



ENTERGY

**GRAND GULF
NUCLEAR STATION**

**JOB PERFORMANCE
MEASURE**

Number: GG-1-JPM-SRO-A&E21
Revision: 00
Page: 1 of 8
Rtype:
QA Record
Number of pages _____
Date _____ Initials _____

TRAINING PROGRAM:

OPERATOR TRAINING

TITLE:

EAL CLASSIFICATION: SCENARIO 1

REASON FOR REVISION: NEW JPM.

THIS DOCUMENT REPLACES N/A.

REVIEW / APPROVAL:

PREPARED BY: _____ DATE: _____

APPROVED BY: _____ DATE: _____
Facility Representative

DATE TRANSMITTED TO RM	INITIAL RECEIPT BY RM (DATE/INITIAL)	RETURNED FOR CORRECTIONS (DATE/INITIAL)	RETURN RECEIPT (DATE/INITIAL)	FINAL ACCEPTANCE BY RM (DATE/INITIALS)

**GRAND GULF NUCLEAR STATION
JOB PERFORMANCE MEASURE WORKSHEET**

Task Title : EAL Classification: SCENARIO 1

JPM No. GG-1-JPM-SRO-A&E21 Rev. 00 Page 2 of 8

Task List No: SRO-A&E-015; SRO-A&E-041

K/A Reference and Importance Factors (RO/SRO):

K/A 2.4.41 - 4.1; 2.4.40 - 4.0; 2.4.30 - 3.6
10CFR55.45a(11)

Time Required for Completion: 15 Minutes (approximate).

Time Critical: YES/NO

Faulted JPM: YES/NO

APPLICABLE METHOD OF TESTING

Performance: Simulate _____ Actual X

Setting: Classroom X Plant X Simulator X

**SHOULD BE PERFORMED FOLLOWING SCENARIO 1 WITH SRO
CANDIDATE**

EVALUATION

Date Performed: _____

Performer: _____ SSN: _____ License: RO/SRO

Score: PASS _____ FAIL _____ Time to complete: _____

Evaluator Signature: _____ Date: _____

**GRAND GULF NUCLEAR STATION
JOB PERFORMANCE MEASURE WORKSHEET**

Task Title : EAL Classification: SCENARIO 1

JPM No. GG-1-JPM-SRO-A&E21 Rev. 00 Page 3 of 8

DISCUSSION

Performance of this JPM will demonstrate the ability of a Senior Reactor Operator to properly classify emergency events per Emergency Plan Procedure 10-S-01-1 and complete the required Initial Notification Form. Performance can be performed in the simulator, plant or in a classroom setting provided candidate has access to Emergency Plan Procedures.

Required Material(s):

- 01 EPP 10-S-01-1, Activation of the Emergency Plan
- 02 EPP 06-01, NOTIFICATION FORM

General Reference(s):

- 01 EPP 10-S-01-1, Activation of the Emergency Plan
- 02 EPP 10-S-01-6, Notification of Offsite Agencies and Plant On-Call Personnel

Safety Consideration(s):

- 01 None
-

**GRAND GULF NUCLEAR STATION
JOB PERFORMANCE MEASURE WORKSHEET**

Task Title : EAL Classification: SCENARIO 1

JPM No. GG-1-JPM-SRO-A&E21 Rev. 00 Page 5 of 8

NOTE:Critical items denoted by (*). Sequence is assumed unless denoted in the **Comments**.

Item 1 (*) Consult EPP 10-S-01-1 "Activation of the Emergency Plan" and classifies an ALERT.

Standard: Candidate consults EPP 10-S-01-1 "Activation of the Emergency Plan" EAL 2.2.1 and classifies an ALERT based on leakage in the Drywell from the RPV being in excess of 50 gpm with the plant in modes 1, 2, or 3.

Comments: Since the leakage in the Drywell was in excess of that of CRD, this is greater than 50 gpm.

SAT _____ UNSAT _____

Item 2 (*) Complete the Initial Notification form EPP 06-01 for an ALERT.

Standard: Candidate completes Initial Notification form EPP 06-01 with data marked with an * (See Attached).

Comments:

SAT _____ UNSAT _____

**GRAND GULF NUCLEAR STATION
JOB PERFORMANCE MEASURE WORKSHEET**

Task Title : EAL Classification: SCENARIO 1

JPM No. GG-1-JPM-SRO-A&E21 Rev. 00 Page 6 of 8

TERMINATING CUE(s):

Emergency Plan is applied to classify the event as an ALERT per EAL 2.2.1 and the Initial Notification form is completed (See Attached).

STOP TIME: _____

OVERALL COMMENTS:

**GRAND GULF NUCLEAR STATION
JOB PERFORMANCE MEASURE WORKSHEET**

Task Title : EAL Classification: SCENARIO 1

JPM No. GG-1-JPM-SRO-A&E21 Rev. 00 Page 7 of 8

**ADDITIONAL QUESTION ASKED AFTER THE PERFORMANCE OF THE JPM TO
CLARIFY THE TRAINEE'S ACTION OR UNDERSTANDING OF TASK PERFORMED:**

Question _____ K/A _____ Rating _____

Expected Response Time _____

Reference(s) Required: Yes / No Reference(s):

Question:

Trainee's Response / Comments:

Correct Response:

THIS PAGE MAY BE GIVEN TO THE TRAINEE

Initial Condition(s):

The plant was operating at 34% power. Thunder showers are reported in Tensas Parish. The 115 KV line is out of service due to required maintenance on ESF 12 Transformer. The CCW Pump C and RHR Pump C are red tagged for repairs. The event just observed has occurred.

Initiating Cue(s):

Determine the Emergency Action Level Classification, if any, and if required complete the required Initial Notification Form. Communicators are available if required.



GRAND GULF
NUCLEAR STATION

JOB PERFORMANCE
MEASURE

Number: GG-1-JPM-SRO-A&E22
Revision: 00
Page: 1 of 8
Rtype:
QA Record
Number of pages _____
Date _____ Initials _____

TRAINING PROGRAM:

OPERATOR TRAINING

TITLE:

EAL CLASSIFICATION: SCENARIO 2

REASON FOR REVISION: NEW JPM.

THIS DOCUMENT REPLACES N/A.

REVIEW / APPROVAL:

PREPARED BY: _____ DATE: _____

APPROVED BY: _____ DATE: _____
Facility Representative

DATE TRANSMITTED TO RM	INITIAL RECEIPT BY RM (DATE/INITIAL)	RETURNED FOR CORRECTIONS (DATE/INITIAL)	RETURN RECEIPT (DATE/INITIAL)	FINAL ACCEPTANCE BY RM (DATE/INITIALS)

**GRAND GULF NUCLEAR STATION
JOB PERFORMANCE MEASURE WORKSHEET**

Task Title : EAL Classification: SCENARIO 2

JPM No. GG-1-JPM-SRO-A&E22 Rev. 00 Page 2 of 8

Task List No: SRO-A&E-015; SRO-A&E-041

K/A Reference and Importance Factors (RO/SRO):

K/A 2.4.41 - 4.1; 2.4.40 - 4.0; 2.4.30 - 3.6
10CFR55.45a(11)

Time Required for Completion: 15 Minutes (approximate).

Time Critical: YES/NO

Faulted JPM: YES/NO

APPLICABLE METHOD OF TESTING

Performance: Simulate _____ Actual X

Setting: Classroom X Plant X Simulator X

**SHOULD BE PERFORMED FOLLOWING SCENARIO 2 WITH SRO
CANDIDATE**

EVALUATION

Date Performed: _____

Performer: _____ SSN: _____ License: RO/SRO

Score: PASS _____ FAIL _____ Time to complete: _____

Evaluator Signature: _____ Date: _____

**GRAND GULF NUCLEAR STATION
JOB PERFORMANCE MEASURE WORKSHEET**

Task Title : EAL Classification: SCENARIO 2

JPM No. GG-1-JPM-SRO-A&E22 Rev. 00 Page 3 of 8

DISCUSSION

Performance of this JPM will demonstrate the ability of a Senior Reactor Operator to properly classify emergency events per Emergency Plan Procedure 10-S-01-1 and complete the required Initial Notification Form. Performance can be performed in the simulator, plant or in a classroom setting provided candidate has access to Emergency Plan Procedures.

Required Material(s):

- 01 EPP 10-S-01-1, Activation of the Emergency Plan
- 02 EPP 06-01, NOTIFICATION FORM

General Reference(s):

- 01 EPP 10-S-01-1, Activation of the Emergency Plan
- 02 EPP 10-S-01-6, Notification of Offsite Agencies and Plant On-Call Personnel

Safety Consideration(s):

- 01 None
-

**GRAND GULF NUCLEAR STATION
JOB PERFORMANCE MEASURE WORKSHEET**

Task Title : EAL Classification: SCENARIO 2

JPM No. GG-1-JPM-SRO-A&E22 Rev. 00 Page 5 of 8

NOTE:Critical items denoted by (*). Sequence is assumed unless denoted in the **Comments**.

Item 1 (*) Consult EPP 10-S-01-1 "Activation of the Emergency Plan" and classifies a SITE AREA EMERGENCY.

Standard: Candidate consults EPP 10-S-01-1 "Activation of the Emergency Plan" EAL 11.4 and classifies a SITE AREA EMERGENCY based on scram conditions confirmed, and multiple control rods beyond position 02, and reactor power > 4% on APRMs.

Comments: Since the leakage in the Drywell was in excess of 50 gpm the candidate may mention EAL 2.2.1. EAL 11.4 is the overriding EAL in this case due to severity.

SAT _____ UNSAT _____

Item 2 (*) Complete the Initial Notification form EPP 06-01 for a SITE AREA EMERGENCY.

Standard: Candidate completes Initial Notification form EPP 06-01 with data marked with an * (See Attached).

Comments:

SAT _____ UNSAT _____

**GRAND GULF NUCLEAR STATION
JOB PERFORMANCE MEASURE WORKSHEET**

Task Title : EAL Classification: SCENARIO 2

JPM No. GG-1-JPM-SRO-A&E22 Rev. 00 Page 6 of 8

TERMINATING CUE(s):

Emergency Plan is applied to classify the event as a SITE AREA EMERGENCY per EAL 11.4 and the Initial Notification form is completed (See Attached).

STOP TIME: _____

OVERALL COMMENTS:

**GRAND GULF NUCLEAR STATION
JOB PERFORMANCE MEASURE WORKSHEET**

Task Title : EAL Classification: SCENARIO 2

JPM No. GG-1-JPM-SRO-A&E22 Rev. 00 Page 7 of 8

**ADDITIONAL QUESTION ASKED AFTER THE PERFORMANCE OF THE JPM TO
CLARIFY THE TRAINEE'S ACTION OR UNDERSTANDING OF TASK PERFORMED:**

Question _____ K/A _____ Rating _____

Expected Response Time _____

Reference(s) Required: Yes / No Reference(s):

Question:

Trainee's Response / Comments:

Correct Response:

THIS PAGE MAY BE GIVEN TO THE TRAINEE

Initial Condition(s):

The plant was operating at 44% power. Thunder showers are reported in Tensas Parish. The 115 KV line is out of service due to required maintenance on ESF 12 Transformer. The CCW Pump C and RHR Pump C are red tagged for repairs. The event just observed has occurred.

Initiating Cue(s):

Determine the Emergency Action Level Classification, if any, and if required complete the required Initial Notification Form. Communicators are available if required.



GRAND GULF
NUCLEAR STATION

JOB PERFORMANCE
MEASURE

Number: GG-1-JPM-SRO-A&E23
Revision: 00
Page: 1 of 8
Rtype:
QA Record
Number of pages _____
Date _____ Initials _____

TRAINING PROGRAM:

OPERATOR TRAINING

TITLE:

EAL CLASSIFICATION: SCENARIO 3

REASON FOR REVISION: NEW JPM.

THIS DOCUMENT REPLACES N/A.

REVIEW / APPROVAL:

PREPARED BY: _____	DATE: _____
APPROVED BY: _____	DATE: _____
Facility Representative	

DATE TRANSMITTED TO RM	INITIAL RECEIPT BY RM (DATE/INITIAL)	RETURNED FOR CORRECTIONS (DATE/INITIAL)	RETURN RECEIPT (DATE/INITIAL)	FINAL ACCEPTANCE BY RM (DATE/INITIALS)

**GRAND GULF NUCLEAR STATION
JOB PERFORMANCE MEASURE WORKSHEET**

Task Title : EAL Classification: SCENARIO 3

JPM No. GG-1-JPM-SRO-A&E23 Rev. 00 Page 2 of 8

Task List No: SRO-A&E-015; SRO-A&E-041

K/A Reference and Importance Factors (RO/SRO):

K/A 2.4.41 - 4.1; 2.4.40 - 4.0; 2.4.30 - 3.6
10CFR55.45a(11)

Time Required for Completion: 15 Minutes (approximate).

Time Critical: YES/NO

Faulted JPM: YES/NO

APPLICABLE METHOD OF TESTING

Performance: Simulate _____ Actual X

Setting: Classroom X Plant X Simulator X

**SHOULD BE PERFORMED FOLLOWING SCENARIO 3 WITH SRO
CANDIDATE**

EVALUATION

Date Performed: _____

Performer: _____ SSN: _____ License: RO/SRO

Score: PASS _____ FAIL _____ Time to complete: _____

Evaluator Signature: _____ Date: _____

**GRAND GULF NUCLEAR STATION
JOB PERFORMANCE MEASURE WORKSHEET**

Task Title : EAL Classification: SCENARIO 3

JPM No. GG-1-JPM-SRO-A&E23 Rev. 00 Page 3 of 8

DISCUSSION

Performance of this JPM will demonstrate the ability of a Senior Reactor Operator to properly classify emergency events per Emergency Plan Procedure 10-S-01-1 and complete the required Initial Notification Form. Performance can be performed in the simulator, plant or in a classroom setting provided candidate has access to Emergency Plan Procedures.

Required Material(s):

- 01 EPP 10-S-01-1, Activation of the Emergency Plan
- 02 EPP 06-01, NOTIFICATION FORM

General Reference(s):

- 01 EPP 10-S-01-1, Activation of the Emergency Plan
- 02 EPP 10-S-01-6, Notification of Offsite Agencies and Plant On-Call Personnel

Safety Consideration(s):

- 01 None
-

**GRAND GULF NUCLEAR STATION
JOB PERFORMANCE MEASURE WORKSHEET**

Task Title : EAL Classification: SCENARIO 3

JPM No. GG-1-JPM-SRO-A&E23 Rev. 00 Page 5 of 8

NOTE: Critical items denoted by (*). Sequence is assumed unless denoted in the **Comments**.

Item 1 (*) Consult EPP 10-S-01-1 "Activation of the Emergency Plan" and classifies a SITE AREA EMERGENCY.

Standard: Candidate consults EPP 10-S-01-1 "Activation of the Emergency Plan" EAL 4.3.1 and classifies a SITE AREA EMERGENCY based on steam leak outside primary containment which cannot be isolated or has evidence of MSIV leakage resulting in at least one Main Steam line not isolated.

Comments: EAL 4.3.1 is the overriding EAL in this case due to severity. Plant Shutdown Function is NOT a limiting emergency based on the small number of control rods not fully inserted.

SAT _____ UNSAT _____

Item 2 (*) Complete the Initial Notification form EPP 06-01 for a SITE AREA EMERGENCY.

