Byron
June 2000 Examination

Validation Week Changes to the Operating Tests

Byron
June 2000 Examination

NRC-Developed Admin JPMs

Validation Week Changes

Facility: BYRON

Task No: _____

Task Title: SDM CALCULATION

Job Performance Measure No: A. 1.1

K/A Reference: 1A4.11 3.5/4.1

Examinee: _____

NRC Examiner: _____

Date: _____

Method of testing:

Simulated Performance _____X_____ Actual Performance _____

Classroom _____X_____ Simulator _____ Plant _____

READ TO THE EXAMINEE

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:
You are an extra person on shift
Unit 1 is shutdown, in mode 3
RCS AVG TEMP 540F, core avg burnup 397.4 EFPH
RCS Boron Conc 1046 ppm
All controls rods are operable X

Task Standard: SDM CALCULATION

Required Materials: COLR
1BOSR 1.1.1-1
1BGP 100-7T1
BCB-1
1BOSR NR-1

General References: COLR
1BOSR 1.1.1-1
1BGP 100-7T1
BCB-1
1BOSR NR

Initiating Cue: UNIT 1 SRO DIRECTS YOU TO PERFORM A SDM SURVEILLANCE IAW 1BOSR 1.1.1-1. This is not the first performance of this surveillance following entry into mode 3.

Time Critical Task: NO

Validation Time: 30 minutes

PERFORMANCE INFORMATION

START TIME: _____

(Denote critical steps with a **BOLD** *)

Performance step: 1

ENTER 1BOSR 1.1.1-1

Standard: LOCATE AND OPEN 1BOSR 1.1.1-1

CUE: HAND Applicant BLANK 1BOSR 1.1.1-1 And ASSOCIATED BCB pages

Comment: ----------

Performance step: 2

*** ENTER PRESENT CONDITIONS FROM TURNOVER AND COLR ***

NOTE: SEE ATTACHED SDM SHEET FOR CORRECT ANSWERS

Standard: *PRESENT CONDITIONS ENTERED * F.1.f (SDM from COLR) -1300 pcm is given.

~~CUE: CORE AVERAGE BURNUP 397.4. DATA WILL BE GIVEN FROM 1BGP 100-ZT1~~
COLR REQUIRED SDM -1300 pcm

Comment: ----------

Performance step: 3

POST RX TRIP ASSESSMENT

Standard: POST RX TRIP ASSESSMENT ENTERED

This was placed in initial conditions. (Due to ~~group~~ classroom performance of JPM)

CUE: THIS SURVEILLANCE INSTRUCTION IS NOT THE FIRST SDM PERFORMANCE IN MODE 3

Comment: ----------

Performance step: 4

BOUNDING ASSUMPTIONS

Standard: BOUNDING ASSUMPTIONS ENTERED

CUE: LIMITS TEMP 520 TO 557F, TIME IS 10 HOURS FROM NOW

NOTE: SEE ATTACHED SDM CALCULATIONS FOR FURTHER DATA AND ANSWERS

Comment: ----------

Performance step: 5

*** ENTER MINIMUM BORON CONCENTRATION ***

Standard: *** MINIMUM BORON CONCENTRATION ENTERED ***

Comment: ----------

Performance step: 6

*** ENTER REACTIVITY WORTH OF BORON ***

Standard: *** REACTIVITY WORTH OF BORON ENTERED ***

Comment: ----------

Performance step: 7

ENTER REACTIVITY WORTH OF UNTRIPPABLE RODS

Standard: REACTIVITY WORTH OF UNTRIPPABLE RODS ENTERED

Comment: ----------

Performance step: 8

*** ENTER REACTIVITY CHANGE DUE TO XENON ***

Standard: *** REACTIVITY CHANGE DUE TO XENON ENTERED ***

CUE: WHEN ASKED XENON EQUIVALENT POWER IS 99.9%

Comment: ----------

Performance step: 9

ENTER REACTIVITY WORTH OF SAMARIUM

Standard: REACTIVITY CHANGE DUE TO SAMARIUM ENTERED

Comment: ----------

Performance step: 10

*** ENTER CORRECTIONS FOR BORON EFFECTS ON XENON AND SAMARIUM ***

Standard:***CORRECTIONS FOR BORON EFFECTS ON XENON AND SAMARIUM ENTERED***

Comment: ----------

Performance step: 11

*** ENTER TOTAL SDM ***

Standard: *** TOTAL SDM ENTERED ***

Comment: ----------

TERMINATING CUE: SRO I HAVE COMPLETED 1BOSR 1.1.1-1

TIME STOP_____

Facility: BYRON

Task No: _____

Task Title: SHIFT TURNOVER

Job Performance Measure No: A.1.2

K/A Reference: 2.1.3 3.0/3.4

Examinee: _____

NRC Examiner: _____

Date: _____

Method of testing:

Simulated Performance _____X_____

Actual Performance _____

Classroom _____

Simulator _____x_____

Plant _____

READ TO THE EXAMINEE

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions
You are the relieving Unit SRO/RO
You stood watch yesterday
Unit 1 is in mode 1
All controls are in automatic

Task Standard: PERFORM A SHIFT TURNOVER

Required Materials: BAP 300-1T9
OP-AA-101-401

General References: BAP 300-1T9
OP-AA-101-401

Initiating Cue: PERFORM A COMPLETE SHIFT TURNOVER OF YOUR APPROPRIATE WATCH STATION, INCLUDING LOG REVIEW . THE BOARD WALK DOWN THAT YOU PERFORM WILL BE ONLY ON PANELS 1PM05J, 6J. YOU WILL BE GIVEN 15 MINUTES FOR THE WALK DOWN. WHEN YOU ARE FINISHED WE WILL DISCUSS ANY DISCREPANCIES OR PROBLEMS NOTED.

