunnel	SAT / UNSAT / NA
	CRS	Order SNO/BOP to perform AOP-40 actions	SAT / UNSAT / NA

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS/EVALUATION
	SNO/BOP	Report that actions include MSIV closure Isolate Control Room and Relay Room Ventilation Order TSC filtered ventilation started.	SAT / UNSAT / NA
	CRS	Order SNO/RO to perform manual scram and AOP-1 immediate actions	SAT / UNSAT / NA *** CRITICAL TASK**
	CRS	Order SNO/BOP to perform level control on Feed and Condensate 177-222.5 inches	SAT / UNSAT / NA
	SNO/RO	• Insert Manual Scram * • Mode Switch to Shutdown • APRM's Downscale • SDIV Vent and Drains closed • Trip Turbine • Verify Fast Transfer • Verify at least 1 circ water pump running	SAT / UNSAT / NA *** CRITICAL TASK**
	SNO/BOP	Manipulate RFP controls to stabilize RPV level 177-222.5 inches.	SAT / UNSAT / NA
	ANY/ALL	If EOP-2 entry condition occurs, announce.	SAT / UNSAT / NA
	CRS	When scram is successful, order closure of MSIV's	SAT / UNSAT / NA *** CRITICAL TASK**
	SNO	Close all 8 MSIV'	SAT / UNSAT / NA *** CRITICAL TASK**
	CRS	Order level control transition to HPCI at 177-222.5 inches Order pressure control transition to SRV's at 800-1000 psig.	SAT / UNSAT / NA
	SNO	Operate SRV's in sequence to maintain 800-1000 psig	SAT / UNSAT / NA
	SNO	Observe HPCI failure to start/not available	SAT / UNSAT / NA

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS/EVALUATION
	SNO	Observe that at least 1 SRV will not operate.	SAT / UNSAT / NA
	CRS	Order level control transition to RCIC or Feed and condensate at 177-222.5 inches. If feed and condensate, order new pressure band of 500-700 psig.	SAT / UNSAT / NA
	SNO	Manipulate Feed and Condensate or RCIC as directed.	SAT / UNSAT / NA
	SNO	Operate SRV's as directed.	SAT / UNSAT / NA
		TERMINATE THE SCENARIO	

Shift Turnover
Currently at 75% Power A rod pattern exchange has just been completed. Return to 100% with Recirculation Flow.

Entergy
Nuclear Northeast

James A. FitzPatrick Nuclear Power Plant

OPERATIONS TRAINING PROGRAMS
JOB PERFORMANCE MEASURE

SRO NEW TASK TITLE: LOI-03-01 NRC EXAM E-PLAN DECLARATION FOR SCENARIO 4

APPL. TO JPM NUMBER

REV: 0 DATE: 5/25/03 NRC K/A SYSTEM NUMBER: 2.4.41 4.1

JAF TASK NUMBER: _____ JAF QUAL STANDARD NUMBER: _____

ESTIMATED COMPLETION TIME: 10 Minutes

SUBMITTED: _____ OPERATION REVIEW: _____

APPROVED: _____

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JOB PERFORMANCE MEASURE
RECORD AND CHECKLIST

SRO | NEW | TASK TITLE: LOI-03-01 NRC EXAM E-PLAN DECLARATION FOR SCENARIO 4

APPL. TO | JPM NUMBER

Current Update: 5/25/03 (Date) By: RWD (Int.)

Outstanding Items:

_____ Technical Review
_____ Additional Information
_____ Questions and Answers
_____ Validation
_____ Procedural Change Required
_____ None

Comments:

Previous Revision Dates:

SRO | NEW | TASK TITLE: LOI-03-01 NRC EXAM E-PLAN DECLARATION FOR SCENARIO 4

APPL. TO | JPM NUMBER

I. SAFETY CONSIDERATIONS

A. Ensure proper safety equipment and safety procedures are observed.

II. REFERENCES

A. JAF Emergency Plan Implementing Procedures IAP-2, Rev. 23

III. TOOLS AND EQUIPMENT

A. None

IV. SET UP REQUIREMENTS

A. This JPM is completed as followup after the scenario progress has been frozen.

V. EVALUATOR NOTES

A. If performing JPM in the plant, inform the candidate that the conditions of each step need only be properly identified and not actually performed.

B. The candidate should, at a minimum, identify the change in equipment status light indication when equipment operation is simulated.

VI. TASK CONDITIONS

A.

B.

*** - CRITICAL STEP**

S/RO/NLO NEW
TASK TITLE: LOI-03-01 NRC EXAM E-PLAN DECLARATION FOR SCENARIO 4

VII. INITIATING CUE

Based on the events that have just occurred determine if the current circumstances warrant classification in accordance with the JAF Emergency Plan and, if so, determine the appropriate classification level.

	STEP	STANDARD	EVALUATION / COMMENT
1.	Obtain/Approach IAP-2, Attachment 2.1	Candidate obtains the procedure or approaches the posted attachment.	SAT / UNSAT
2.	Recognize the applicable conditions	Candidate recognizes that the scenario events included a Main Steam Line steam leak in the turbine building resulting in a release pathway outside primary containment.	SAT / UNSAT
3.	Confirm the conditions	Candidate reviews IAP-2 Technical Bases for expected declarations.	SAT / UNSAT
*4.	Classify the event	Candidate selects 8.4.4 Alert Seismic activity >.08g 3.4.1 Site Area Emergency (Transitory) Any steam line or RWCU isolation failure resulting in a release pathway outside primary containment, Table 3.1 Table 3.1 Steam Lines MSLs HPCI RCIC	SAT / UNSAT
EVALUATOR: Terminate the task at this point.			