Standard: Candidate completes Initial Notification form EPP 06-01 with data marked with an * (See Attached).

Comments: Cue Health Physics report there is NO RADIOACTIVE RELEASE in progress.

SAT _____ UNSAT _____

**GRAND GULF NUCLEAR STATION
JOB PERFORMANCE MEASURE WORKSHEET**

Task Title : EAL Classification: SCENARIO 3

JPM No. GG-1-JPM-SRO-A&E23 Rev. 00 Page 6 of 8

TERMINATING CUE(s):

Emergency Plan is applied to classify the event as a SITE AREA EMERGENCY per EAL 4.3.1 and the Initial Notification form is completed (See Attached).

STOP TIME: _____

OVERALL COMMENTS:

**GRAND GULF NUCLEAR STATION
JOB PERFORMANCE MEASURE WORKSHEET**

Task Title : EAL Classification: SCENARIO 3

JPM No. GG-1-JPM-SRO-A&E23 Rev. 00 Page 7 of 8

**ADDITIONAL QUESTION ASKED AFTER THE PERFORMANCE OF THE JPM TO
CLARIFY THE TRAINEE'S ACTION OR UNDERSTANDING OF TASK PERFORMED:**

Question _____ K/A _____ Rating _____

Expected Response Time _____

Reference(s) Required: Yes / No Reference(s):

Question:

Trainee's Response / Comments:

Correct Response:

THIS PAGE MAY BE GIVEN TO THE TRAINEE

Initial Condition(s):

The plant was operating at 100% power. Scattered Thunder Showers are reported in Tensas Parish. The 115 KV line is out of service due to required maintenance on ESF 12 Transformer. The CCW Pump C and RHR Pump C are red tagged for repairs. The event just observed has occurred.

Initiating Cue(s):

Determine the Emergency Action Level Classification, if any, and if required complete the required Initial Notification Form. Communicators are available if required.



GRAND GULF
NUCLEAR STATION

JOB PERFORMANCE
MEASURE

Number: GG-1-JPM-SRO-A&E24
Revision: 00
Page: 1 of 8
Rtype:
QA Record
Number of pages _____
Date _____ Initials _____

TRAINING PROGRAM:

OPERATOR TRAINING

TITLE:

EAL CLASSIFICATION: SCENARIO 4

REASON FOR REVISION: NEW JPM.

THIS DOCUMENT REPLACES N/A.

REVIEW / APPROVAL:

PREPARED BY: _____ DATE: _____

APPROVED BY: _____ DATE: _____

Facility Representative

DATE TRANSMITTED TO RM	INITIAL RECEIPT BY RM (DATE/INITIAL)	RETURNED FOR CORRECTIONS (DATE/INITIAL)	RETURN RECEIPT (DATE/INITIAL)	FINAL ACCEPTANCE BY RM (DATE/INITIALS)

**GRAND GULF NUCLEAR STATION
JOB PERFORMANCE MEASURE WORKSHEET**

Task Title : EAL Classification: SCENARIO 4

JPM No. GG-1-JPM-SRO-A&E24 Rev. 00 Page 2 of 8

Task List No: SRO-A&E-015; SRO-A&E-041

K/A Reference and Importance Factors (RO/SRO):

K/A 2.4.41 - 4.1; 2.4.40 - 4.0; 2.4.30 - 3.6
10CFR55.45a(11)

Time Required for Completion: 15 Minutes (approximate).

Time Critical: YES/NO

Faulted JPM: YES/NO

APPLICABLE METHOD OF TESTING

Performance: Simulate _____ Actual X

Setting: Classroom X Plant X Simulator X

**SHOULD BE PERFORMED FOLLOWING SCENARIO 4 WITH SRO
CANDIDATE**

EVALUATION

Date Performed: _____

Performer: _____ SSN: _____ License: RO/SRO

Score: PASS _____ FAIL _____ Time to complete: _____

Evaluator Signature: _____ Date: _____

**GRAND GULF NUCLEAR STATION
JOB PERFORMANCE MEASURE WORKSHEET**

Task Title : EAL Classification: SCENARIO 4

JPM No. GG-1-JPM-SRO-A&E24 Rev. 00 Page 3 of 8

DISCUSSION

Performance of this JPM will demonstrate the ability of a Senior Reactor Operator to properly classify emergency events per Emergency Plan Procedure 10-S-01-1 and complete the required Initial Notification Form. Performance can be performed in the simulator, plant or in a classroom setting provided candidate has access to Emergency Plan Procedures.

Required Material(s):

- 01 EPP 10-S-01-1, Activation of the Emergency Plan
- 02 EPP 06-01, NOTIFICATION FORM

General Reference(s):

- 01 EPP 10-S-01-1, Activation of the Emergency Plan
- 02 EPP 10-S-01-6, Notification of Offsite Agencies and Plant On-Call Personnel

Safety Consideration(s):

- 01 None
-

**GRAND GULF NUCLEAR STATION
JOB PERFORMANCE MEASURE WORKSHEET**

Task Title : EAL Classification: SCENARIO 4

JPM No. GG-1-JPM-SRO-A&E24 Rev. 00 Page 5 of 8

NOTE:Critical items denoted by **(*)**. Sequence is assumed unless denoted in the **Comments**.

Item 1 (*) Consult EPP 10-S-01-1 "Activation of the Emergency Plan" and classifies an ALERT.

Standard: Candidate consults EPP 10-S-01-1 "Activation of the Emergency Plan" EAL 2.2.1 and classifies an ALERT based on a feedwater leak inside the Drywell which has evidence of additional leakage.

Comments:

SAT _____ **UNSAT** _____

Item 2 (*) Complete the Initial Notification form EPP 06-01 for an ALERT.

Standard: Candidate completes Initial Notification form EPP 06-01 with data marked with an * (See Attached).

Comments:

SAT _____ **UNSAT** _____

**GRAND GULF NUCLEAR STATION
JOB PERFORMANCE MEASURE WORKSHEET**

Task Title : EAL Classification: SCENARIO 4

JPM No. GG-1-JPM-SRO-A&E24 Rev. 00 Page 6 of 8

TERMINATING CUE(s) :

Emergency Plan is applied to classify the event as an ALERT per EAL 2.2.1 and the Initial Notification form is completed (See Attached).

STOP TIME: _____

OVERALL COMMENTS:

**GRAND GULF NUCLEAR STATION
JOB PERFORMANCE MEASURE WORKSHEET**

Task Title : EAL Classification: SCENARIO 4

JPM No. GG-1-JPM-SRO-A&E24 Rev. 00 Page 7 of 8

**ADDITIONAL QUESTION ASKED AFTER THE PERFORMANCE OF THE JPM TO
CLARIFY THE TRAINEE'S ACTION OR UNDERSTANDING OF TASK PERFORMED:**

Question _____ K/A _____ Rating _____

Expected Response Time _____

Reference(s) Required: Yes / No Reference(s):

Question:

Trainee's Response / Comments:

Correct Response:

THIS PAGE MAY BE GIVEN TO THE TRAINEE

Initial Condition(s):

The plant was operating at \approx 90% power. Thunder showers are reported in Tensas Parish. The 115 KV line is out of service due to required maintenance on ESF 12 Transformer. The CCW Pump C and RHR Pump C are red tagged for repairs. The event just observed has occurred.

Initiating Cue(s):

Determine the Emergency Action Level Classification, if any, and if required complete the required Initial Notification Form. Communicators are available if required.



ENTERGY

**GRAND GULF
NUCLEAR STATION**

**JOB PERFORMANCE
MEASURE**

Number: GG-1-JPM-SRO-A&E25

Revision: 00

Page: 1 of 8

Rtype:

QA Record

Number of pages _____

Date _____ Initials _____

TRAINING PROGRAM:

OPERATOR TRAINING

TITLE:

EAL CLASSIFICATION: SCENARIO 5

REASON FOR REVISION: NEW JPM.

THIS DOCUMENT REPLACES N/A.

REVIEW / APPROVAL:

PREPARED BY: _____	DATE: _____
APPROVED BY: _____	DATE: _____
Facility Representative	

DATE TRANSMITTED TO RM	INITIAL RECEIPT BY RM (DATE/INITIAL)	RETURNED FOR CORRECTIONS (DATE/INITIAL)	RETURN RECEIPT (DATE/INITIAL)	FINAL ACCEPTANCE BY RM (DATE/INITIALS)

**GRAND GULF NUCLEAR STATION
JOB PERFORMANCE MEASURE WORKSHEET**

Task Title : EAL Classification: SCENARIO 5

JPM No. GG-1-JPM-SRO-A&E25 Rev. 00 Page 2 of 8

Task List No: SRO-A&E-015; SRO-A&E-041

K/A Reference and Importance Factors (RO/SRO):

K/A 2.4.41 - 4.1; 2.4.40 - 4.0; 2.4.30 - 3.6
10CFR55.45a(11)

Time Required for Completion: 15 Minutes (approximate).

Time Critical: YES/NO

Faulted JPM: YES/NO

APPLICABLE METHOD OF TESTING

Performance: Simulate _____ Actual X

Setting: Classroom X Plant X Simulator X

**SHOULD BE PERFORMED FOLLOWING SCENARIO 5 WITH SRO
CANDIDATE**

EVALUATION

Date Performed: _____

Performer: _____ SSN: _____ License: RO/SRO

Score: PASS _____ FAIL _____ Time to complete: _____

Evaluator Signature: _____ Date: _____

**GRAND GULF NUCLEAR STATION
JOB PERFORMANCE MEASURE WORKSHEET**

Task Title : EAL Classification: SCENARIO 5

JPM No. GG-1-JPM-SRO-A&E25 Rev. 00 Page 3 of 8

DISCUSSION

Performance of this JPM will demonstrate the ability of a Senior Reactor Operator to properly classify emergency events per Emergency Plan Procedure 10-S-01-1 and complete the required Initial Notification Form. Performance can be performed in the simulator, plant or in a classroom setting provided candidate has access to Emergency Plan Procedures.

Required Material(s):

- 01 EPP 10-S-01-1, Activation of the Emergency Plan
- 02 EPP 06-01, NOTIFICATION FORM

General Reference(s):

- 01 EPP 10-S-01-1, Activation of the Emergency Plan
- 02 EPP 10-S-01-6, Notification of Offsite Agencies and Plant On-Call Personnel

Safety Consideration(s):

- 01 None
-

**GRAND GULF NUCLEAR STATION
JOB PERFORMANCE MEASURE WORKSHEET**

Task Title : EAL Classification: SCENARIO 5

JPM No. GG-1-JPM-SRO-A&E25 Rev. 00 Page 5 of 8

NOTE: Critical items denoted by (*). Sequence is assumed unless denoted in the **Comments**.

Item 1 (*) Consult EPP 10-S-01-1 "Activation of the Emergency Plan" and classifies a SITE AREA EMERGENCY.

Standard: Candidate consults EPP 10-S-01-1 "Activation of the Emergency Plan" EAL 11.4 and classifies a SITE AREA EMERGENCY based on scram conditions confirmed, and multiple control rods beyond position 02, and reactor power > 4% on APRMs.

Comments: **EAL 11.4 is the overriding EAL in this case due to severity.**

SAT _____ UNSAT _____

Item 2 (*) Complete the Initial Notification form EPP 06-01 for a SITE AREA EMERGENCY.

Standard: Candidate completes Initial Notification form EPP 06-01 with data marked with an * (See Attached).

Comments:

SAT _____ UNSAT _____

**GRAND GULF NUCLEAR STATION
JOB PERFORMANCE MEASURE WORKSHEET**

Task Title : EAL Classification: SCENARIO 5

JPM No. GG-1-JPM-SRO-A&E25 Rev. 00 Page 6 of 8

TERMINATING CUE(s):

Emergency Plan is applied to classify the event as a SITE AREA EMERGENCY per EAL 11.4 and the Initial Notification form is completed (See Attached).

STOP TIME: _____

OVERALL COMMENTS:

**GRAND GULF NUCLEAR STATION
JOB PERFORMANCE MEASURE WORKSHEET**

Task Title : EAL Classification: SCENARIO 5

JPM No. GG-1-JPM-SRO-A&E25 Rev. 00 Page 7 of 8

**ADDITIONAL QUESTION ASKED AFTER THE PERFORMANCE OF THE JPM TO
CLARIFY THE TRAINEE'S ACTION OR UNDERSTANDING OF TASK PERFORMED:**

Question _____ K/A _____ Rating _____

Expected Response Time _____

Reference(s) Required: Yes / No Reference(s):

Question:

Trainee's Response / Comments:

Correct Response:

THIS PAGE MAY BE GIVEN TO THE TRAINEE

Initial Condition(s):

The plant was operating at 44% power. Thunder Showers are reported in Tensas Parish. The 115 KV line is out of service due to required maintenance on ESF 12 Transformer. The CCW Pump C and RHR Pump C are red tagged for repairs. The event just observed has occurred.

Initiating Cue(s):

Determine the Emergency Action Level Classification, if any, and if required complete the required Initial Notification Form. Communicators are available if required.



ENTERGY

**GRAND GULF
NUCLEAR STATION**

**JOB PERFORMANCE
MEASURE**

Number: GG-1-JPM-SRO-ADM26

Revision: 00

Page: 1 of 9

Rtype:

QA Record

Number of pages _____

Date _____ Initials _____

TRAINING PROGRAM:

OPERATOR TRAINING

TITLE:

**WRITE LCO FOR INOP CONTROL ROOM AIR CONDITIONING
SYSTEM**

REASON FOR REVISION: New JPM

THIS DOCUMENT REPLACES N/A

REVIEW / APPROVAL:

PREPARED BY: _____ DATE: _____

APPROVED BY: _____ DATE: _____

Facility Representative

DATE TRANSMITTED TO RM	INITIAL RECEIPT BY RM (DATE/INITIAL)	RETURNED FOR CORRECTIONS (DATE/INITIAL)	RETURN RECEIPT (DATE/INITIAL)	FINAL ACCEPTANCE BY RM (DATE/INITIALS)

**GRAND GULF NUCLEAR STATION
JOB PERFORMANCE MEASURE WORKSHEET**

Task Title: WRITE LCO FOR INOP CONTROL ROOM AIR CONDITIONING
SYSTEM

JPM No. GG-1-JPM-SRO-ADM26 Rev. 00 Page 2 of 9

Task List No: SRO-ADMIN-038

K/A Reference and Importance Factors (RO/SRO):

K/A 2.1.12 4.0

Time Required for Completion: 15 Minutes (approximate).

Time Critical: YES/NO

Faulted JPM: YES/NO

APPLICABLE METHOD OF TESTING

Performance: Simulate X Actual

Setting: Classroom X Plant X Simulator X

EVALUATION

Date Performed:

Performer: SSN: License: RO/SRO

Score: PASS FAIL Time to complete:

Evaluator Signature: Date:

**GRAND GULF NUCLEAR STATION
JOB PERFORMANCE MEASURE WORKSHEET**

Task Title: WRITE LCO FOR INOP CONTROL ROOM AIR CONDITIONING
SYSTEM

JPM No. GG-1-JPM-SRO-ADM26 Rev. 00 Page 3 of 9

DISCUSSION

Performance of this JPM will demonstrate the ability of a Senior Reactor Operator to properly fill out an LCO form per Operations Department Section Procedure 02-S-01-17. Performance can be simulated in the simulator, plant or in a classroom setting provided candidate has access to 02-S-01-17 and a set of Tech. Specs.