Time Critical Task: NO

Validation Time: 20 MINUTES

PERFORMANCE INFORMATION

START TIME: _____

(Denote critical steps with a **BOLD** *)

Performance step: 1

ENTER BAP 300-1T9

Standard: LOCATE AND OPEN BAP 300-1T9 RO BAP 300-1T5 SRO

CUE: HAND BAP 300-1T9 TURNOVER SHEET TO APPLICANT

Comment: ----------

Performance step: 2

REVIEW THE APPLICABLE UNIT LOGS SINCE THE LAST WATCH STOOD (YESTERDAY)

Standard: UNIT LOGS REVIEWED

NOTE: THE CREW LOGS MUST BE REVIEWED ALONG WITH ANY REVIEWS REQUIRED BY ATTACHED TURNOVER SHEET

Comment: ----------

Performance step: 3

*** TOUR THE MAIN CONTROL ROOM/ WALK DOWN THE BOARDS ***

Standard: *** CONTROL ROOM BOARDS WALKED DOWN AND 5 ERRORS FOUND RO'S WILL ADVISE OF TECH SPECS, SRO'S WILL EVALUATE TECH SPECS ***
AND EP MATRIX

ANSWER: THE FOLLOWING 5 ITEMS ARE WRONG

ACCUMULATOR #1 PRESSURE 500 PSIG
1 HOUR T.S. 3.5.1 RESTORE ACCUMULATOR PRESSURE ≥ 602 PSIG

ANNUNCIATOR SYSTEM IS BROKEN, LIGHTS AND HORN
EVALUATE POTENTIAL EP MS6 MATRIX → NONE
ALARM PRINTER STILL OPERATES

CONTROL RODS 18 STEPS OUT OF ALIGNMENT FOR A1
1 HOUR T.S. 3.1.4 SDM VERIFY, > 12 STEPS OUT

RHR CROSS CONNECT VALVE IS SHUT 1RH 8716B
T.S. 3.0.3 7 HOURS MODE 3

RWST LEVEL 70%
1 HOUR T.S. 3.5.4 VERIFY WATER SOURCE, RWST ≥ 89%.

NOTE: THE SAFETY SIGNIFICANCE AND TECH SPEC ISSUE OF THE PROBLEMS MUST BE DISCUSSED BY RO'S AND ANALYZED BY SRO'S TO RECEIVE FULL CREDIT FOR EACH FAULT THAT IS IDENTIFIED. 4 OUT 0F 5 FAULTS MUST BE FOUND TO PASS

Comment: ----------

Performance step: 4

COMPLETE TURNOVER

Standard: REFUSE TO TAKE THE TURNOVER UNTIL ITEMS ARE FIXED OR ADDRESSED

Comment: ----------

TERMINATING CUE: TO RELIEF I REFUSE TO TAKE THE WATCH UNTIL THE ITEMS ARE FIXED

TIME STOP_____

Facility: BYRON

Task No: _____

Task Title: TAGOUT

Job Performance Measure No: A.2

K/A Reference: 2.2.13 3.6/3.8

Examinee: _____

NRC Examiner: _____

Date: _____

Method of testing:

Simulated Performance _____X_____ Actual Performance _____

Classroom _____X_____ Simulator _____ Plant _____

READ TO THE EXAMINEE

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions: You are an extra SRO/RO on shift
Unit 1 is in mode 1
All controls are in automatic
Maintenance will be performed on the 1B CS pump

Task Standard: REVIEW AND APPROVE A TAGOUT

Required Materials: BAP 300-1T9
OP-AA-101-401

General References: BAP 300-1T9
OP-AA-101-401

Initiating Cue: THE SM DIRECTS YOU TO REVIEW AND APPROVE A PREVIOUSLY GENERATED OOS ON THE UNIT 1 1B CONTAINMENT SPRAY PUMP FOR UPCOMING MAINTENANCE ON THE NEXT SHIFT

Critical Task: NO

Validation Time: 25 MINUTES

PERFORMANCE INFORMATION

START TIME: _____

(Denote critical steps with a **BOLD** *)

Performance step: 1

ENTER BAP 330-1

Standard: LOCATE AND OPEN BAP 330-1

Comment: ----------

Performance step: 2

REVIEW THE APPLICABLE PORTION OF BAP 330-1

Standard: BAP 330-1 REVIEWED

Comment: ----------

Performance step: 3

*** REVIEW THE CLEARANCE ***

Standard: *** CLEARANCE REVIEWED AND 5 ERRORS FOUND ***

ANSWER: FOLLOWING 5 ITEMS ARE WRONG

1HS-CS002 IS LOCATED IN ~~1PM06J AND NOT~~ BUS 142 (1PM06J)
1CS01PB FU ~~TAG~~ (ISSUING) MISSING 1AP06E-H-FU-14 (SHOULD BE included)
1AP06E-H LISTED AS CS PP 1A BRKR (1B)
1CS001B CS PP RWST SUCT VALVE LEFT OPEN (closed)
1CS016B 1B CS PP HDR DRN VLV LISTED HANG 001 (006)

NOTE: 4 OUT OF THE 5 FAULTS MUST BE FOUND TO PASS

Comment: ----------

Performance step: 4

CORRECT CLEARANCE

Standard: 5 ERRORS Found and CORRECTED ON CLEARANCE

Comment: ----------

TERMINATING CUE: SM I HAVE REVIEWED THE CLEARANCE AND FOUND 5 ERRORS AND THE CORRECTIONS HAVE BEEN MADE

TIME STOP_____

Facility: BYRON

Task No: _____

Task Title: CNMT ENTRY

Job Performance Measure No: A. 3

K/A Reference: 2.3.2, 2.3.4, 2.3.10 2.5/2.5/2.9

Examinee: _____

NRC Examiner: _____

Date: _____

Method of testing:

Simulated Performance _____X_____

Actual Performance _____

Classroom _____

Simulator _____

Plant ___X___

READ TO THE EXAMINEE

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:
You are an extra RO on shift
Unit 1 is in mode 1, RX power stable at 100% for last 6 hours
All controls are in automatic

Task Standard: CNMT ENTRY

NOTE: SEE ATTACHED had to write new JPM DUE TO Procedure Revision ISSUE

Required Materials:
BAP 1450-T2
1BVSR 6.2.1-2
RP-AA-460
BAP 1450-8
BAP 1450-1
BAP 1450-1T1
1BOSR Z.5.b.1-1

General References:
BAP 1450-T2
1BVSR 6.2.1-2
RP-AA-460
BAP 1450-8
BAP 1450-1
BAP 1450-1T1
1BOSR Z.5.b.1-1

Trained on new one but not yet PORC'd so could not Do.