Required Material(s):

- 01 02-S-01-17, Control of Limiting Conditions for Operation
- 02 Technical Specifications

General Reference(s):

- 01 02-S-01-17, Control of Limiting Conditions for Operation
- 02 Technical Specifications

Safety Consideration(s):

- 01 None
-

**GRAND GULF NUCLEAR STATION
JOB PERFORMANCE MEASURE WORKSHEET**

Task Title: WRITE LCO FOR INOP CONTROL ROOM AIR CONDITIONING SYSTEM

JPM No. GG-1-JPM-SRO-ADM26 Rev. 00 Page 5 of 9

NOTE: Critical items denoted by (*). Sequence is assumed unless denoted in the **Comments**.

Item 1 () Obtain a controlled copy of 02-S-01-17, "Control of Limiting Conditions for Operation"

Standard: Candidate obtains a controlled copy of 02-S-01-17.

Comments: This is an Information Use procedure and is NOT required to be obtained.

SAT _____ UNSAT _____

Item 2 (*) Fills in the blanks on the LCO form.

Standard: Candidate fills in all applicable blanks on the LCO form. See the attached LCO form for correct answer. Blanks marked with ** are critical.

Comments: IF ASKED, CUE THE CANDIDATE PRESENT TIME IS WHEN IT WAS DECLARED INOP.

SAT _____ UNSAT _____

GRAND GULF NUCLEAR STATION
JOB PERFORMANCE MEASURE WORKSHEET

Task Title: WRITE LCO FOR INOP CONTROL ROOM AIR CONDITIONING
SYSTEM

JPM No. GG-1-JPM-SRO-ADM26 Rev. 00 Page 6 of 9

TERMINATING CUE(s):

LCO form filled out properly for Tech. Spec. 3.7.4 action
Condition A. required action 1.

STOP TIME: _____

OVERALL COMMENTS:

**GRAND GULF NUCLEAR STATION
JOB PERFORMANCE MEASURE WORKSHEET**

Task Title: WRITE LCO FOR INOP CONTROL ROOM AIR CONDITIONING
SYSTEM

JPM No. GG-1-JPM-SRO-ADM26 Rev. 00 Page 7 of 9

**ADDITIONAL QUESTION ASKED AFTER THE PERFORMANCE OF THE JPM TO CLARIFY
THE TRAINEE'S ACTION OR UNDERSTANDING OF TASK PERFORMED:**

Question _____ K/A _____ Rating _____

Expected Response Time _____

Reference(s) Required: Yes / No Reference(s):

Question:

Trainee's Response / Comments:

Correct Response:

THIS PAGE MAY BE GIVEN TO THE TRAINEE

Initial Condition(s): (The location for the initial conditions to be given is _____*_____.)

The plant was operating at 100 % power. The Unit I Control Room Air Conditioner has been declared inoperable due to a freon leak on the air conditioner evaporator. Unit II Control Room Air Conditioner is in operation. No other plant equipment is inoperable.

The CI number is xxxxxx1
The WO number is xxxxxx2

Initiating Cue(s):

You are the Shift Supervisor. Complete the necessary LCO form for this condition.



ENTERGY

**GRAND GULF
NUCLEAR STATION**

**JOB PERFORMANCE
MEASURE**

Number: GG-1-JPM-SRO-ADM27
Revision: 00
Page: 1 of 8
Rtype:
QA Record
Number of pages _____
Date _____ Initials _____

TRAINING PROGRAM:

OPERATOR TRAINING

TITLE:

REVIEW AND APPROVE COMPLETED SURVEILLANCE

REASON FOR REVISION: NEW JPM.

THIS DOCUMENT REPLACES N/A.

REVIEW / APPROVAL:

PREPARED BY: _____ DATE: _____

APPROVED BY: _____ DATE: _____

Facility Representative

DATE TRANSMITTED TO RM	INITIAL RECEIPT BY RM (DATE/INITIAL)	RETURNED FOR CORRECTIONS (DATE/INITIAL)	RETURN RECEIPT (DATE/INITIAL)	FINAL ACCEPTANCE BY RM (DATE/INITIALS)

**GRAND GULF NUCLEAR STATION
JOB PERFORMANCE MEASURE WORKSHEET**

Task Title: REVIEW AND APPROVE COMPLETED SURVEILLANCE

JPM No. GG-1-JPM-SRO-ADM27 Rev. 00 Page 2 of 8

Task List No: SRO-M&S-014

K/A Reference and Importance Factors (RO/SRO):

K/A 2.2.12 - 3.4

Time Required for Completion: 30 Minutes (approximate).

Time Critical: YES/NO

Faulted JPM: YES/NO

APPLICABLE METHOD OF TESTING

Performance: Simulate _____ Actual X

Setting: Classroom _____ Plant _____ Simulator X

EVALUATION

Date Performed: _____

Performer: _____ SSN: _____ License: RO/SRO

Score: PASS _____ FAIL _____ Time to complete: _____

Evaluator Signature: _____ Date: _____

**GRAND GULF NUCLEAR STATION
JOB PERFORMANCE MEASURE WORKSHEET**

Task Title: REVIEW AND APPROVE COMPLETED SURVEILLANCE

JPM No. GG-1-JPM-SRO-ADM27 Rev. 00 Page 3 of 8

DISCUSSION

Performance of this JPM will demonstrate the review for approval a completed surveillance.

Required Material(s):

01 06-OP-1E12-Q-0006, LPCI/RHR Subsystem B MOV Functional Test

General Reference(s):

01 06-OP-1E12-Q-0006, LPCI/RHR Subsystem B MOV Functional Test

02 01-S-06-12, GGNS Surveillance Program

Safety Consideration(s):

01 None

**GRAND GULF NUCLEAR STATION
JOB PERFORMANCE MEASURE WORKSHEET**

Task Title: REVIEW AND APPROVE COMPLETED SURVEILLANCE

JPM No. GG-1-JPM-SRO-ADM27 Rev. 00 Page 5 of 8

NOTE: Critical items denoted by (*). Sequence is assumed unless denoted in the **Comments**.

Item 1 (*) Review the completed Attachment II of 06-OP-1E12-Q-0006.

Standard: Candidate reviews the completed Surveillance data package noting the following information.

_____ Page 5 Item 5.2.3d(5) stroke time of 75.6 seconds is above the Limiting Value, Maximum acceptable, and TRM Limit.

_____ Page 7 Item 5.2.4b stroke time of 11.6 seconds is above the Limiting Value and Maximum acceptable.

_____ Page 12 Item 5.2.8d stroke time of 121.5 seconds is above the Limiting Value and Maximum acceptable.

_____ Page 22 Item 5.2.13e stroke time of 63.1 seconds is above the Limiting Value, Maximum acceptable, and TRM Limit.

The candidate should reviews the entire surveillance, any of the above will result in a failed surveillance and that various LCOs must be entered. These LCOs include applicable RHR System and Primary Containment Isolation Valves.

Comments: Candidate should indicate the failure of the surveillance with at least 3 of 4 items. If required, request the candidate to review all data on surveillance.

Identification of all LCOs is NOT CRITICAL, recognition of RHR 'B' being INOP IS CRITICAL.

SAT _____ UNSAT _____

**GRAND GULF NUCLEAR STATION
JOB PERFORMANCE MEASURE WORKSHEET**

Task Title: REVIEW AND APPROVE COMPLETED SURVEILLANCE

JPM No. GG-1-JPM-SRO-ADM27 Rev. 00 Page 6 of 8

TERMINATING CUE(s):

Surveillance 06-OP-1E12-Q-0006 has been reviewed and the candidate denotes the discrepancies and identifies that surveillance cannot be satisfactory and that RHR B and one or more Primary Containment Valves are INOP.

STOP TIME: _____

OVERALL COMMENTS:

**GRAND GULF NUCLEAR STATION
JOB PERFORMANCE MEASURE WORKSHEET**

Task Title: REVIEW AND APPROVE COMPLETED SURVEILLANCE

JPM No. GG-1-JPM-SRO-ADM27 Rev. 00 Page 7 of 8

**ADDITIONAL QUESTION ASKED AFTER THE PERFORMANCE OF THE JPM TO
CLARIFY THE TRAINEE'S ACTION OR UNDERSTANDING OF TASK PERFORMED:**

Question _____ K/A _____ Rating _____

Expected Response Time _____

Reference(s) Required: Yes / No Reference(s):

Question:

Trainee's Response / Comments:

Correct Response:

THIS PAGE MAY BE GIVEN TO THE TRAINEE

Initial Condition(s):

The plant is operating at 100 % power. An operator has just completed the performance of surveillance LPCI/RHR Subsystem B MOV Functional Test 06-OP-1E12-Q-0006 Attachment II.

Initiating Cue(s):

You are the Shift Supervisor. Perform the review and approval of the surveillance.

Facility: **GRAND GULF NUCLEAR STATION** Scenario No.: **1** Op-Test No.: **Day 1**

Examiners: _____ Operators: _____

Objectives: To evaluate the candidates' ability to operate the facility in response to the following evolutions:

1. Shift Recirculation Pumps to fast speed.
2. *Raise Recirculation flow to 60 % core flow.*
3. Raise Reactor Power by withdrawing control rods, Perform operator actions for a stuck control rod per ONEP.
4. Analyze the impact of a failure of the reference leg of instruments connected to D004A and apply Technical Specifications.
5. Initiate a reactor scram based on rising Drywell Pressure.
6. Respond to a failure of Division 1 ECCS failure to initiate.
7. With a failure of Feedwater Line in the Turbine Building and reduced injection systems maintain reactor level per the EOPs.

Initial Conditions: Reactor Power is at 34 % bringing the plant up following an outage; Reactor Recirculation pumps in Slow Speed; a single Reactor Feed Pump in single element Master Level Control;

INOPERABLE Equipment

- APRM 'F' is INOP due to a failed power supply card
- ESF 12 Transformer is tagged out of service for maintenance
- CCW Pump 'C' is tagged out of service for pump seal replacement
- RHR 'C' Pump is tagged out of service for motor oil replacement

Appropriate clearances and LCOs are written.

Turnover: Continue to bring the plant to full power per IOI-2. There are scattered thunder showers reported in the Tensas Parish area.

Event No.	Malf. No.	Event Type*	Event Description
1		N (RO)	Shift Reactor Recirculation Pumps to Fast Speed (SOI 04-1-01-B33-1)
2		R (RO)	<i>Raise Total Core Flow to > 67.5 Mlbm/hr (IOI 03-1-01-2)</i>
3	z022022_32_09	C (RO, BOP)	Withdraw control rods to increase power. (Control Rod Pull Sheet) Control Rod 32-09 is stuck, un-stick control rod per ONEP. (ONEP 05-1-02-IV-1)

Scenario 1 Day 1 (Continued)

Event No.	Malf. No.	Event Type*	Event Description
4	rr188a rr188e rr063a@ 0.5% (ramp to 3% after scram)	I (RO, BOP)	Respond to a failure of the reference leg of D004A level instrument. (Tech Specs)
5			Initiate manual reactor scram in response to rising Drywell pressure. (05-1-02-I-1)
6	rr040a @0	I (BOP)	Failure of Division 1 ECCS to automatically initiate on High Drywell Pressure
7	fw070a @100	M (ALL)	Feedwater Line rupture in the Turbine Building with leakage from the reactor
8	e22052	C (BOP)	HPCS pump trip on initiation
9	e51044 @25	C (BOP)	RCIC fails to achieve rated conditions for injection

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

Critical Tasks

- Recognize failure of Division 1 to initiate and manually initiate Division 1
- Lower reactor pressure to allow injection from low pressure systems

Scenario 1 Day 1 (Continued)

Crew Turnover:

Rx at 34% CTP.

The plant is raising power following an outage. Reactor Recirculation Pumps are operating in Slow Speed. The 'A' Reactor Feed Pump is operating in Single Element Master Level Control. Unit I Instrument Air Compressor is operating and Unit II Instrument Air Compressor is secured.

APRM 'F' is failed due to a failed power supply card and bypassed.

ESF 12 Transformer is tagged out of service for maintenance.

CCW Pump 'C' is tagged out of service for pump seal replacement.

RHR 'C' Pump is tagged out of service for motor oil replacement.

Appropriate clearances and LCOs are written.

Continue to bring the plant to full power per IOI-2 step 5.11.

Startup Pull Sheet Step 117.

Fraction of Core Boiling Boundary is < 1.0.

There are scattered thunderstorms reported in the Tensas Parish area.

Simulator Setup:

Start the process from a new simulator load.

Reset to IC-13.

Run BAT file setup1 and verify or perform the following:

IC:	13
OOS:	ESF Transformer 12 (Place tags on 152-1903, 1904, 1905, 1511, 1611, and 1704) CCW C Pump (Place tag on start HS) RHR C Pump (Place tag on start HS)
Active malfunctions:	z022022_32_09 Control Rod 32-09 stuck rr040a @ 0 Drywell Pressure Transmitter B21-N094A e22052 HPCS Pump Trip on start e51044 @ 25 RCIC Turbine Speed Control Failure
Active overrides	p53038_on Unit I Inst Air Compressor operating p53039_off Unit II Inst Air Compressor secured
Pending overrides	None

Pending malfunctions: **rr188a** Upscale Failure D004A Narrow Range (TRG 1)
 rr188e Upscale Failure D004A Wide Range (TRG 1)
 rr063a @ 0.5% Recirc Loop A leak (TRG 1) ramp to 3%
 after scram
 fw070a @ 100% Feedwater Rupture Turb Bldg (TRG 2)
 c11028a CRD A Pump Trip (TRG 3)
 c11028b CRD B Pump Trip (TRG 4)

Pending component malfunctions: None

Trigger files:	Trigger 1	D004A Instrument Failure
	Trigger 2	Feedwater Rupture in Turbine Building
	Trigger 3	CRD A pump trip after LSS sequence (will not restart after shed)
	Trigger 4	CRD B will NOT be able to be started after LSS actuation.

(Triggers 3 and 4 are to simulate a common mode failure of LSS Sequencing.)

Place RHR C OOSVC handswitch to OOSVC.

Bypass Division 2 APRM Bypass Joystick to APRM F position.

Open Circuit Breakers 152-1903, 1904, 1905, 1511, 1611, and 1704

Place CCW pump B to STOP (to clear Standby light) then to START, stop CCW pump C.

Startup all PDS / SPDS screens. Clear any graphs and trends off of SPDS.

Setup the presently used cyclops display and verify it is functional.

Ensure the correct startup sequence is available at the P680 for the present IC.

Install turnover guide, red tag, and LCO paperwork as applicable.

Advance all chart recorders and ensure all pens are inking properly.
 (APRM chart recorders must be turned on and settings for scales on pens 0 – 125 scale)

SIMULATOR OPERATION

Once simulator is reinitialized and setup complete take the simulator out of Freeze.

Once the Crew has taken control note the simulator time.

Crew will prepare to and shift Recirc Pumps to Fast Speed.

Cues:

If asked, report as Auxiliary Building Operator – Recirc Pump Seal Purge flow is 1.8 gpm on each pump.

If asked, report as Reactor Engineer – Core Thermal power is indicating 34 % (~1303 MWth).

The Crew will raise Recirc Total Core Flow to ~ 67.5 Mlbm/hr using flow control valves.

After Recirc Pumps are in Fast Speed, the SS should request FCTR switches be placed in NORMAL.