Initiating Cue: UNIT 1 SRO DIRECTS YOU TO MAKE A CONTAINMENT ENTRY AT POWER, THROUGH THE NORMAL AIR LOCK ON UNIT 1. THE ENTRY IS BEING PERFORMED TO INVESTIGATE A POTENTIAL LEAK WITH THE INCORE PROBES. THE ENTRY WILL LAST 15 MINUTES. YOU WILL BE GOING IN WITH A RAD TECH.

Time Critical Task: NO

Validation Time:

Facility: BYRON

Task No: _____

Task Title: GASEOUS RELEASE

Job Performance Measure No: A.3

K/A Reference: 2.3.6 3.1

Examinee: _____

NRC Examiner: _____

Date: _____

Method of testing:

Simulated Performance _____X_____ Actual Performance _____

Classroom _____ Simulator _____X_____ Plant _____

READ TO THE EXAMINEE

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions: You are the Unit SRO
Unit 1 is in mode 1
All controls are in automatic, 1PB111 IS OOS

Task Standard: AUTHORIZE A GASEOUS EFFLUENT RELEASE

Required Materials: BCP 400-TCNMT/ROUTINE
CNMT NOBLE GAS ACTIVITY - RADIOCHEMISTRY ANALYSIS
CNMT TRITIUM ACTIVITY - RADIOCHEMISTRY ANALYSIS

General References:
BCP 400 - TCNMT/ROUTINE

Initiating Cue: THE SM DIRECTS YOU THE UNIT SUPERVISOR TO AUTHORIZE A GASEOUS EFFLUENT RELEASE FROM UNIT 1 CONTAINMENT

Time Critical Task: NO

Validation Time: 15 minutes

Significant changes made due to procedure revision and mis. interpretation of procedure.

PERFORMANCE INFORMATION

START TIME: _____

(Denote critical steps with a **BOLD** *)

Performance step: 1

ENTER BCP 400-TCNMT AT STEP C.1 CHANNEL CHECK ON 1RE-PROI

Standard: ~~LOCATE AND OPEN BCP 400-TCNMT, OBTAIN RELEASE NUMBER EXPIRATION TIME/DATE~~ STEP C.1 CHANNEL CHECK OF 1RE-PROI COMPLETED
Hand applicant BCP 400-TCNMT

CUE: WHEN ASKED ~~RELEASE NUMBER IS 00094, EXPIRATION TIME 0900 NEXT DAY~~
DAILY CHANNEL CHECK ON 1RE-PROI WAS PERFORMED SATISFACTORILY DURING 1BOSR 0.1-0.

Comment: ----------

NOTE: SRO will perform STEP C NO 0 EXCEPT for C.1.b which is performance STEP 2 Below

Performance step: 2

Perform 1BOSR 11.5.5-1 1PROIS Source/channel check

~~OBTAIN RADIOCHEMISTRY ANALYSES FOR CNMT NOBLE GAS AND TRITIUM ACTIVITY~~

Standard: ~~OBTAIN ANALYSES SHEETS~~ Inform NSO to perform 1BOSR 11.5.5-1 1PROIS Source/channel check

CUE: WHEN ASKED ~~GIVE THE CNMT NOBLE GAS AND TRITIUM ACTIVITY SHEETS FROM RADIOCHEMISTRY~~ All applicant that NSO will be performing 1BOSR 11.5.5-1 1PROIS Source/channel

Comment: ----------

NOTE: REFER TO ~~ATTACHED~~ MASTER KEY RELEASE FORMS FOR ~~FURTHER~~ ANSWERS TO BE filled out BY SRO

Performance step: 3

*** DETERMINE RELEASE RATES ***

Standard: *** RELEASE RATES WRITTEN IN ***

Comment: ----------

Performance step: 4

*** DETERMINE MONITOR SETPOINTS AND RELEASE SUMMARY INFORMATION ***

Standard: *** MONITOR SETPOINTS AND RELEASE SUMMARY INFORMATION WRITTEN IN***

CUE: WHEN ASKED 1PB101 IS READING 2.88 X 10-6
WHEN ASKED SIGN FOR RP SUPERVISION

NOTE: INITIAL CONDITIONS 1PB111 WAS OOS

Comment: ----------

Performance step: 5

*** MONITOR CHECKS ***

Standard: * **MONITOR CHECKS COMPLETE ***

CUE: WHEN ASKED CHANNEL CHECK ON 1 RE-PR001 COMPLETE
1PR01J SOURCE/CHANNEL CHECK COMPLETE

Comment: ----------

Performance step: ~~6~~ 3

*** RECORD 1PB101 DATA ***

Standard: * **1PB101 AS FOUND HIGH SETPOINT AND LOW SETPOINT DATA RECORDED ***

ACTUAL DATA HIGH _____ LOW_____

CUE: AFTER APPLICANT HAS FOUND DATA FOR 1PB101ON GRID 2 HAVE THEM
RECORD THE FOLLOWING AS THE DATA HIGH IS 4.83 E-4 UCI/CC AND
LOW IS 2.42 E-4 UCI/CC

NOTE: MAKE APPLICANT SHOW THAT THE SETPOINT CAN BE FOUND ON GRID 2

Comment: ----------

Performance step: ~~4~~ 4

*** VERIFY FAN RUNNING *** NOT CRITICAL

Standard: * **OB AUX BLDG EXHAUST FAN IS RUNNING** * NOT CRITICAL

~~CUE: WHEN ASKED OB AUX BLDG EXHAUST FAN IS RUNNING~~

Comment: ----------

Performance step: ~~8~~ 5

~~* AUTHORIZE RELEASE *~~ * PLACE PLACARD "GASEOUS RELEASE IN PROGRESS" SOMEWHERE ON OPR021 THAT IS VISIBLE *

Standard: ~~* RELEASE AUTHORIZED *~~ * PLACARD PLACED ON OPR025 *

~~CUE: WHEN ASKED 1BOSR 11.B.5-1 WAS COMPLETED AND REVIEWED~~
CUE: WHEN ASKED FOR PLACARD INFORM APPLICANT THAT YOU HAVE DONE.

Comment: ----------

NOTE! THE PLACARD PLACEMENT WILL BE SIMULATED

~~TERMINATING CUE: SM I HAVE APPROVED THE GAS RELEASE~~

TIME STOP _____

Performance Step 6
* REVIEW 1BOSR 11.6.5-1 1PR015 SOURCE/CHANNEL CHECK *
Standard * 1BOSR 11.6.5-1 ~~1PR015 SOURCE~~ REVIEW IS UNACCEPTABLE / RELEASE NOT AUTHORIZED. *
CUE: HAND APPLICANT THE COMPLETED 1BOSR 11.6.5-1 1PR015 SOURCE/CHANNEL CHECK
NOTE: NO COVER SHEET ATTACHED
NOTE: COMPLETED 1BOSR 11.6.5-1 SOURCE/CHANNEL CHECK ATTACHED.
NOTE: APPLICANT WILL FIND ON STEP 1 WRONG RELEASE # 00090 INSTEAD OF PROPER RELEASE NUMBER OF 00094 STEP 8 THE CURSOR COLOR FOR 1PA201 WILL BE DARK BLUE WHICH IS UNACCEPTABLE PER ACCEPTANCE CRITERIA.

Performance Step 7
* INFORM SM TO INITIATE LCOAR OBOL 11.6 RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION *
Standard * SM INFORMED OF LCOAR OBOL 11.6 *
CUE WHEN ASKED SM WILL INITIATE LCOAR OBOL 11.6
TERMINATING CUE: SM I WILL NOT AUTHORIZE THE GAS RELEASE DUE TO 1BOSR 11.6.5-1

TIME STOP

Facility: BYRON Task No: _____

Task Title: COMMUNICATION OF NARS FORM Job Performance Measure No: A.4

K/A Reference: 2.4.43 2.8

Examinee: _____ NRC Examiner: _____

Date: _____

Method of testing:

Simulated Performance _____ Actual Performance ____X_____

Classroom _____ Simulator _____X_____ Plant _____

READ TO THE EXAMINEE

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions: You are an extra RO. There has been an General Emergency event classification. The Unit SRO has directed you to make all appropriate communications/transmittals of the NARS form.

Task Standard: Emergency Communications

Required Materials: BZP 200-A1, BZP 200-1, BZP 300-A2, BZP 310-2T1, BZP 310-2

General References:
BZP 200-A1
BZP 300-A2
BZP 310-2T1
BZP 310-2

Initiating Cue: SHIFT MANAGER/EMERGENCY DIRECTOR DIRECTS YOU TO PERFORM THE COMMUNICATION/TRANSMITTAL OF THE NARS FORM AND PROVIDE THE REQUIRED INFORMATION. YOU ARE TO PERFORM STEP 3 o-r AND STEP 4a-g OF BZP 310-2, ALSO FILL OUT THE APPLICABLE SECTIONS OF BZP 310-2T1.

Time Critical Task: 15 minutes to complete

Validation Time: 10 MINUTES

PERFORMANCE INFORMATION

START TIME: _____ *Examiner, fill out step H, Accident Classified, using today's date + start time of 1PM.

(Denote critical steps with a **BOLD** *)

Performance step: 1

ENTER BZP 310-2

Standard: LOCATE AND OPEN BZP 310-2

CUE: GIVE APPLICANT PARTIALLY COMPLETED BZP 310-2T1 FORM

Comment: ----------

Performance step: 2

*** CONTACT THE AGENCIES IAW STEP 4 a ***

Perf Step 3

Standard: *** THE FOLLOWING AGENCIES WERE CONTACTED IN ORDER IEMA, IDNS, THEN ELECTRIC OPERATIONS USING OUTSIDE TELEPHONE NUMBERS ***

~~NOTE: THE APPLICANT WILL DIAL CODE 37 FOR CALL SINCE GENERAL EMERGENCY~~

CUE: ~~WHEN APLLICANT DIALS THE NARS PHONE IS INOPERABLE~~
WHEN ASKED ANSWER CALL AS IEMA, IDNS, AND ELECTRIC OPERATIONS

~~NOTE: OUTSIDE PHONE NUMBERS ARE LISTED ON BOTTOM OF BZP 310-2T1 FORM~~ Not

Comment: ----------

Standard - Candidate simulates dialing '37' on the NARS phone

Cue - Inform candidate that phone is inoperable.

Performance step: 3

*** MESSAGE COMMUNICATED AND TRANSMITTED IAW STEP 4 b-g ***

Standard: *** THE NARS FORM DATA IS COMMUNICATED AND TRANSMITTED TO AGENCIES ***

Performance step Perform final roll call

CUE: WHEN ASKED ANSWER THE ROLL CALL AS THE AGENCIES GIVE NAME AS JOHN SMITH FOR IEMA PERSON RECEIVING DATA

NOTE: CRITICAL INFORMATION ROLL CALLS, EVENT CLASSIFICATION, PARS

~~NOTE:~~ JOHN SMITH WILL BE PLACED IN BLOCK 13 OF BZP 310-2T1
Cue: If asked

~~NOTE: 15 MINUTE TIME LIMIT FOR COMPLETION~~

Comment: ----------

Performance step: 4

*** COMPLETE APPLICABLE PORTIONS OF BZP 310-2T1 IAW STEP 3 o-r AND GIVE TO SUPPORT STAFF***

Standard: *** STEP 3 o-r COMPLETED , BZP 310-2T1 COMPLETED AND GIVEN TO SUPPORT STAFF ***

(Nars form Step 13:)

CUE: WHEN ASKED TAKE THE COMPLETED BZP 310-2T1 FORM AS SUPPORT STAFF

NOTE: COMPLETED BZP 310-2T1 FORM WILL BE ATTACHED

Comment: ----------

TERMINATING CUE: SED I HAVE COMPLETED THE TRANSMISSION OF THE NARS FORM

TIME STOP_____

Initial Conditions: You are an extra RO. There has been an General Emergency event classification. The Unit SRO has directed you to make all appropriate communications/transmittals of the NARS form.

Initiating Cue: SHIFT MANAGER/EMERGENCY DIRECTOR DIRECTS YOU TO PERFORM THE COMMUNICATION/TRANSMITTAL OF THE NARS FORM AND PROVIDE THE REQUIRED INFORMATION. YOU ARE TO PERFORM STEP 3 o-r AND STEP 4a-g OF BZP 310-2, ALSO FILL OUT THE APPLICABLE SECTIONS OF BZP 310-2T1.