Remote Action page NEUTRON MONITOR C51309 to NORM
C51310 to NORM

The Crew should note Feedwater flow is not sufficient to transfer to Three Element Control.

If asked, as Reactor Engineer report sufficient margin to withdraw control rods starting at step 117 to achieve 6.6 Mlbm/hr Feed flow. Withdrawal is allowed in either gang or individual at SS and ACRO discretion.

The Crew when Control Rod 32-09 is attempted to be withdrawn will note its inability to move. After the second time to raise CRD Drive Water Pressure remove malfunction z022022 32 09.

Once CRD Drive Pressure is returned to normal **activate TRIGGER 1.**

On Scram, **activate TRIGGER 2.**

When Manual Scram inserted, Raise leak rr063a to 3%.

If required to cause Reactor level to begin to lower rr063a may be raised to 5%.

EP Attachments which may be requested:

Attachment 12 Defeat RHR Shutdown Cooling interlocks.

Attachment 26 Align Fire Water makeup to the Reactor (no simulator modeling)

Attachment 25 Align Condensate Transfer makeup to the Reactor (no simulator modeling)

If asked, report as Electrical Supervisor – HPCS Pump Breaker has Motor overcurrent lockout further investigation required.

If asked, report as I & C Supervisor – RCIC speed controller has failed.

Crew may request Circ Water Pump A cooling be transferred to pump discharge. Remote Function page Circulating Water N71195 to pump discharge.

TERMINATION

Once Reactor Water Level is being restored using LPCS or LPCI and the Lead Evaluator concurs the scenario may be terminated.

Critical Tasks

- Recognize failure of Division 1 to initiate and manually initiate Division 1.
- Lower reactor pressure to allow injection from low pressure systems.

Op-Test No.: _____ Scenario No.: <u> 1 </u> Event No.: <u> 1 </u>		
Event Description: Shift Recirc Pumps A and B to Fast Speed. Then raise total Recirc flow to 67.5 Mlbm/hr. (04-1-01-B33-1)		
Time	Position	Applicant's Actions or Behavior
	SS	Provides Reactivity brief to crew.
	RO	Verifies position on Power to Flow Map (Operating in Region III).
	RO	Closes Flow Control Valve in manual to ~ 6% valve position (Min valve position) for the first Recirc Pump.
	BOP	Raise Taps on 11HD and 12HE Transformers to raise voltage on buses to 7.2 KV. (Candidate may elect to raise and lower taps for each pump start independently, this is acceptable.)
	RO	Start the first Recirc Pump in Fast Speed.
	RO	Closes Flow Control Valve in manual to ~ 6% valve position (Min valve position) for the second Recirc Pump.
	RO	Start the second Recirc Pump in Fast Speed.
	BOP	Lower Taps on 11HD and 12HE Transformers to raise voltage on buses to 7.0 KV. (May be performed after each respective pump start.)
	BOP	Monitor Power, Level, Pressure, and Turbine Loading during the evolution.

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

Event Description: **Raise Total Core Flow to 67.5 Mlbm/hr using Recirc Flow Control.**
(This will raise Reactor Power from ~ 37% to ~43% power and Total Core Flow from ~ 52 to ~ 67.5 Mlbm/hr.)

Time	Position	Applicant's Actions or Behavior
	RO	Raise both Recirc Flow Control Valves positions to achieve 67.5 Mlbm/hr Total Recirc Flow. (The RO may elect to use both hands to adjust core flow by raising both Recirc Flow Control Valves at the same time to maintain the loops balanced. This is acceptable.)
	BOP	Monitors Pressure, Level, Power, and Turbine Loading.
	RO & BOP	Monitor operation on the Power to Flow Map.

Op-Test No.: _____ Scenario No.: 1 Event No.: 3 Event Description: **Withdraw control rods to increase power. (Control Rod Pull Sheet)****Control Rod 32-09 is stuck, un-stick control rod per ONEP. (ONEP 05-1-02-IV-1)**

Time	Position	Applicant's Actions or Behavior
	SS	Provides Reactivity brief to crew.
	RO	Verifies control rods and positions per Pull Sheet and selects control rods per next gang of control rods. (May select Individual or Gang movement and may select any Control Rod in the Gang.)
	BOP	Act as Verifier for Control Rod movements.
	RO	Moves Control Rods from Position 04 to position 08. Once Control Rod 32-09 is attempted to be moved will recognize control rod is immovable.
	SS	Obtains CRD Malfunctions ONEP 05-1-02-IV-1 and verifies action per section 3.5, orders CRD Drive pressure raised ~25 psid.
	BOP	Raises CRD Drive pressure ~ 25 psid using C11-F003 Pressure Control Valve on H13-P601.
	RO	Attempts to move the Control Rod and reports no movement.
	BOP	Raises CRD Drive pressure ~25 psid using C11-F003 Pressure Control Valve on H13-P601.
	RO	Attempts to move the Control Rod and reports movement and positions Control Rod 32-09 at position 08.

Op-Test No.: _____ Scenario No.: <u>1</u> Event No.: <u>4</u>		
Event Description: Respond to a failure of the reference leg of D004A Reactor Level Instrument.		
Time	Position	Applicant's Actions or Behavior
	RO	Announces and acknowledges alarms on H13-P680. <ul style="list-style-type: none"> - RPS scram (1/2 scram signal on RPS A) - Main Turb/RFPT Level 8 trip (1 of 3; 2 of 3 required for trip) - Level 8 Scram signal
	RO	Observes Level Instruments and determines common indication of D004A failure on reference leg side.
	BOP	Observes Level Instruments on H13-P601 off the same condensing pot and determines upscale indication for confirmation.
	RO	Confirms with ARI actions correct and the Main Turbine and Reactor Feed Pumps should NOT have tripped and there should only be a 1/2 scram signal.
	SS	Verifies Technical Specifications. See attached Attachment from 04-1-01-B21-1 for LCOs associated with D004A. (Based on Drywell Conditions the SS may require a followup question to cover this action.)
	CREW	Determines Drywell Pressure is rising and failure is most likely from an instrument line break. (May be a followup question.)

Op-Test No.: _____ Scenario No.: <u>1</u> Event No.: <u>5</u>		
Event Description: Manual scram the reactor based on rising Drywell Pressure.		
Time	Position	Applicant's Actions or Behavior
	SS	Based on rising Drywell Pressure due to the Instrument Line break, orders manual scram of the Reactor
	RO	Places the Reactor Mode Switch to Shutdown or arms and depresses at least one Manual Scram Pushbutton per RPS Division (A & B).
	RO	Verifies All Control Rods have fully inserted to position 00 and reports to the SS "All Rods Inserted".
	RO	If the Manual Scram Pushbuttons utilized confirms stable reactor pressure and places the Reactor Mode Switch in Shutdown.

Op-Test No.: _____ Scenario No.: <u>1</u> Event No.: <u>6</u>		
Event Description: Respond to a failure of Division 1 ECCS to automatically initiate on High Drywell Pressure.		
Time	Position	Applicant's Actions or Behavior
	BOP **	Observes Initiation of ECCS on High Drywell Pressure and observes Division 1 ECCS failed to initiate automatically. Reports failure of Division 1 to the SS.
	BOP **	Manually initiates Division 1 ECCS using the Division 1 (LPCS/LPCI A Manual Initiation Pushbutton).
	BOP	Reports operation of Division 1 ECCS to the SS.
	SS	Enters Emergency Procedure 3 Containment Control.

Op-Test No.: _____ Scenario No.: <u>1</u> Event No.: <u>7</u>		
Event Description: Feedwater Line Rupture in the Turbine Building with leakage from the Reactor.		
Time	Position	Applicant's Actions or Behavior
	RO	Announces loss of the ability to feed the Reactor and observes the following: <ul style="list-style-type: none"> - Lowering Reactor Water Level - Turbine Building Sump Level alarms - Reactor Feed Pump Suction flow without Feed flow to Reactor
	SS	Enters Emergency Procedure 2.
	SS	Determines systems for injection into the Reactor and prioritizes system use for injection into the reactor Reactor Core Isolation Cooling (RCIC) High Pressure Core Spray (HPCS)
	BOP	Initiates RCIC either using the Manual Initiation Pushbutton or manual realignment. Determines RCIC will NOT develop enough pressure to inject into the Reactor and reports failure to SS.
	RO	Secures the Condensate and Feedwater System after determination of unisolable rupture.
	BOP	Observes HPCS has tripped on initiation and reports failure to SS.
	SS	Orders injection from Control Rod Drive (CRD) system with maximized flow.
	BOP	Attempts to start CRD pumps A and B following LSS actuation and observes trip on both then reports failure to the SS.

Op-Test No.: _____ Scenario No.: <u>1</u> Event No.: <u>8</u>		
Event Description: Respond to degraded high pressure injection systems and lowering Reactor level.		
Time	Position	Applicant's Actions or Behavior
	SS	Determine available high pressure injection systems and orders injection from Standby Liquid Control (SLC) from either the boron or test tank.
	SS **	Determines Reactor level continuing to lower with CRD and SLC injection and orders reduction of Reactor pressure using either Main Steam Bypass Valves or Safety Relief Valves. Pressure reduction should be sufficient to allow injection with Low Pressure Core Spray (LPCS) or Low Pressure Coolant Injection (LPCI A or B). (LPCI may be through E12-F042 or E12-F053 with Attachment 12.)
	RO **	Lowers Reactor pressure using the Main Steam Bypass Valves on the jack or lowering pressure set to the pressure band specified by the SS. (This action may be N/A if Safety Relief Valves are used.)
	BOP **	If ordered lowers RPV pressure using Safety Relief Valves to the band specified by the SS. (This action may be N/A if Main Steam Bypass Valves are used.)
	SS	Orders alignment of Systems for injection to the Reactor: LPCS LPCI A or B (may order alignment of Fire Water (Att 26) and Condensate Transfer (Att 25))
	BOP	Aligns systems for injection to the vessel and when Reactor pressure allows injection informs the SS of injection and Reactor level recovery.

Facility: **GRAND GULF NUCLEAR STATION** Scenario No.: **1** Op-Test No.: **Day 1**

Examiners: _____ Operators: _____

Objectives: To evaluate the candidates' ability to operate the facility in response to the following evolutions:

1. Shift Recirculation Pumps to fast speed.
2. *Raise Recirculation flow to 60 % core flow.*
3. Raise Reactor Power by withdrawing control rods.
4. Perform operator actions for a stuck control rod per ONEP.
5. Analyze the impact of a failure of the reference leg of instruments connected to D004A and apply Technical Specifications.
6. Initiate a reactor scram based on rising Drywell Pressure.
7. Respond to a failure of Division 1 ECCS failure to initiate.
8. With a failure of Feedwater Line in the Turbine Building and reduced injection systems maintain reactor level per the EOPs.

Initial Conditions: Reactor Power is at 34 % bringing the plant up following an outage; Reactor Recirculation pumps in Slow Speed; a single Reactor Feed Pump in single element Master Level Control;

INOPERABLE Equipment

APRM 'F' is INOP due to a failed power supply card
ESF 12 Transformer is tagged out of service for maintenance
CCW Pump 'C' is tagged out of service for pump seal replacement
RHR 'C' Pump is tagged out of service for motor oil replacement
Appropriate clearances and LCOs are written.

Turnover: Continue to bring the plant to full power per IOI-2. There are scattered thunder showers reported in the Tensas Parish area.

Scenario 1 Day 1 (Continued)

Event No.	Event Type*	10CFR55.45a	K/A	Event Description
1	N (RO)	1, 2, 4, 5, 7	202001 A4.01; A4.02; A4.04 202002 A4.07; A4.08	Shift Reactor Recirculation Pumps to Fast Speed (SOI 04-1-01-B33-1)
2	R (RO)	1, 2, 5, 6	202002 A1.08; A4.08	Raise Reactor Recirculation Flow with Flow Control Valves to 67.5 Mlbm/hr.
3	C (RO, BOP)	1, 2, 3, 5, 6	201005 A3.01; A3.02; A3.03; A4.01 201001 A4.04 2.2.2; 2.4.4; 2.4.11; 2.4.48	Withdraw control rods to increase power. (Control Rod Pull Sheet) Control Rod 32-09 is stuck, un-stick control rod per ONEP. (ONEP 05-1-02-IV-1)
4	I (RO, BOP)	3, 4	2.1.12; 2.4.45; 2.4.48 295010 AA2.02; AA2.06	Respond to a failure of the reference leg of D004A level instrument. (Tech Specs)
5		5, 6, 12	2.4.4; 2.4.49 295006 AA1.01; AA1.05; AA1.07	Initiate manual reactor scram in response to rising Drywell pressure. (05-1-02-I-1)
6	I (BOP)	3, 4, 7, 10	2.4.4 295024 EA1.0	Failure of Division 1 ECCS to automatically initiate on High Drywell Pressure
7	M (ALL)	7, 13	295031 EA1.0 203000 A3.08 241000 A4.06	Feedwater Line rupture in the Turbine Building with leakage from the reactor
8	C (BOP)	3	295031 EA1.04 209002 A2.02	HPCS pump trip on initiation
9	C (BOP)	3	295031 EA1.05 217000 A2.10; A3.02; A4.01	RCIC fails to achieve rated conditions for injection

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

Critical Tasks

- Lower reactor pressure to allow injection from low pressure systems
- Recognize failure of Division 1 to initiate and manually initiate Division 1

Facility: **GRAND GULF NUCLEAR STATION** Scenario No.: **2** Op-Test No.: **Day 1**

Examiners: _____ Operators: _____

Objectives: To evaluate the candidates' ability to operate the facility in response to the following evolutions:

1. Raise Reactor Power by withdrawing control rods.
2. Place 2nd Reactor Feed Pump on Master Level Control.
3. Respond to a failure of APRM 'B' downscale and apply appropriate Technical Specifications.
4. Respond to the report of a leak on the Hydraulic Power Unit for Reactor Feed Pump 'B'
5. Respond to the above core plate pressure instrument line rupture which causes Drywell pressure to rise.
6. Respond to ATWS with a failure of the Main Steam Bypass valves to open per EOPs.
7. Respond to a failure of Standby Liquid Control to function.

Initial Conditions: Reactor Power is at 42 % bringing the plant up following an outage; Reactor Recirculation pumps in Fast Speed; a single Reactor Feed Pump in three element Master Level Control;

INOPERABLE Equipment

APRM 'F' is INOP due to a failed power supply card

ESF 12 Transformer is tagged out of service for maintenance

CCW Pump 'C' is tagged out of service for pump seal replacement

RHR 'C' Pump is tagged out of service for motor oil replacement

Appropriate clearances and LCOs are written.

Turnover: Continue to bring the plant to full power per IOI-2. There are scattered thunder showers reported in the Tensas Parish area.

Scenario 2 Day 1 (Continued)

Event No.	Event Type*	10CFR55.45a	K/A	Event Description
1	R (RO)	1, 2, 4, 5	201005 A3.01; A3.02; A3.03; A4.01 2.2.2	Raise Reactor power using control rods to between 45 and 55% (Control Rod Pull Sheet)
2	N (RO)	2, 4, 5, 6	259001 A4.02 259002 A3.09; A4.02; A4.03	Place Reactor Feed Pump 'B' in service on Master Level Control. (SOI 04-1-01-N21-1)
3	I (RO)	3, 5	215005 A2.02 2.1.12; 2.1.33	Respond to a failure of APRM 'B' downscale and apply appropriate Technical Specifications.
4	C (RO)	3, 4, 7	295009 AA1.01 2.4.4;	Respond to a leak on the Hydraulic Power Unit For RFPT 'B'.
5	I (RO, BOP)	3, 4, 5, 6, 13	2.4.46; 2.4.47; 2.4.48 295010 AA2.02; AA2.06	Respond to failure of the Above Core Plate Pressure Detector instrument line.
6		2, 3, 4, 7	2.4.4; 2.4.49 295006 AA1.01; AA1.05; AA1.07	Initiate manual reactor scram in response to rising Drywell pressure. (05-1-02-I-1)
7	M (ALL)	6, 8, 12, 13	295037 EA1.0; EA2.0 203000 A3.08 241000 A4.06	ATWS
8	C (RO)	3, 4	295007 AA1.04 295025 EA1.03 239001 A2.06 241000A2.03	Respond to failure of the Main Steam Bypass Valves to open.
9	C (BOP)	3, 4	295037 EA1.04; EA1.10 211000 A1.0; A2.04; A3.0	Respond to failure of Standby Liquid Control to inject into the reactor.

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

Scenario 2 Day 1 (Continued)

Critical Tasks

- Inject Standby Liquid Control prior to Suppression Pool Temperature reaches 110 °F.
- Identify the need for Alternate Standby Liquid Control injection.
- Terminate and prevent injection from Feedwater and ECCS when conditions require entry into Level/Power Control.
- Commence injection into the reactor using Feedwater or RHR 'A' or 'B' through Shutdown Cooling when reactor level reaches -192".
- Insert Control Rods in response to ATWS conditions.
-

Facility: **GRAND GULF NUCLEAR STATION** Scenario No.: **2** Op-Test No.: **Day 1**

Examiners: _____ Operators: _____

Objectives: To evaluate the candidates' ability to operate the facility in response to the following evolutions:

1. Raise Reactor Power by withdrawing control rods.
2. Place 2nd Reactor Feed Pump on Master Level Control.
3. Respond to a failure of APRM 'B' downscale and apply appropriate Technical Specifications.
4. Respond to the report of a leak on the Hydraulic Power Unit for Reactor Feed Pump 'B'
5. Respond to the above core plate pressure instrument line rupture which causes Drywell pressure to rise.
6. Respond to ATWS with a failure of the Main Steam Bypass valves to open per EOPs.
7. Respond to a failure of Standby Liquid Control to function.

Initial Conditions: Reactor Power is at 43 % bringing the plant up following an outage; Reactor Recirculation pumps in Fast Speed; a single Reactor Feed Pump in three element Master Level Control;

INOPERABLE Equipment

APRM 'F' is INOP due to a failed power supply card
 ESF 12 Transformer is tagged out of service for maintenance
 CCW Pump 'C' is tagged out of service for pump seal replacement
 RHR 'C' Pump is tagged out of service for motor oil replacement
 Appropriate clearances and LCOs are written.

Turnover: Continue to bring the plant to full power per IOI-2. There are scattered thunder showers reported in the Tensas Parish area.

Event No.	Malf. No.	Event Type*	Event Description
1		R (RO)	Raise Reactor power using control rods to between 45 and 55% (Control Rod Pull Sheet)
2		N (RO)	Place Reactor Feed Pump 'B' in service on Master Level Control. (SOI 04-1-01-N21-1)
3	c51010b	I (RO)	Respond to a failure of APRM 'B' downscale and apply appropriate Technical Specifications.

Scenario 2 Day 1 (Continued)

Event No.	Malf. No.	Event Type*	Event Description
4	fw123b p680 2AC10 HPU Alarm light	C (RO)	Respond to a leak on the Hydraulic Power Unit For RFPT 'B'.
5	rr062	I (RO, BOP)	Respond to failure of the Above Core Plate Pressure Detector instrument line.
6			Initiate manual reactor scram in response to rising Drywell pressure. (05-1-02-I-1)
7	c11164 @ 25%	M (ALL)	ATWS
8	tc082a tc082b tc082c all @ 0	C (RO)	Respond to failure of the Main Steam Bypass Valves to open.
9	c41263 @ 80%	C (BOP)	Respond to failure of Standby Liquid Control to inject into the reactor.

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

Critical Tasks

- Inject Standby Liquid Control prior to Suppression Pool Temperature reaching 110 °F.
- Identify the need for Alternate Standby Liquid Control injection.
- Terminate and prevent injection from Feedwater and ECCS when conditions require entry into Level/Power Control.
- Commence injection into the reactor using Feedwater or RHR 'A' or 'B' through Shutdown Cooling when reactor level reaches -192".
- Insert Control Rods in response to ATWS conditions.

Scenario 2 Day 1 (Continued)

Crew Turnover:

Rx at 43% CTP.

The plant is raising power following an outage. Reactor Recirculation Pumps are operating in Fast Speed. The 'A' Reactor Feed Pump is operating in Single Element Master Level Control. APRM 'F' is failed due to a failed power supply card and bypassed.

ESF 12 Transformer is tagged out of service for maintenance.

CCW Pump 'C' is tagged out of service for pump seal replacement.

RHR 'C' Pump is tagged out of service for motor oil replacement.

Appropriate clearances and LCOs are written.

Continue to bring the plant to full power per IOI-2 step 5.13.

Startup Pull Sheet Step 117.

There are scattered thunderstorms reported in the Tensas Parish area.

Simulator Setup:

Start the process from a new simulator load.

Reset to IC-13.

Run BAT file setup1 and verify or perform the following:

IC:	13
OOS:	ESF Transformer 12 (Place tags on 152-1903, 1904, 1905, 1511, 1611, and 1704) CCW C Pump (Place tag on start HS) RHR C Pump (Place tag on start HS)
Active malfunctions:	tc082a @ 0 Main Steam Bypass A failure closed tc082b @ 0 Main Steam Bypass B failure closed tc082c @ 0 Main Steam Bypass C failure closed c41263 @ 80% SLC injection pipe rupture c11164 @ 25% SDV Hydraulic Block
Active overrides	FCTR Cards to NORM C51309 & C51310
Pending overrides	RFPT Gov Trouble ann P680 2A-C10 (TRG 2) HPU Alarm P680 2C (TRG 2)
Pending malfunctions:	c51010b APRM B downscale (TRG 1) fw123b RFPT overspeed trip (TRG 3) rr062 Above Core Plate Pressure Inst Line fail (TRG 4)
Pending component malfunctions:	None

SIMULATOR OPERATION Scenario 2

Once simulator is reinitialized and setup complete take the simulator out of Freeze.

Once the Crew has taken control note the simulator time.

Crew will review procedures for placing Feedwater on Master Level Control.

Cues:

If asked, report as Reactor Engineer – Core Thermal may be raised by withdrawing control rods to attain sufficient Feed flow to transfer Master Level Control.

If asked, report as Reactor Engineer – withdraw control rods per the Control Rod Pull Sheet beginning at step 117. Withdrawal of rods may be in gang or individual mode.

As the crew places the Reactor Feed Pump on Three Element Control and the second Reactor Feed Pump is service.

As the crew asks for local operations and respond as the crew informs outside areas.

One (1) Minute after the RFPT is in service, **activate TRIGGER 1.**

When APRM 'B' fails downscale and I&C is notified respond to the Control Room and verify to the SS that APRM 'B' is failed downscale and that further troubleshooting will be required.

Eight (8) Minutes after Trigger 1 is activated, **Report as the Turbine Building Operator that hydraulic fluid is spraying on the plexiglass barrier from RFPT 'B' Hydraulic Power Unit.**

One (1) Minute after report is made, **activate TRIGGER 2.**

If asked about isolability of the leak, **report the leak is on the common discharge of the main pumps.**

Five (5) Minutes after report of leak, **activate TRIGGER 3.**

Two (2) Minutes after RFPT is tripped, **activate TRIGGER 4.**

After the ATWS is detected, perform the following attachments when requested.

Attachment 18	3 minutes to DONE
Attachment 19	4 minutes to DONE
Attachment 20	5 minutes to DONE
Attachment 12	6 minutes to DONE
Attachment 8	9 minutes to DONE

Attachment 28 can not be by any remote functions just acknowledge the request.

Termination

Once Control Rods are being inserted and the Lead Evaluator concurs the scenario may be terminated.

Critical Tasks

- Inject Standby Liquid Control prior to Suppression Pool Temperature reaching 110 °F.
- Identify the need for Alternate Standby Liquid Control injection.
- Terminate and prevent injection from Feedwater and ECCS when conditions require entry into Level/Power Control.
- Commence injection into the reactor using Feedwater or RHR 'A' or 'B' through Shutdown Cooling when reactor level reaches -192".
- Insert Control Rods in response to ATWS conditions.

Op-Test No.: _____ Scenario No.: **2** Event No.: **1**Event Description: **Raise Reactor power using Control Rods from 43 % to 45 %
(Control Rod Pull Sheet)**

Time	Position	Applicant's Actions or Behavior
	SS	Conduct reactivity manipulation brief.
	RO	Withdraws control rods in individual or gang per control rod pull sheet to raise power to 45 %.
	BOP	Assists RO in Control Rod selection verification, monitors Pressure, Level, Power, and Turbine Loading.

Op-Test No.: _____ Scenario No.: <u> 2 </u> Event No.: <u> 2 </u>		
Event Description: Place Reactor Feed Pump 'B' (RFPT) in service on Master Level Control. (SOI 04-1-01-N21-1)		
Time	Position	Applicant's Actions or Behavior
	RO	Closes N21-F047B RFPT B Discharge Valve.
	RO	Raise RFPT speed and transfer through Speed Auto, Feedwater Auto, raises RFPT Discharge pressure to within 50 psig above operating RFPT pressure.
	BOP	Monitors Pressure, Level, Power, and Turbine Loading.
	RO	Slowly opens N21-F047B and monitors flow and brings RFPT B onto Master Level Control in Automatic.

Op-Test No.: _____ Scenario No.: <u>2</u> Event No.: <u>3</u>		
Event Description: Respond to a failure of APRM 'B' Downscale.		
Time	Position	Applicant's Actions or Behavior
	RO	Determines APRM 'B' is Downscale and reviews Alarm Response Instructions.
	SS	Reviews applicable Technical Specifications 3.3.1 Reactor Protection System 3.3.2 Control Rod Block Instrumentation
	BOP	Observe and report indications on APRM 'B'.
	SS	Contact I&C to investigate.

Op-Test No.: _____ Scenario No.: <u>2</u> Event No.: <u>4</u>		
Event Description: Respond to leak on Hydraulic Power Unit (HPU) for RFPT 'B'.		
Time	Position	Applicant's Actions or Behavior
	RO	Reports alarms on RFPT 'B'.
	SS	Acts on the report of leak of hydraulic fluid on HPU to order the shutdown of RFPT 'B' by either tripping the RFPT or securing it rapidly. (Either method is acceptable.)
	RO	Shuts down RFPT 'B' by the method ordered by the SS. If the RFPT is tripped responds to the Recirc FCV Runback if received.
	BOP	Monitors Pressure, Level, Power, and Turbine Loading.

Op-Test No.: _____ Scenario No.: <u>2</u> Event No.: <u>5</u>		
Event Description: Respond to a failure of the Above Core Plate Pressure tap.		
Time	Position	Applicant's Actions or Behavior
	RO	Reports and acknowledges alarms caused by the Instrument failure and reports indications to the SS.
	BOP	Reports indications and actions caused by the Instrument failure and reports indications to the SS.
	CREW	Reports indication of rising Drywell pressure. (May require followup questions to identify what instrument has failed.)
	SS	Orders a manual Scram of the Reactor due to Drywell pressure rising.
	RO	Places the Reactor Mode Switch to Shutdown or arms and depresses at least one Manual Scram Pushbutton per RPS Division (A & B).
	RO	If the Manual Scram Pushbuttons utilized confirms stable reactor pressure and places the Reactor Mode Switch in Shutdown.

Op-Test No.: _____ Scenario No.: <u>2</u> Event No.: <u>6</u>		
Event Description: ATWS		
Time	Position	Applicant's Actions or Behavior
	RO	Reports ALL Control Rods NOT fully inserted.
	SS	Enters EP-2A and EP-3.
	RO	Reports downshift of Recirc Pumps to Slow Speed.
	RO	On orders initiates ARI/RPT.
	BOP	On orders inhibits ADS.
	BOP	On orders initiates and overrides HPCS.
	BOP	Verifies initiation of Division 1 and 2 LSS and initiation of Load Shedding & Sequencing, Diesel starts, isolations, and Standby Gas operation.
	BOP	On orders overrides Low Pressure ECCS.
	RO	Realigns Condensate and Feedwater on Startup Level Control and maintains reactor level within level band specified by the SS.
	RO	When ordered by SS, attempts to set Pressure Control and identifies failure of Main Steam Bypass Valves to open, may attempt to open valves using the Jack.

	BOP	When ordered by SS, maintains pressure band using SRVs.
	SS **	Orders Standby Liquid Control initiated prior to Suppression Pool Temperature reaching 110 °F.
	BOP **	When ordered by SS, initiates Standby Liquid Control and identifies the failure of SLC to inject.
	SS **	Orders implementation of Attachment 28 for alternate Boron injection.
	BOP	When ordered by SS, restores Auxiliary Building, Containment, and Drywell isolation (Instrument Air, Plant Service Water, Drywell Chilled Water)
	SS **	Orders installation of Attachments 18, 19, and 20 of EP-2.
	SS **	Based on conditions, orders Terminate and Prevent step to lower RPV Level to reduce power.
	BOP/RO **	Terminates and prevents systems ordered by SS.
	RO **	On orders of SS, initiates flow to the RPV from Condensate / Feedwater.
	BOP/RO **	Insert Control Rods by scrambling rods and inserting rods using CRD/RCIS. CRD Drive Pressure, Instrument Air to Containment and Auxiliary Building, RPS reset

Facility: **GRAND GULF NUCLEAR STATION** Scenario No.: **3** Op-Test No.: **Day 2**

Examiners: _____ Operators: _____

Objectives: To evaluate the candidates' ability to operate the facility in response to the following evolutions:

1. Place Standby Service Water 'B' in operation *for retest following repairs.*
2. Lower Reactor Power using Reactor Recirculation Flow Control.
3. Respond to a trip of the Standby Service Water Pump 'B' and apply Technical Specifications.
4. Respond to a failure of *the Main Generator Hydrogen Temperature Controller.*
5. Respond to a steam leak in the Auxiliary Building Steam Tunnel that will not completely isolate.
6. Respond to ATWS (no challenge to Containment).
7. Respond to plant parameters per EOP-4 Secondary Containment Control.

Initial Conditions: Reactor Power is at 100 %

INOPERABLE Equipment

APRM 'F' is INOP due to a failed power supply card

ESF 12 Transformer is tagged out of service for maintenance

CCW Pump 'C' is tagged out of service for pump seal replacement

RHR 'C' Pump is tagged out of service for motor oil replacement

Appropriate clearances and LCOs are written.