Facility: BYRON

Task No: _____

Task Title: NARS FORM (CLASSIFY EVENT)

Job Performance Measure No: A.4

K/A Reference: 2.4.41 4.1

Examinee: _____

NRC Examiner: _____

Date: _____

Method of testing:

Simulated Performance _____

Actual Performance X

Classroom X

Simulator _____

Plant _____

READ TO THE EXAMINEE

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions: You are the Unit 1 SRO. Reactor Power was at 100% power. ~~Testing had been performed on a set of containment inboard and outboard isolation valves and LCO 3.6.3 was entered.~~ A Steam Generator tube rupture occurred on 1A S/G and containment was evacuated. The Unit is cooling down IAW 1BEP-3. The chemistry results showed a ~~0.8% clad failure.~~ 350 uci/g I-131. The wind is blowing at 10 miles/hr from 222 degrees.

Maintenance was being performed sequentially on the inboard and outboard airlock for the Emergency Escape Hatch across IAW LCO 3.6.2 was entered.

Via the Emergency Escape Hatch. The Escape Hatch airlocks failed to close.

Task Standard: CLASSIFY EVENT AND MAKE PARS IF NECESSARY

Required Materials: BZP 200-A1, BZP 200-1, BZP 300-A2, BZP 310-2T1

General References:
BZP 200-A1
BZP 200-1
BZP 300-A2
BZP 310-2T1

Initiating Cue: CLASSIFY THE EVENT BASED ON THE INITIAL CONDITIONS AND FILL OUT ALL ASSOCIATED PAPERWORK. (15 MINUTE TIME LIMIT AFTER CLASSIFICATION)

Time Critical Task: NO

Validation Time: 10 MINUTES

PERFORMANCE INFORMATION

START TIME: _____

(Denote critical steps with a **BOLD** *)

Performance step: 1

ENTER 1BZP 200-A1

Standard: LOCATE AND OPEN 1BZP 200-A1

Comment: ----------

Performance step: 2

CLASSIFY EVENT

Standard: EVENT IS A GENERAL EMERGENCY BASED ON LOSS OF 3 BARRIERS

NOTE: COMPLETED CHART FOR CLASSIFICATION ATTACHED

Comment: ----------

Performance step: 3

ENTER 1BZP 300-A2

Standard: LOCATE AND OPEN 1BZP 300-A2

Comment: ----------

Performance step: 4

*** MAKE PARS ***

Standard: *** PARS ~~C~~, H, F, & G MADE ***

NOTE: COMPLETED FLOW CHART OF PARS ATTACHED

Comment: ----------

Performance step: 5

*** FILL OUT BZP 310-2T1 ***

Standard: *** BZP 310-2T1 FILLED IN WITH ABOVE DATA ***

NOTE: COMPLETED BZP 310-2T1 ATTACHED

Comment: ----------

TERMINATING CUE: THE EVENT CLASSIFICATION AND PARS ARE MADE WITH BZP 310-2T1 FILLED OUT

TIME STOP_____

Byron
June 2000 Examination

NRC-Developed
Walk-through JPMs

Validation Week Changes

Facility: BYRON Task No: IV

Task Title: ALIGN ECCS TO HOT LEG RECIRC Job Performance Measure No: 1

K/A Reference: 6A4.07 4.4/4.4

Examinee: _____ NRC Examiner: _____

Date: _____

Method of testing:

Simulated Performance _____ Actual Performance ____X____

Classroom _____ Simulator _____X_____ Plant _____

READ TO THE EXAMINEE

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions: You are the Unit NSO.
Unit 1 is in the process of transferring to Hot Leg Recirculation.

Task Standard: ECCS ON HOT LEG RECIRCULATION

Required Materials: NONE

General References: BEP ES-1.4 TRANSFER TO HOT LEG RECIRCULATION

Initiating Cue: THE UNIT SUPERVISOR HAS DIRECTED YOU TO TRANSFER TO HOT LEG RECIRCULATION USING BEP ES-1.4.

Time Critical Task: NO

Validation Time: 10 minutes

PERFORMANCE INFORMATION

START TIME: _____

(Denote critical steps with a **BOLD AND** *)

Performance step: 1

REFER TO BEP ES-1.4 TRANSFER TO HOT LEG RECIRCULATION

Standard: LOCATE AND OPEN BEP ES-1.4

Comment: ----------

Performance step: 2 ALIGN RH FLOWPATH FOR HOT LEG RECIRCULATION

*** CLOSE RH TO COLD LEGS ISOL VALVES ***

Standard: *** VALVES SI8809A, SI8809B CLOSED ~~GREEN~~ RED LIGHTS ***

Comment: ----------

Performance step: 3 ALIGN RH FLOWPATH FOR HOT LEG RECIRCULATION

CHECK 1A RH PUMP RUNNING

Standard: 1A RH PUMP RUNNING RED LIGHT

Comment: ----------

Performance step: 4 ALIGN RH FLOWPATH FOR HOT LEG RECIRCULATION

*** OPEN TRAIN A RH HX DISCHARGE CROSSTIE HEADER VALVE ***

Standard: *** VALVE 1RH8716A OPEN ~~RED~~ Green LIGHT ***

Comment: ----------

Performance step: 5 ALIGN RH FLOWPATH FOR HOT LEG RECIRCULATION

*** 1A RH PUMP TRIPS *** (CAUSES BACKING OUT OF PROCEDURE AND GOING TO STEP 3 RNO)

Standard: *** VERIFIES 1A RH PUMP TRIP GREEN LIGHT ***
(Could make pump to pull to lock)

Comment: ----------

Performance step: 6 ALIGN RH FLOWPATH FOR HOT LEG RECIRCULATION

*** CLOSE TRAIN A RH HX DISCHARGE CROSSTIE HEADER VALVE ***

Standard: *** VALVE 1RH8716A CLOSED ~~GREEN~~ Red. LIGHT ***

Comment: ----------

Performance step: 7 ALIGN RH FLOWPATH FOR HOT LEG RECIRCULATION

*** OPEN TRAIN B RH HX DISCHARGE CROSSTIE HEADER VALVE ***

Standard: *** VALVE 1RH8716B OPEN ~~RED~~ Green LIGHT ***

Comment: ----------

_Performance step:8 ALIGN RH FLOWPATH FOR HOT LEG RECIRCULATION

*** OPEN RH TO HOT LEGS ISOL VALVE ***

Standard: *** VALVE 1SI8840 OPEN RED LIGHT ***

Comment: ----------

Performance step: 9 ALIGN SI FLOWPATH FOR HOT LEG RECIRCULATION

*** STOP SI PUMP 1A ***

Standard: *** SI PUMP 1A STOPPED GREEN LIGHT ***

Comment: ----------

Performance step: 10 ALIGN SI FLOWPATH FOR HOT LEG RECIRCULATION

*** CLOSE SI PUMP 1A TO COLD LEGS ISOL VALVE ***

Standard: *** VALVE 1SI8821A CLOSED ~~GREEN~~ Red LIGHT ***

Comment: ----------

Performance step: 11 ALIGN SI FLOWPATH FOR HOT LEG RECIRCULATION

*** OPEN SI PUMP 1A TO HOT LEGS ISOL VALVE ***

Standard: *** VALVE 1SI8802A OPEN RED LIGHT ***

Comment: ----------

Performance step: 12 ALIGN SI FLOWPATH FOR HOT LEG RECIRCULATION

*** START SI PUMP 1A ***

Standard: *** SI PUMP 1A STARTED RED LIGHT ***

Comment: Announce in plant, then ----------

Performance step: 13 ALIGN SI FLOWPATH FOR HOT LEG RECIRCULATION

*** STOP SI PUMP 1B ***

Standard: *** SI PUMP 1B STOPPED GREEN LIGHT ***

Comment: ----------

Performance step: 14 ALIGN SI FLOWPATH FOR HOT LEG RECIRCULATION

*** CLOSE SI PUMP 1B TO COLD LEGS ISOL VALVE 1SI8821B ***

Standard: *** VALVE 1SI8821B CLOSED ~~GREEN~~ Red LIGHT ***

Comment: ----------

Performance step: 15 ALIGN SI FLOWPATH FOR HOT LEG RECIRCULATION

*** OPEN SI PUMP 1B TO HOT LEGS ISOL VALVE ***

Standard: *** VALVE 1SI8802B OPEN RED LIGHT ***

Comment: ----------

Performance step: 16 ALIGN SI FLOWPATH FOR HOT LEG RECIRCULATION

*** START SI PUMP 1B ***

Standard: *** SI PUMP 1B STARTED RED LIGHT ***

ANNUNCIATOR ON PANEL

Comment: ----------

Performance step: 17 ALIGN SI FLOWPATH FOR HOT LEG RECIRCULATION

CHECK SI PUMPS TO HOT LEGS ISOL VALVES OPEN

Standard: VALVES OPEN 1SI8802A, 1SI8802B RED LIGHTS

Comment: ----------

Performance step: 18 ALIGN SI FLOWPATH FOR HOT LEG RECIRCULATION

*** CLOSE SI PUMPS TO COLD LEGS ISOL VALVE ***

Standard: *** VALVE 1SI8835 CLOSED ~~GREEN~~ Red LIGHT ***

Comment: ----------

Terminating cue: TO SRO HAVE COMPLETED THE TRANSFER TO HOT LEG RECIRCULATION ON UNIT 1

STOP TIME: _____

Facility: BYRON

Task No: I

Task Title: MANUAL MAKEUP TO ~~RCS~~ VCT

Job Performance Measure No: 2

K/A Reference: 4A4.07 3.9/3.7

Examinee: _____

NRC Examiner: _____

Date: _____

Method of testing:

Simulated Performance _____

Actual Performance ____X____

Classroom _____

Simulator _____X_____

Plant _____

READ TO THE EXAMINEE

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions: You are the UNIT NSO.
Unit 1 is in mode 1.
The ~~RCS~~ VCT has to be made up to on Unit 1.

Task Standard: MANUALLY MAKE UP TO RCS ON UNIT 1

Required Materials: NONE

General References:
BOP CV-7 OPERATION OF THE REACTOR MAKEUP SYSTEM IN AUTO OR MANUAL MODE
BAR 1-9-A6 BA FLOW DEVIATION
1BOA PRI-2 EMERGENCY BORATION

Initiating Cue: THE UNIT SUPERVISOR HAS DIRECTED YOU TO MANUALLY MAKEUP 100 GALLONS TO THE ~~RCS~~ VCT ON UNIT 1

Time Critical Task: NO

Validation Time: 15 minutes

PERFORMANCE INFORMATION

START TIME: _____

(Denote critical steps with a **BOLD** *)

Performance step: 1

REFER TO BOP CV-7 OPERATION OF THE REACTOR MAKEUP SYSTEM IN AUTO OR MANUAL MODE

Standard: LOCATE AND OPEN BOP CV-7

Comment: ----------

Performance step: 2

*** DETERMINE EXISTING RCS BORON CONCENTRATION FROM CHEMISTRY ***

Standard: *** BORON CONCENTRATION VALUE OBTAINED ***

CUE: GIVE CURRENT SETTINGS ~~ON CONTROLLERS AS~~ of PPM BORON

RCS 529 PPM, BAT 7000 PPM

Comment: ----------

Performance step: 3

*** DETERMINE FLOW RATES FOR BORIC ACID FLOW ***

Standard: *** FLOW RATES DETERMINED ***

NOTE: ~~MOL IS 529 PPM CONTROLLER SET PER CHART~~
PRIMARY WATER FLOW IS SET AT 120 GPM

Comment: ----------

Performance step: 4

PLACE MAKE-UP CONTROL SWITCH IN STOP POSITION

Standard: MAKE-UP CONTROL SWITCH IN STOP POSITION

Comment: ----------

Performance step: 5

*** SET FK-110, BORIC ACID FLOW TO BLENDER TO ESTABLISH THE FLOW DETERMINED BY STEP F.2 WITH CONTROLLER IN AUTO ADJUST POTENTIOMETER CONSIDERING THAT 1 TURN EQUALS 4 GPM ***

Standard: *** FLOW SET ON FK-110 TO REQUIRED GPM FLOW ***

NOTE: CALCULATION (529 X 120) / 7000 = 9.07 9.07/4 = 2.27

Comment: ----------

Performance step: 6

*** MANUAL RMCS ENTER GALLONS OF BORIC ACID TO BORIC ACID TOTALIZER FY-110 PRESS ENTER ON COUNTER, INSERT DESIRED GALLONS TO TENTH DECIMAL, PRESS RESET ON COUNTER, AND PRESS DISPLAY TO VERIFY CORRECT GALLONS. ***