Turnover: *Start Standby Service Water 'B' for a retest of ESF Room Cooler T46-B002B-B following cleaning. There are scattered thunder showers reported in the Tensas Parish area.*

Scenario 3 Day 2 (Continued)

Event No.	Event Type*	10CFR55.45a	K/A	Event Description
1	N (BOP)	4, 5, 6	2.1.30	Place Standby Service Water Pump 'B' in operation for retest following repairs. (SOI 04-1-01-P41-1)
2	R (RO)	2, 4, 5, 6	202001 A4.04 202002 A4.08 2.2.2	Lower Reactor power using Recirculation Flow Control <i>by 150 MWe</i>
3	C (BOP)	3, 4	2.4.48; 2.1.12	Respond to a trip of Standby Service Water Pump 'B' and apply Technical Specifications.
4	I (RO)	3, 4, 5	245000 A3.09; A4.11 2.1.30; 2.4.10	Respond to a failure of the <i>Main Generator Hydrogen Temperature Controller</i> .
5	M (ALL)	3, 4, 6, 13	2.4.46; 2.4.47; 2.4.48; 2.4.49 290001 A2.06; A4.04 295032 EA1.02; EA1.05	Respond to steam leak in the Auxiliary Building Steam tunnel (unisolable – failure of MSIVs to completely isolate).
6		2, 3, 4, 8	2.4.4; 2.4.49 295006 AA1.01; AA1.05; AA1.07	Initiate manual reactor scram due to Steam Leak in the Auxiliary Building. (05-1-02-I-1)
7	C (RO)	4, 6, 12, 13	295037 EA1.0; EA2.0	ATWS (three control rods stuck full out)
8	C (BOP)	3, 4, 7	259001 A2.04 217000 A1.01; A2.10	Respond to loss of Feedwater with a failure HPCS (HPCS Pump will trip on start attempt). <i>Respond to RCIC Flow Transmitter Failure.</i>

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

Critical Tasks

- Isolate the main steam lines
- Manually scram the reactor

Facility: **GRAND GULF NUCLEAR STATION** Scenario No.: **3** Op-Test No.: **Day 2**

Examiners: _____ Operators: _____

Objectives: To evaluate the candidates' ability to operate the facility in response to the following evolutions:

2. Place Standby Service Water 'B' in operation *for retest following repairs.*
1. Lower Reactor Power using Reactor Recirculation Flow Control.
4. Respond to a trip of the Standby Service Water Pump 'B' and apply Technical Specifications.
3. Respond to a failure of the *Main Generator Hydrogen Temperature Controller.*
5. Respond to a steam leak in the Auxiliary Building Steam Tunnel which will not completely isolate.
6. Respond to ATWS (no challenge to Containment).
7. Respond to plant parameters per EOP-4 Secondary Containment Control.

Initial Conditions: Reactor Power is at 100 %

INOPERABLE Equipment

APRM 'F' is INOP due to a failed power supply card
 ESF 12 Transformer is tagged out of service for maintenance
 CCW Pump 'C' is tagged out of service for pump seal replacement
 RHR 'C' Pump is tagged out of service for motor oil replacement
 Appropriate clearances and LCOs are written.

Turnover: Start Standby Service Water 'B' *for a retest of ESF Room Cooler T46-B002B-B following cleaning. There are scattered thunder showers reported in the Tensas Parish area.*

Event No.	Malf. No.	Event Type*	Event Description
1		N (BOP)	Place Standby Service Water Pump 'B' in operation <i>for retest following repairs. (SOI 04-1-01-P41-1)</i>
2		R (RO)	Lower Reactor power using Recirculation Flow Control <i>by 150 MWe</i>
3	p41148b	C (BOP)	Respond to a trip of Standby Service Water Pump 'B' and apply Technical Specifications.
4	N41107 @0%	I (RO)	Respond to a failure of <i>the Main Generator Hydrogen Temperature Regulator.</i>

Scenario 3 Day 2 (Continued)

Event No.	Malf. No.	Event Type*	Event Description
5	epatt09 ms183b ms184b ms066b @0.2%	M (ALL)	Respond to steam leak in the Auxiliary Building Steam tunnel (unisolable – failure of MSIVs to completely isolate).
6	ms067b @20%		Initiate manual reactor scram due to Steam Leak in the Auxiliary Building. (05-1-02-I-1)
7	z022022 _08_29 _12_09 _20_61	C (RO)	ATWS (three control rods stuck full out)
8	e22052 e51045	C (BOP)	Respond to loss of Feedwater with a failure HPCS (HPCS Pump will trip on start attempt). <i>Respond to RCIC Flow Transmitter Failure.</i>

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

Critical Tasks

- Manually scram the reactor
- Isolate the main steam lines

Scenario 3 Day 2 (Continued)

Crew Turnover:

Rx at 100% CTP.

ESF Room Cooler T46-B002B-B has been cleaned and engineering requires operation of Standby Service Water 'B' to check flow balancing.

APRM 'F' is failed due to a failed power supply card and bypassed.

ESF 12 Transformer is tagged out of service for maintenance.

CCW Pump 'C' is tagged out of service for pump seal replacement.

RHR 'C' Pump is tagged out of service for motor oil replacement.

Appropriate clearances and LCOs are written.

There are scattered thunderstorms reported in the Tensas Parish area.

Simulator Setup:

Start the process from a new simulator load.

Reset to IC-15.

Run BAT file setup1 and verify or perform the following:

IC: 15

OOS: ESF Transformer 12 (Place tags on 152-1903, 1904, 1905, 1511, 1611, and 1704)

CCW C Pump (Place tag on start HS)

RHR C Pump (Place tag on start HS)

Active malfunctions: **z022022_08_29** Control Rod 08-29 stuck
z022022_12_09 Control Rod 12-09 stuck
z022022_20_61 Control Rod 29-61 stuck
ms183b as-is MSIV B21-F022B failed OPEN
ms184b as-is MSIV B21-F028B failed OPEN
e22052 HPCS Pump trip on start
e51045 RCIC Flow Transmitter failure

Active overrides **epatt09** EP Attachment 9 Defeat MSIV and drains isolations

Pending overrides RFPT Gov Trouble ann P680 2A-C10 (TRG 2)
HPU Alarm P680 2C (TRG 2)

Pending malfunctions:

p41148b SSW Pump B trip (TRG 1)
n41107@ 0% Main Generator Hydrogen Temperature
Controller Failure (control valve closed) (TRG 2)
ms066b@0.2% Main Steam Line B in Aux Bldg Tunnel
(TRG 3) ramp to 20% over 2 minutes
ms067b@20% Main Steam Line B rupture ramp to 40%
over 5 minutes (TRG 4)

Pending component malfunctions:

Trigger files:

TRIGGER 1 SSW 'B' Pump Trip
TRIGGER 2 Gen Hydrogen Temperature Controller Fail
TRIGGER 3 Main Steam Line 'B' Leak
TRIGGER 4 Main Steam Line 'B' Rupture in Stm Tunnel

Place RHR C OOSVC handswitch to OOSVC.

Bypass Division 2 APRM Bypass Joystick to APRM F position.

Open Circuit Breakers 152-1903, 1904, 1905, 1511, 1611, and 1704

Place CCW pump B to STOP (to clear Standby light) then to START, stop CCW pump C.

Startup all PDS / SPDS screens. Clear any graphs and trends off of SPDS.

Setup the presently used cyclops display and verify it is functional.

Ensure the correct shutdown sequence is available at the P680 for the present IC.

Install turnover guide, red tag, and LCO paperwork as applicable.

Advance all chart recorders and ensure all pens are inking properly.

SIMULATOR OPERATION Scenario 3

Once simulator is reinitialized and setup complete take the simulator out of Freeze.

Once the Crew has taken control note the simulator time.

BOP operator will startup Standby Service Water 'B'.

After SSW 'B' is operating, Contact the SS as the System Dispatcher request the unit be reduced in power by 150 MWe to allow a fossil plant to be brought up in power for a test following repairs.

As soon as power is reduced, **activate TRIGGER 1 and 2.**

Trigger 1 is the SSW 'B' trip for the BOP operator.

Trigger 2 is the Hydrogen Temperature Controller failure for the RO.

SSW Failure

If dispatched place Division 2 Diesel Generator in Maintenance, Remote Function Action P75 ESF PWR Dist. Div I & II, **P75058_MAINT.**

If dispatched to 16AB, report the SSW 'B' Pump Breaker on 16AB has an Overcurrent Trip.

If dispatched to the SSW pump, report a strange odor around the SSW Pump.

Generator Hydrogen Temperature Controller Failure

If dispatched, report Temperature Control Valve is indicating closed locally.

If asked to open the Bypass Valve P43-F042, report the valve is open partially.

Two (2) Minutes after the Hydrogen Temperature Controller alarms are received, **activate TRIGGER 3.**

When Crew initiates Manual scram, **activate TRIGGER 4.**

Two (2) Minutes after Reactor Scram, report as Security white smoke or steam is coming out of the top of the Auxiliary Building.

If contacted, report as Health Physics there are NO abnormal radiation surveys of the Auxiliary Building.

If contacted, report as Chemistry there are NO verified leaking fuel bundles in the reactor.

TERMINATION

Once reactor pressure has lowered to < 600 psig and a system is aligned for RPV level control and the Lead Evaluator concurs the scenario may be terminated.

Critical Tasks

- Manually scram the reactor
- Isolate the main steam lines

Op-Test No.: _____ Scenario No.: 3 Event No.: 1		
Event Description: Place Standby Service Water 'B' in operation for retest following repairs. (SOI 04-1-01-P41-1)		
Time	Position	Applicant's Actions or Behavior
	BOP	Place SSW 'B' MOV Test Switch in TEST.
	BOP	Start SSW 'B' Cooling Tower Fans (Optional per SS.)
	BOP	Start SSW 'B' Pump.
	BOP	Align SSW 'B' system per SOI.
	BOP	Place SSW 'B' MOV Test Switch in NORM.

Op-Test No.: _____ Scenario No.: 3 Event No.: 2Event Description: **Lower Reactor Power using Recirculation Flow Control by 150 MWe.**

Time	Position	Applicant's Actions or Behavior
	SS	Conducts Reactivity Briefing.
	RO	Using Recirc Flow Control, slowly closes the Recirc Flow Control Valves monitoring Reactor Power, Recirc Flow, and Reactor Level.
	BOP	Monitors Pressure, Reactor Power, and Turbine Loading.

Op-Test No.: _____ Scenario No.: 3 Event No.: 3		
Event Description: Respond to a trip of Standby Service Water Pump 'B' and apply Technical Specifications.		
Time	Position	Applicant's Actions or Behavior
	BOP	Determines the SSW 'B' Pump has tripped and reviews Alarm Resonse Instruction (H13-P870-7A-A1).
	BOP or SS	Dispatches building operator to investigate SSW 'B' locally and the circuit breaker on 16AB.
	BOP or SS	Dispatches building operator to place Division 2 Diesel Generator in Maintenance.
	BOP	Coordinates with building operator to place Div 2 Diesel in Maintenance.
	SS	Reviews Technical Specifications and identifies LCO 3.7.1 and TR 3.7.1

Op-Test No.: _____ Scenario No.: <u>3</u> Event No.: <u>4</u>		
Event Description: Respond to a failure of the Main Generator Hydrogen Temperature Regulator (Valve fails closed – Hydrogen Temperature rises)		
Time	Position	Applicant's Actions or Behavior
	RO	Determines the Main Generator Hydrogen Temperature Regulator has failed and reviews Alarm Resonse Instruction (H13-P680-7A-A1).
	RO	Attempts to place Controller in manual and open valve. Determines no response from the valve.
	RO or SS	Dispatches building operator to determine the status of the Temperature Control Valve.
	SS	Order Reactor Power reduction to reduce Generator Load.
	RO	Reduces Reactor Power using Recirc Flow Control. May adjust Generator Load Demand.
	SS	May order Reactive Load reduction on the Main Generator.
	RO	If ordered, reduce the Reactive Load on the Main Generator by adjusting field excitation with the Voltage Regulator.

Op-Test No.: _____ Scenario No.: <u>3</u> Event No.: <u>5</u>		
Event Description: Respond to a Main Steam Line 'B' failure in the Auxiliary Building Steam Tunnel.		
Time	Position	Applicant's Actions or Behavior
	BOP	Responds to Main Steam Tunnel Differential Temperature High alarm and checks back panel indication on Riley Temperature indicators and reviews Alarm Response Instruction (H13-P601-19A-F3 and E3 when received).
	RO	Checks Steam Tunnel Temperature indications on PDS Computer.
	SS **	Orders manual scram of the reactor on Steam Leak.
	RO **	Places the Reactor Mode Switch to Shutdown or arms and depresses at least one Manual Scram Pushbutton per RPS
	RO	Verifies All Control Rods have fully inserted to position 00 and reports to the SS "All Rods Inserted". Identifies three (3) Control Rods have NOT fully inserted.
	RO	If the Manual Scram Pushbuttons utilized confirms stable reactor pressure and places the Reactor Mode Switch in Shutdown.
	BOP **	Upon receipt of MSL Pipe Tunnel Temperature High alarms, recognizes MSIV failure to isolate and manually isolates Group 1 valves, and informs SS.
	SS	Enters EP-2A and EP-4.

	SS	Dispatches BOP operator to check for other Secondary Containment Alarms on temperature, sump levels and radiation.
	BOP	Reports Main Steam Tunnel Temperature Alarms are the only EP-4 entry conditions. (may report temperature above 250 °F
	SS	If BOP operator has NOT already performed action on his own, should order B21-F098A, B, C, D closed.
	BOP	Closes B21-F098A, B, C, D motor operated Main Steam Isolation Valves.
	SS	May elect to lower reactor pressure by opening SRVs.
	BOP	If ordered, open SRVs to lower Reactor Pressure.
	BOP	If ordered, starts High Pressure Core Spray, recognizes failure of HPCS pump breaker.
	BOP	If ordered, starts Reactor Core Isolation Cooling, recognizes failure of Flow Transmitter.
	BOP or RO	If ordered, maximizes Control Rod Drive Flow.
	RO	Aligns Condensate System for feeding the Reactor on Startup Level Control.
	SS	May elect to inject Standby Liquid Control. (This is acceptable based on withdrawn control rods and reduced high pressure injection.)
	SS	Orders Attachments 18, 19, and 20 installed to insert remaining three control rods. (may elect to wait and send personnel to attempt local scrams of rods per Attachment 22.)
	BOP & RO	Monitor and control Reactor Pressure and Temperature as directed.

Facility: **GRAND GULF NUCLEAR STATION** Scenario No.: **4** Op-Test No.: **BACK UP 1**

Examiners: _____ Operators: _____

Objectives: To evaluate the candidates' ability to operate the facility in response to the following evolutions:

1. Raise power 5% with Recirc flow.
2. Startup one loop of Suppression Pool Cooling.
3. Implement Technical Specifications for LPCI inoperability of an RHR loop When it is running in suppression pool cooling.
4. Implement the AOP(ONEP) for a Recirc Pump trip.
5. Respond to a Seal Steam Controller failure.
6. Execute the EOPs for a Feedwater line break in the Drywell with check Valve leakage and degraded ECCS systems that requires emergency Depressurization on low reactor water level.

Initial Conditions: Rx at 95% CTP, power ascension in progress, Suppression pool temperature is somewhat elevated due to weeping SRV's.

INOPERABLE Equipment

APRM 'F' is INOP due to a failed power supply card
 ESF 12 Transformer is tagged out of service for maintenance
 CCW Pump 'C' is tagged out of service for pump seal replacement
 RHR 'C' Pump is tagged out of service for motor oil replacement
 Appropriate clearances and LCOs are written.