Standard: *** TOTAL GALLONS ENTERED ON FY-110 AND VERIFIED ***

NOTE: SET >10 GPM DUE TO 9 GPM flow (Red dot is decimal pot)

Comment: ----------

Performance step: 7

*** SET FK-111A PW/TOTAL FLOW CONTROLLER TO DESIRED FLOW WITH CONTROLLER IN MANUAL ADJUST POTENTIOMETER CONSIDERING THAT 1 TURN EQUALS 16 GPM (AUTO RMCS 120 GPM PRESET) ***

Standard: *** FK-111A SET TO PROPER GPM ***

NOTE: 7.5 = 120 gpm

Comment: ----------

Performance step:8

*** MANUAL RMCS ENTER GALLONS OF PRIMARY WATER TO BE ADDED ON TOTALIZER FY-111, PRESS ENTER ON COUNTER, INSERT DESIRED GALLONS TO TENTH DECIMAL, PRESS RESET ON COUNTER, AND PRESS DISPLAY TO VERIFY CORRECT GALLONS. ***

Standard: *** TOTAL GALLONS ENTERED ON FY1-111 AND VERIFIED ***

NOTE: SET TO 100 then RESET TO 0

Comment: ----------

Performance step: 9 AUTO MAKEUP

*** MANUAL MAKEUP PLACE MAKE-UP MODE SELECTOR SWITCH IN MANUAL ***

Standard: *** MAKEUP MODE SWITCH IN MANUAL ***

Comment: ----------

-

Performance step: 10

*** ALIGN OUTLET OF BLENDER TO CHARGING PUMP SUCTION BY OPENING CV110B BORIC ACID BLENDER TO CHARGING PUMP VALVE ***

Standard: *** CV110B OPEN RED LIGHT ***

Comment: ----------

-

Performance step: 11

*** PLACE MAKEUP CONTROL SWITCH IN START ***

Standard: *** MAKEUP CONTROL SWITCH IN START ***

Comment: ----------

-

Performance step: 12

VERIFY CONTROL SWITCH FOR CV110A IN AUTO BORIC ACID BLENDER TO BLENDER VALVE AND CV111A PW TO BORIC ACID BLENDER VALVE IN AUTO

Standard: CV110A IN AUTO AND CV111A IN AUTO

Comment: ----------

-

Performance step: 13

VERIFY/ START 0A/0B PW PUMP IF DILUTION OR BLENDED FLOW IS DESIRED

Standard: PW PUMP IS RUNNING ~~RED LIGHT~~ TOTALIZER COUNTING

Comment: ----------

Performance step: 14

VERIFY/START AB03P, BA TRANSFER PUMP IF BORATION OR BLENDED FLOW IS DESIRED

Standard: BORIC ACID TRANSFER PUMP ~~RUNNING RED LIGHT~~ TOTALIZER COUNTING

Comment: ----------

Performance step: 15

*** ENSURE THAT DESIRED BORIC ACID FLOW RATE AND /OR PW FLOW RATE IS OBTAINED FR-110***

Standard: *** RECOGNIZES IMPROPER FLOW RATES FOR BORIC ACID AND PRIMARY WATER (BORIC ACID FLOW DEVIATION ALARM 1-9-A6, BAR 1-9-A6 VALVE 1CV110A IS SHUT) *** TAKES MAKEUP CONTROL SWITCH TO STOP TO STOP DILUTION, VERIFIES CV110A VALVE IS SHUT, AND PRIMARY WATER TOTALIZER TO 0

NOTE: VALVE 1CV110A IS SHUT CAN'T OPEN ~~WILL REQUIRE GOING TO BAR 1-9-A6~~ IF they got DEVIATION ALARM Could go to

The alarm has a 30 Second time delay

Comment: ----------

CUE: If applicant goes to BAR 1-9-A6 ASK status of BTS ASUS

Performance step: 16

LOCATE PROCEDURE BAR 1-9-A6

Standard: OPEN PROCEDURE BAR 1-9-A6

Comment: ----------

Performance step: 17

*** DETERMINE REASON FOR DEVIATION (VALVE 1CV110A SHUT) ***

Standard: *** VALVE 1CV110A SHUT GREEN LIGHT REALIZED ***

CUE: NSS OPEN 1CV110A LOCALLY DON'T GO TO 1BOA PRI-2

Comment: ----------

-

Performance step: 18

*** APPLICANT DIRECTS PLANT OPERATOR TO LOCALLY OPEN 1CV110A ***

Standard: *** VALVE 1CV110A OPEN RED LIGHT ***

NOTE: SIMULATOR OPERATOR OPENS 1CV110A

Comment: ----------

-

Performance step: 19

*** ENSURE THAT DESIRED BORIC ACID FLOW RATE AND /OR PW FLOW RATE IS OBTAINED FR-110 ***

Standard: *** PROPER FLOW RATES FOR BORIC ACID AND PRIMARY WATER ***

Comment: ----------

Terminating cue: TO THE SRO I HAVE ~~MADE UP~~ 100 GALLONS TO THE RCS

STOP TIME: _____

Terminated RC make up of

Facility: BYRON

Task No: III

Task Title: MANUAL PZR PRESS CONTROL

Job Performance Measure No: 3

K/A Reference: 27AA2.16 3.6/3.9

Examinee: _____

NRC Examiner: _____

Date: _____

Method of testing:

Simulated Performance _____

Actual Performance ____X_____

Classroom _____

Simulator _____X_____

Plant _____

READ TO THE EXAMINEE

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:
You are the Unit NSO
Unit 1 is in mode 1
All control are in automatic
ANNUNCIATOR 1-12-A1 PZR PRESS LOW RX TRIP STPT ALERT
1-12-B1 PZR PRESS LOW

Task Standard: CONTROL PZR PRESSURE IN MANUAL AFTER PT 455 FAILS LOW

Required Materials: NONE

General References:
BAR 1-12-A1 PZR PRESS LOW RX TRIP STPT ALERT
BAR 1-12-B1 PZR PRESS LOW
1BOA INST-2 OPERATION WITH A FAILED INSTRUMENT CHANNEL