Turnover: Continue to bring the plant to full power per IOI-2. Place RHR 'B' in Suppression Pool Cooling. There are *scattered thunder showers* reported in the Tensas Parish area.

Event No.	Malf. No.	Event Type*	Event Description
1		N (BOP)	Startup RHR 'B' in Suppression Pool Cooling (SRO must declare LPCI 'B' Inop. (SOI 04-1-01-E12-1) (Tech Specs)
2		R (RO)	Raise Reactor power at least 5% using Recirc Flow Control.
3	rr012b	C (RO)	Respond to Recirc Pump 'B' trip. (ONEP 05-1-02-III-3)

Scenario 4 BACK UP 1 (Continued)

Event No.	Mal. No.	Event Type*	Event Description
4	MS094	I (RO)	Respond to a failure of the Seal Steam Controller. (Alarm Response Instructions)
5	fw171b b21f065b_l rr063a @ 20%	M (ALL)	Feedwater line "B" break in Drywell with check valve leakage - RO performs scram actions, attempts to isolate affected Feedwater line (valve will fail to close). - BOP recognizes that RCIC is unavailable (injects to affected Feedwater line)
6	rr040e @ 0 rr041e @ 83%	I (BOP)	Failure of Division 1 ECCS to initiate
7	e22052	C (BOP)	HPCS pump trip on initiation
8	e12050b	C (BOP)	RHR B Pump trip
9	e21186a	C (BOP)	LPCS Injection Valve failure to open

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

Critical Tasks

- Open at least five SRVs when RPV level drops to – 192 inches.
- Manually initiate RHR A to restore RPV level above -167". Pump must be running before RPV pressure drops to 100 psig.
- If RPV Flooding is required, injects with RHR A to attempt to restore RPV pressure 57 psig above containment pressure.

Scenario 4 **BACKUP** (Continued)

Crew Turnover:

Rx at 95% CTP.

SRV have been weeping. Place Suppression Pool 'B' cooling in service.

APRM 'F' is failed due to a failed power supply card and bypassed.

ESF 12 Transformer is tagged out of service for maintenance.

CCW Pump 'C' is tagged out of service for pump seal replacement.

RHR 'C' Pump is tagged out of service for motor oil replacement.

Appropriate clearances and LCOs are written.

There are scattered thunderstorms reported in the Tensas Parish area.

Simulator Setup:

Start the process from a new simulator load.

Reset to IC-15.

Run BAT file setup1 and verify or perform the following:

IC:	15
OOS:	ESF Transformer 12 (Place tags on 152-1903, 1904, 1905, 1511, 1611, and 1704) CCW C Pump (Place tag on start HS) RHR C Pump (Place tag on start HS)
Active malfunctions:	e22052 HPCS Pump trip on start e21186a LPCS Injection Valve failure to open rr040e @ 0 Failure of Division 1 Drywell Pressure B21-N094E
Active overrides	b21f065b_I Failure of B21-F065B to close
Pending overrides	None
Pending malfunctions:	rr012b Recirc Pump B trip (TRG 1) ms094 Seal Steam Controller Failure (TRG 2) fw171b@100% Feedwater B Line Rupture in Drywell (TRG 3) rr063a @ 20% Feedwater check valve leakage (Recirc Line Rupture) (TRG 3) rr041e @ 83% Reactor Level Transmitter B21-N091E (TRG 3) e12050b RHR B Pump trip (TRG 4)

Pending component malfunctions: None

Trigger files: **TRIGGER 1** Recirculation Pump 'B' Trip
TRIGGER 2 Seal Steam Controller Failure
TRIGGER 3 Feedwater rupture in Drywell
TRIGGER 4 RHR 'B' Pump Trip

Place RHR C OOSVC handswitch to OOSVC.

Bypass Division 2 APRM Bypass Joystick to APRM F position.

Open Circuit Breakers 152-1903, 1904, 1905, 1511, 1611, and 1704

Place CCW pump B to STOP (to clear Standby light) then to START, stop CCW pump C.

Lower power to 95% power and reduce Turbine Load Demand accordingly.

Place Standby Service Water 'B' in service per section 4.3 of 04-1-01-P41-1.

Startup all PDS / SPDS screens. Clear any graphs and trends off of SPDS.

Setup the presently used cyclops display and verify it is functional.

Ensure the correct startup sequence is available at the P680 for the present IC.

Install turnover guide, red tag, and LCO paperwork as applicable.

Advance all chart recorders and ensure all pens are inking properly.

SIMULATOR OPERATION

Once simulator is reinitialized and setup complete take the simulator out of Freeze.

Once the Crew has taken control note the simulator time.

BOP Operator will prepare to and place RHR 'B' in service for Suppression Pool Cooling.

Cues:

If asked, report as Auxiliary Building Operator – RHR 'B' Pump is ready for operation.

If asked, report as Outside Operator – Standby Service Water 'B' is operating supporting a chemical addition.

As RHR 'B' pump is started, CUE the SS as System Dispatcher to return power to full power operation as soon as practical.

If asked, report as Reactor Engineer – the Core is preconditioned for 100 % power operation. No ramp rate restrictions exist.

NOTE: 100 % power is essential prior to the Recirc Pump trip to prevent entering the Scram Required Region of the Power to Flow Map.

When reactor power reaches 100 %, **activate TRIGGER 1.**

If dispatched, report as Turbine Building Operator – Recirc Pump 'B' CB-5 (252-1205) has an overcurrent trip.

If dispatched, report as Electrical Supervisor – Recirc Pump 'B' has an overcurrent trip and you will require breaker 252-1205 be racked out such that further troubleshooting may take place.

Six (6) Minutes after the Recirc Pump trip, **activate TRIGGER 2.**

If requested respond as I&C Supervisor – the controller has a problem that will require more invasive troubleshooting, you will generate a CI.

Four (4) Minutes after the Seal Steam Controller Failure, **activate TRIGGER 3.**

When Division 2 LSS actuates and sheds buses, **activate TRIGGER 4** to simulate a failure of the LSS sequencing for the RHR 'B' pump.

The SS may request Attachment 12 of EP-2 be installed. (Action Page EP Attachments DONE with a 3 minute time delay.)

Note: RCIC is unavailable because it injects into the 'B' Feedwater Line.

TERMINATION

Once Reactor Water Level is being restored using RHR 'A' and the Lead Evaluator concurs the scenario may be terminated.

Critical Tasks

- Open at least five SRVs when RPV level drops to *-192 inches*.
- Manually initiate RHR A to restore RPV level above *-167"*. Pump must be running before RPV pressure drops to *100 psig*.
- If RPV Flooding is required, injects with RHR A to attempt to restore RPV pressure *57 psig* above containment pressure.

Op-Test No.: _____ Scenario No.: <u>4</u> Event No.: <u>1</u>		
Event Description: Start Residual Heat Removal Pump 'B' in Suppression Pool Cooling (SOI 04-1-01-E12-1)		
Time	Position	Applicant's Actions or Behavior
	BOP	Verifies operation of Standby Service Water 'B' through the RHR 'B' Heat Exchangers.
	BOP	Starts RHR 'B' and aligns system for Suppression Pool Cooling.
	SS	Reviews and applies Tech Specs for RHR 'B' being aligned for Suppression Pool Cooling.

Op-Test No.: _____ Scenario No.: 4 Event No.: 2		
Event Description: Raise Reactor power by 5% using Reactor Recirculation Flow Control		
Time	Position	Applicant's Actions or Behavior
	SS	Conducts shift Reactivity brief.
	RO	Using both Recirc Flow Control Valves raises total core flow while monitoring Reactor water level and Reactor power.
	BOP	Monitors Reactor power and pressure, and monitors and adjusts Main Turbine Load Demand as Reactor power rises.

Op-Test No.: _____ Scenario No.: 4 Event No.: 3Event Description: **Respond to Reactor Recirculation Pump 'B' trip.**

Time	Position	Applicant's Actions or Behavior
	RO	Respond to annunciators concerning Recirc Pump 'B' trip, and performs immediate actions of "Decrease in Recirculation System Flow Rate" ONEP 05-1-02-III-3. Closes B33-F067B Monitors for Thermal Hydraulic Instability Monitors position on Power to Flow Map and region of operation
	RO	Verifies Recirc Loop 'A' flow is < 44,600 gpm.
	BOP	Monitors Thermal Hydraulic Instability and reaction of Reactor Power.
	SS	Verifies actions per ONEP are completed, dispatches personnel to investigate the trip.
	RO	Based on operating region on the Power to Flow Map and determine subsequent actions to be taken per the ONEP.
	SS	Consults with Reactor Engineer/STA on actions to be taken with regard to insertion of control rods or raising Recirc Loop 'A' flow.
	RO	Inserts Control Rods per Control Rod Pull Sheet, as directed by the SS.

Op-Test No.: _____ Scenario No.: 4 Event No.: 4Event Description: **Respond to failure of Seal Steam Controller for the Main Turbine.**

Time	Position	Applicant's Actions or Behavior
	RO	Observes and communicates annunciators concerning Seal Steam Controller failure and refers to Alarm Response Instruction.
	RO	Takes manual control of the Seal Steam Controller and adjusts Seal Steam pressure per the Alarm Response Instructions.
	BOP	Monitors Reactor power, pressure, and level.
	SS	Contacts I & C for troubleshooting and repairs. May elect to dispatch an operator to the Seal Steam Generator Room to check the Seal Steam Regulating Valve operation.

Op-Test No.: _____ Scenario No.: <u>4</u> Event No.: <u>5</u>		
Event Description: Feedwater Rupture in the Drywell with leakage past check valves from the Reactor		
Time	Position	Applicant's Actions or Behavior
	RO	Recognizes scram on High Drywell Pressure/Low Reactor Water level and performs the immediate actions for Reactor Scram. Reports all rods fully inserted and places the Reactor Mode Switch to SHUTDOWN.
	RO	Recognizes loss of ability to feed the reactor with Condensate and Feedwater. Communicates the loss to the SS.
	SS	Enters EP-2 and EP-3, orders the BOP Operator to initiate HPCS, RCIC and inhibit ADS.
	BOP	Recognizes the failure of Division 1 to initiate and manually initiates Division 1 ECCS.
	BOP	Verifies/initiates HPCS (recognizes trip of HPCS pump)
	BOP or RO	Recognizes the trip of RHR 'B' pump
	BOP or RO	Verifies/initiates RCIC (If RO/SS determine which Feedwater Line is ruptured prevents operation of RCIC – pumps into line with break.)
	SS	Orders CRD maximized and possible initiation of SLC.
	SS	Dispatches EP Attachments to be installed Attachment 12 RHR through Shutdown Cooling Attachment 25 Condensate Transfer injection Attachment 26 Fire Water injection

	SS	Dispatches Operators, electricians to investigate problems with HPCS and RHR 'B'
	SS **	Orders alignment of RHR 'A' and LPCS for injection to the Reactor. (RHR "A" should be ordered to be aligned with the pump running and injection valve open if possible.)
	BOP or RO **	Align RHR 'A' and LPCS for injection (based on Reactor pressure failure of the LPCS Injection valve may become apparent)
	SS	Orders depressurization of the Reactor with either SRVs or Main Steam Bypass Valves to a pressure which will allow injection from RHR and LPCS.
	SS **	If Reactor Level drops below – 192 inches, orders Emergency Depressurization with 8 SRVs (at least 5 SRVs should be open)
	BOP or RO **	On orders, opens 8 SRVs using handswitches (initiation pushbuttons may be used initially, however should be followed with
	SS **	If conditions require RPV Flooding order injection to attain RPV pressure 57 psig above Containment pressure
	BOP or RO	Verifies injection to the RPV with RHR 'A'.

Facility: **GRAND GULF NUCLEAR STATION** Scenario No.: **4** Op-Test No.: **BACK UP 1**

Examiners: _____ Operators: _____

Objectives: To evaluate the candidates' ability to operate the facility in response to the following evolutions:

1. Raise power 5% with Recirc flow.
2. Startup one loop of Suppression Pool Cooling.
3. Implement Technical Specifications for LPCI inoperability of an RHR loop When it is running in suppression pool cooling.
4. Implement the AOP(ONEP) for a Recirc Pump trip.
5. Respond to a Seal Steam Controller failure.
6. Execute the EOPs for a Feedwater line break in the Drywell with check valve leakage and degraded ECCS systems that requires Emergency Depressurization on low reactor water level.

Initial Conditions: Rx at 95% CTP, power ascension in progress, Suppression pool temperature is somewhat elevated due to weeping SRV's.

INOPERABLE Equipment

APRM 'F' is INOP due to a failed power supply card
ESF 12 Transformer is tagged out of service for maintenance
CCW Pump 'C' is tagged out of service for pump seal replacement
RHR 'C' Pump is tagged out of service for motor oil replacement
Appropriate clearances and LCOs are written.

Turnover: Continue to bring the plant to full power per IOI-2. Place RHR 'B' in Suppression Pool Cooling. There *are thunder storms* reported in the Tensas Parish area.

Scenario 4 BACK UP 1 (Continued)

Event No.	Malf. No.	Event Type*	10CFR55.45a	K/A	Event Description
1		N (BOP)	4, 8	219000 A4.01; A4.02; A4.07	Startup RHR 'B' in Suppression Pool Cooling (SRO must declare LPCI 'B' Inop. (SOI 04-1-01-E12-1) (Tech Specs)
2		R (RO)	1, 2, 4, 5, 6	202001 A4.04 202002 A4.08 2.2.2	Raise Reactor power at least 5% using Recirc Flow Control.
3	RR012B	C (RO)	3, 4, 5, 6	202001 A2.03	Respond to Recirc Pump 'B' trip ONEP. (ONEP 05-1-02-III-3)
4	MS094	I (RO)	3, 4, 8	295002 AK2.11 2.1.30	Respond to a failure of the Seal Steam Controller. (Alarm Response Instructions)
5	FW171B B21F065B_I RR063A .02	M (ALL)	3, 4, 5, 6, 7, 13	295031 EA1.0 203000 A3.08 241000 A4.06	Feedwater line "B" break in Drywell with check valve leakage - RO performs scram actions, attempts to isolate affected Feedwater line (valve will fail to close). - BOP recognizes that RCIC is unavailable
6	RR040E 0 RR041E 1	I (BOP)	3, 4, 5, 7	2.4.4 295024 EA1.0	Failure of Division 1 ECCS to initiate
7	E22052	C (BOP)	3, 5	295031 EA1.04 209002 A2.02	HPCS pump trip on initiation
8	E12050B	C (BOP)	3, 5	295031 EA1.01 203000 A2.02	RHR B Pump trip
9		C (BOP)	3, 5	295031 EA1.01 203000 A2.03	LPCS Injection Valve failure to open

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

Scenario 4 BACK UP 1 (Continued)**Critical Tasks**

- Open at least five SRVs when RPV level drops to -192 inches.
- Manually initiate RHR A to restore RPV level above -167". Pump must be running before RPV pressure drops to 100 psig.
- If RPV Flooding is required, injects with RHR A to attempt to restore RPV pressure 57 psig above containment pressure.

Facility: **GRAND GULF NUCLEAR STATION** Scenario No.: **5** Op-Test No.: **BACK UP 2**

Examiners: _____ Operators: _____

Objectives: To evaluate the candidates' ability to operate the facility in response to the following evolutions:

1. Reduce power with Recirc flow
2. Respond to a Feedwater flow element failure that causes a feed pump trip.
3. Implement the AOP (ONEP) for a Feed Pump trip that places the plant in the increased operator awareness region (Region 4).
4. Reduce power by inserting control rods.
5. Respond to overcurrent trip of a load center that causes entry into several LCO's
6. Execute the EOPs to respond to a feedwater line break in the Turbine Building with failure to scram that requires emergency depressurization on low reactor water level.

Initial Conditions: Rx at 100% CTP, earthquake just occurred.

INOPERABLE Equipment

APRM 'F' is INOP due to a failed power supply card
 ESF 12 Transformer is tagged out of service for maintenance
 CCW Pump 'C' is tagged out of service for pump seal replacement
 RHR 'C' Pump is tagged out of service for motor oil replacement
 RCIC tagged due to steam leak on turbine casing
 Appropriate clearances and LCOs are written.

Turnover: Commence controlled plant shutdown (no apparent earthquake damage). There are scattered thunder showers reported in the Tensas Parish area.

Event No.	Malf. No.	Event Type*	Event Description
1		N (RO)	Discernible power reduction with recirc flow.
2	FTN21N 088B_B p680_4 a1_b_1	I (RO)	Respond to RFPT trip due to flow instrument failure (minimum flow element for 'B' RFP)

Scenario 5 **BACK UP 2** (Continued)

Event No.	Malf. No.	Event Type*	Event Description
3		R (RO)	Power reduction of >5% using control rods
4	R21142S	C (BOP)	ESF Load Center 15BA2 Trip
5	FW070A	M (ALL)	Feedwater line break in turbine building
6	C11164 @ 30%	M (ALL)	ATWS

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

Critical Tasks

- Insert control rods by scrambling and/or driving.
- Inject SLC when suppression pool temperature cannot be maintained below 110°F.
- Terminate and prevent injection from Condensate / Feedwater, RHR A, RHR B, RHR C, and LPCS when RPV level cannot be maintained above -192".
- Open at least five SRVs when when RPV level cannot be maintained above -192".
- When reactor pressure drops to MARFP, restore injection from RHR A through E12-F053A, or RHR B through E12-F053B, and restore RPV level above -192".

Scenario 5 **BACKUP** (Continued)

Crew Turnover:

Rx at 100% CTP.

An earthquake occurred on the New Madrid Fault. No plant monitors indicated any problems. The duty manager has decided to perform a normal plant shutdown for inspections.

APRM 'F' is failed due to a failed power supply card and bypassed.

ESF 12 Transformer is tagged out of service for maintenance.

CCW Pump 'C' is tagged out of service for pump seal replacement.

RHR 'C' Pump is tagged out of service for motor oil replacement.

Appropriate clearances and LCOs are written.

There are scattered thunderstorms reported in the Tensas Parish area.

Simulator Setup:

Start the process from a new simulator load.

Reset to IC-15.

Run BAT file setup1 and verify or perform the following:

IC:	15
OOS:	ESF Transformer 12 (Place tags on 152-1903, 1904, 1905, 1511, 1611, and 1704) CCW C Pump (Place tag on start HS) RHR C Pump (Place tag on start HS)
Active malfunctions:	c11164 @ 30% SDV Hydraulic Block
Active overrides	None
Pending overrides	p680_4a1_b_1 H22 P171 INFI 90 Trouble (TRG 1)
Pending malfunctions:	ftn21n088b_b Minimum Flow Element failure RFP B (TRG 1) r21142s ESF LCC 15BA2 trip (TRG 2) fw070a @ 100% Feedwater Line A rupture in Turbine Building (TRG 3)
Pending component malfunctions:	None
Trigger files:	TRIGGER 1 Feedwater Minimum Flow Element failure TRIGGER 2 Loss of LCC 15BA2 TRIGGER 3 Feedwater Rupture in Turbine Building.

Place RHR C OOSVC handswitch to OOSVC.

Bypass Division 2 APRM Bypass Joystick to APRM F position.

Open Circuit Breakers 152-1903, 1904, 1905, 1511, 1611, and 1704

Place CCW pump B to STOP (to clear Standby light) then to START, stop CCW pump C.

Startup all PDS / SPDS screens. Clear any graphs and trends off of SPDS.

Setup the presently used cyclops display and verify it is functional.

Ensure the correct startup sequence is available at the P680 for the present IC.

Install turnover guide, red tag, and LCO paperwork as applicable.

Advance all chart recorders and ensure all pens are inking properly.

SIMULATOR OPERATION Scenario 2

Once simulator is reinitialized and setup complete take the simulator out of Freeze.

Once the Crew has taken control note the simulator time.

Crew will review procedures for power reduction.

Shift Supervisor will notify the following of the plant shutdown:

Chemistry

System Dispatcher

Health Physics

Radwaste

Shift Technical Advisor/Reactor Engineering

Respond that you understand the plant is shutting down.

If asked, respond as Reactor Engineer to begin at step 1 of the Shutdown Sequence Pull Sheet when core flow is 67.5 Mlbm/hr.

When dispatched to open N35-F015A & B on the Turbine Deck, respond as Turbine Building Operator N35-F035A & B are open. (There are no console actions for this.)

Crew will begin power reduction. When Lead Evaluator or reactor power is < 97 % power (whichever comes first), **activate TRIGGER 1.**

If dispatched to H22-P171, report Turbine Building Operator the Minimum Flow Controller for RFPT 'B' is in automatic and the N21-F503B is indicating full open.

The RFPT 'B' will trip resulting in a Recirc Flow Control Valve Runback, Power to Flow should still be in a region to allow continued operation. The Crew should reset the Runback and adjust core flow to allow continued plant shutdown.

If asked, respond as Reactor Engineer to insert control rods to move reactor power out of any undesired regions. Stress to the crew control rods need to be inserted prior to any Condensate or Feedwater evolutions.

After first two gangs of Control Rods are fully inserted and power has dropped by 5 % or Lead Evaluator cue, **activate TRIGGER 2.**

Loss of LCC 15BA2 – See attached Load List from 04-1-01-R21-15 for 15BA2, 15B21 and 15P21.

If dispatched, report as Auxiliary Building Operator the feeder breaker for LCC 15BA2 has an overcurrent trip and will NOT reset.

If dispatched, report as Electrical Supervisor that a spare breaker should be racked out and tested and the trip setpoints adjusted to replace the LCC Feeder Breaker.

Ten (10) Minutes after loss of LCC 15BA2 or on Lead Evaluator cue, **activate TRIGGER 3**

Condensate and Feedwater are lost.
Standby Liquid Control Pump 'A' is lost.

After the ATWS is detected, perform the following attachments when requested.

Attachment 18	3 minutes to DONE
Attachment 19	4 minutes to DONE
Attachment 20	5 minutes to DONE
Attachment 12	6 minutes to DONE
Attachment 8	9 minutes to DONE

Attachment 28 can not be by any remote functions just acknowledge the request.

Termination

Once Control Rods are being inserted and the Lead Evaluator concurs the scenario may be terminated.

Critical Tasks

- Insert control rods by scrambling and/or driving.
- Inject SLC when suppression pool temperature cannot be maintained below 110°F.
- Terminate and prevent injection from Condensate / Feedwater, RHR A, RHR B, RHR C, and LPCS when RPV level cannot be maintained above -192".
- Open at least five SRVs when when RPV level cannot be maintained above -192".
- When reactor pressure drops to MARFP, restore injection from RHR A through E12-F053A, or RHR B through E12-F053B, and restore RPV level above -192".

Op-Test No.: _____ Scenario No.: **5** Event No.: **1**Event Description: **Reduce Reactor power using Recirculation Flow Control**

Time	Position	Applicant's Actions or Behavior
	SS	Conduct reactivity manipulation brief.
	RO	Reduces Total Core Flow by throttling closed on the Recirc Flow Control Valves.
	BOP	Monitors Pressure, Level, Power, and Turbine Loading.

Op-Test No.: _____ Scenario No.: <u>5</u> Event No.: <u>2</u>		
Event Description: Respond to the Reactor Feed Pump Turbine 'B' Minimum Flow Valve Failure and trip.		
Time	Position	Applicant's Actions or Behavior
	RO	Recognizes opening of RFPT Min Flow Valve and subsequent trip of RFPT 'B'; observes the Recirc Flow Control Valve Runback due to the loss of RFPT and Low Reactor Water Level and Recirc Pumps in Fast Speed.
	RO	Plots Total Core Flow and Reactor Power on the Power to Flow Map to determine core stability.
	BOP	Monitors Pressure, Level, Power, and the core for Thermal Hydraulic Instability.
	SS	Verifies actions per "Decrease in Recirculation System Flow Rate ONEP 05-1-02-III-3.
	SS	Consults with Reactor Engineer on actions to be taken raise Core Flow or insert Control Rods to attain a more stable configuration.
	RO	If directed, resets Recirc Flow Control Valve Runback.

Op-Test No.: _____ Scenario No.: <u>5</u> Event No.: <u>3</u>		
Event Description: Reduce Reactor power using by inserting Control Rods (Control Rod Shutdown Sequence Pull Sheet)		
Time	Position	Applicant's Actions or Behavior
	SS	Conduct reactivity manipulation brief. (optional)
	RO	Inserts control rods in individual or gang per control rod pull sheet to lower reactor power.
	BOP	Assists RO in Control Rod selection verification, monitors Pressure, Level, Power, and Turbine Loading.

Op-Test No.: _____ Scenario No.: <u>5</u> Event No.: <u>4</u>		
Event Description: Respond to loss of Load Control Center 15BA2		
Time	Position	Applicant's Actions or Behavior
	BOP	Determines and reports that LCC 15BA2 has tripped.
	SS	Dispatches an operator and electricians to investigate loss of 15BA2.
	SS	Obtains SOI 04-1-01-R21-15 for load list for LCC 15BA2 and directs operators to review panels to determine equipment lost.
	BOP	Obtains Alarm Response Instruction for LCC 15BA2.
	SS	Reviews Technical Specifications for Equipment lost. (multiple Tech Specs See attached load list)

Op-Test No.: _____ Scenario No.: **5** Event No.: **5**
 Event Description: **Feedwater Break in the Turbine Building**

Time	Position	Applicant's Actions or Behavior
	RO	Responds to annunciators and Reactor Scram and loss of Reactor Level.
	RO	Reports rupture of Feedwater in the Turbine Building and is unisolable.
	RO	Trips running Condensate, Condensate Booster, Reactor Feed and Heater Drain Pumps.

Op-Test No.: _____ Scenario No.: 5 Event No.: 6Event Description: **ATWS**

Time	Position	Applicant's Actions or Behavior
	RO	Reports ALL Control Rods NOT fully inserted.
	RO	Places Reactor Mode Switch in SHUTDOWN.
	SS	Enters EP-2A and EP-3.
	RO	Reports downshift of Recirc Pumps to Slow Speed.
	RO	On orders initiates ARI/RPT.
	BOP	On orders inhibits ADS.
	BOP	On orders initiates and overrides HPCS.
	BOP	Initiates RCIC for level control if it has not initiated automatically.
	SS	Orders CRD Flow Maximized.
	BOP or RO	Maximizes CRD Flow to the Reactor.

	RO	When ordered by SS, attempts to set Pressure Control to close any cycling SRVs.
	BOP	When ordered by SS, maintains pressure band using SRVs.
	SS **	Orders injection of Standby Liquid Control prior to 110 °F Suppression Pool Temperature.
	BOP **	When ordered by SS, initiates Standby Liquid Control and identifies the failure of SLC to inject.
	SS **	Orders implementation of Attachment 28 for alternate Boron injection.
	BOP **	When ordered by SS, restores Auxiliary Building, Containment, and Drywell isolation (Instrument Air, Plant Service Water, Drywell Chilled Water)
	SS **	Orders installation of Attachments 12, 18, 19, and 20 of EP-2.
	SS **	Based on conditions, orders Terminate and Prevent step to lower RPV Level to reduce power/ preparation for Emergency Depressurization.
	BOP/RO **	Terminates and prevents systems ordered by SS.
	SS **	Orders Emergency Depressurization by opening 8 ADS Valves.
	BOP or RO **	Opens 8 ADS SRVs using handswitches (may manually initiate ADS with pushbuttons and follow with handswitches, this is acceptable.)
	RO **	On orders of SS, initiates flow to the RPV from RHR 'A' and /or 'B' through Shutdown Cooling if possible.
	BOP/RO **	Insert Control Rods by scrambling rods and inserting rods using CRD/RCIS. CRD Drive Pressure, Instrument Air to Containment and Auxiliary Building, RPS reset

Facility: **GRAND GULF NUCLEAR STATION** Scenario No.: **5** Op-Test No.: **BACK UP 2**

Examiners: _____ Operators: _____

Objectives: To evaluate the candidates' ability to operate the facility in response to the following evolutions:

1. Reduce power with Recirc flow
2. Respond to a Feedwater flow element failure that causes a feed pump trip.
3. Implement the AOP (ONEP) for a Feed Pump trip that places the plant in the immediate exit required region of the power-flow map.
4. Reduce power by inserting control rods.
5. Respond to overcurrent trip of a load center that causes entry into several LCO's
6. Execute the EOPs to respond to a feedwater line break in the Turbine Building with failure to scram that requires emergency depressurization on low reactor water level.

Initial Conditions: Rx at 100% CTP, earthquake just occurred.

INOPERABLE Equipment

APRM 'F' is INOP due to a failed power supply card
ESF 12 Transformer is tagged out of service for maintenance
CCW Pump 'C' is tagged out of service for pump seal replacement
RHR 'C' Pump is tagged out of service for motor oil replacement
RCIC tagged due to steam leak on turbine casing
Appropriate clearances and LCOs are written.

Turnover: Commence controlled plant shutdown (no apparent earthquake damage). There are scattered thunder showers reported in the Tensas Parish area.

Scenario 5 BACK UP 2 (Continued)

Event No.	Event Type*	10CFR55.45a	K/A	Event Description
1	N (RO)	2, 4, 5, 6	202001 A4.04 202002 A4.08 2.2.2	Discernible power reduction with recirc flow.
2	I (RO)	3, 4, 5, 6, 7	259001 A3.10 295001 AA1.01; AA1.05; AA2.01	Respond to RFPT trip due to flow instrument failure (minimum flow element for 'B' RFP)
3	R (RO)	2, 4, 5, 6	201005 A3.01; A3.02; A3.03; A4.01 2.2.2	Power reduction of >5% using control rods
4	C (BOP)	3, 4, 8, 13	295003 AK2.04; AA1.01 2.1.31; 2.4.10; 2.4.48	ESF Load Center 15BA2 Trip
5	M (ALL)	7, 13	295031 EA1.0 203000 A3.08 241000 A4.06	Feedwater line break in turbine building
6	M (ALL)	6, 8, 12, 13	295037 EA1.0; EA2.0 203000 A3.08 241000 A4.06	ATWS

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

Critical Tasks

- Insert control rods by scrambling and/or driving.
- Inject SLC when suppression pool temperature cannot be maintained below 110°F.
- Terminate and prevent injection from Condensate / Feedwater, RHR A, RHR B, RHR C, and LPCS when RPV level cannot be maintained above -192".
- Open at least five SRVs when RPV level cannot be maintained above -192".
- When reactor pressure drops to MARFP, restore injection from RHR A through E12-F053A, or RHR B through E12-F053B, and restore RPV level above -192".