Initiating Cue: TAKE THE NECESSARY ACTIONS ASSOCIATED WITH THIS ALARM

Time Critical Task: NO

Validation Time: 10 MINUTES

PERFORMANCE INFORMATION

START TIME: _____

(Denote critical steps with a **BOLD** *)

Performance step: 1

ENTER 1BOA INST-2

Standard: LOCATE AND OPEN 1BOA INST-2

Comment: ----------

Performance step: 2 PZR PRESS

*** CHECK PZR PRESS CHANNEL NORMAL ***

Standard: *** PI-455 ~~1700 PSIG~~, 456, 457, 458 2260 PSIG ***
low

Comment: ----------

Performance step: 3 PZR PRESS

*** SELECT OPERABLE PZR PRESSURE CONTROL CHANNEL ***

NOT CRITICAL

Standard: *** PZR PRESS CONTROL SWITCH IN CHANNEL 457/458 FOR CONTROL BUT SWITCH IS BROKEN AS IS ***

NOTE: SWITCH BROKEN AS IS

Comment: ----------

Performance step: 4 PZR PRESS

*** TAKE MANUAL CONTROL OF PZR PRESS ***

Standard: *** SWITCH IS IN MANUAL AND PRESSURE RESTORED ***

Comment: ----------

Performance step: 5 PZR PORVS, SPRAYS, HTRS

CHECK PORVS CLOSED

Standard: PORVS 1RY455A AND 1RY456 CLOSED GREEN LIGHTS

Comment: ----------

Performance step: 6 PZR PORVS, SPRAYS, HTRS

CHECK PZR SPRAY VALVES NORMAL

Standard: PZR SPRAY VALVES 1RY455B AND 1RY455C INTERMEDIATE

Comment: ----------

Performance step: 7 PZR PORVS, SPRAYS, HTRS

CHECK PZR HTRS NORMAL

Standard: PZR HTRS 2 SETS OF B/U HTRS ON ~~RED~~ GREEN LIGHTS

CUE: AS THE US DIRECT APPLICANT TO TAKE ACTIONS IAW 1BOA INST-2

Comment: ----------

Performance step: 8

*** CHECK PZR PRESS CONTROL IN AUTO ***

Standard: * **PZR PRESS CONTROL STAYS IN MANUAL DUE TO FAILED SWITCH ***

BY APPLICANT TO PLACE PLACE IN AUTO WILL BE

CUE: IF ASKED PZR PRESS ~~PLACED IN~~ AUTO THE FAILED CHANNEL ~~IS~~ REINSERTED DUE TO FAILED SWITCH

Comment: ----------

Performance step: 9

SELECT OPERABLE CHANNEL TO RECORDERS PZR PRESS AND LOOP DELTA T

Standard: CHANNEL 456, 457, OR 458 ON PZR PRESS RECORDER SELECTOR SWITCH AND LOOP DELTA T

Comment: ----------

Performance step: 10

REVIEW LOGICS TO ENSURE REACTOR TRIP WON'T OCCUR PRIOR TO TRIPPING BISTABLES PLACE ORANGE DOTS ON ASSOCIATED ITEMS

Standard: ORANGE DOTS ON PI-455, BISTABLES PB455A, B, C, D, AND TB 411C,D AND ANNUNCIATOR

Comment: ----------

Performance step: 11

LOCALLY TRIP BISTABLES (EXTRA NSO WILL TRIP BISTABLES)

Standard: EXTRA NSO NOTIFIED OF BISTABLES PB455A, B, C, D, AND TB 411C, D FOR 1PT-455 NEEDING TO BE TRIPPED

CUE: EXTRA NSO WILL TRIP THE BISTABLES

Comment: ----------

Performance step: 12

CHECK P-11 INTERLOCK

Standard: P-11 BYPASS PERMISSIVE WINDOW DARK NOT LIT PRESSURE >1930 PSIG

Comment: ----------

Performance step: 13

CHECK TECH SPECS

Standard: NOTIFY NSS TO CHECK TECH SPECS

CUE: NSS WILL CHECK TECH SPECS

Comment: ----------

TERMINATING CUE: SRO I HAVE MANUAL PRESSURE CONTROL OF THE PZR

TIME STOP_____

Facility: BYRON

Task No: IV

Task Title: CONTROL OF STEAM DUMPS

Job Performance Measure No: 4

K/A Reference: 41A4.08 3.0/3.1

Examinee: _____

NRC Examiner: _____

Date: _____

Method of testing:

Simulated Performance _____

Actual Performance ____X____

Classroom _____

Simulator _____X_____

Plant _____

READ TO THE EXAMINEE

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions: You are the extra NSO
Unit 1 is in mode 1 at 16% power
The plant is shutting down per 1BGP 100-4

Task Standard: CONTROL STEAM DUMPS VALVES

Required Materials: NONE

General References:
1BGP 100-4 POWER DESCENSION

Initiating Cue: THE UNIT SUPERVISOR DIRECTS YOU TO TRANSFER CONTROL OF THE STEAM DUMPS FROM TAVE MODE TO PRESSURE MODE. THE TURBINE WILL BE MANUALLY TRIPPED FROM 15% POWER

Time Critical Task: NO

Validation Time: 10 minutes

PERFORMANCE INFORMATION

START TIME: _____

(Denote critical steps with a **BOLD** *)

Performance step: 1

ENTER 1BGP 100-4

Standard: LOCATE AND OPEN 1BGP 100-4

Comment: ----------

Performance step: 2

ENSURE PRESSURE MODE CONTROLLER 1PK-507, IN MANUAL WITH 0% DEMAND

Standard: 1PK-507, IN MANUAL WITH 0% DEMAND Critical

Comment: ----------

Performance step: 3

*** SELECT STM PRESS MODE ON STEAM DUMP MODE SELECT SWITCH ***

Standard: *** STEAM DUMP MODE SELECT SWITCH IN STM PRESS MODE ***

Comment: ----------

Performance step: 4

*** ENSURE MANUAL/AUTO PRESSURE CONTROLLER IS SET FOR 1092 PSIG ***

Standard: *** MANUAL CONTROL SET AT 1092 PSIG ***

NOT CRITICAL

CUE 7.28 SET POINT

Comment: ----------

Performance step: 5

DEPRESS AUTO PUSHBUTTON AT MANUAL/AUTO PRESSURE CONTROLLER

Standard: PRESSURE CONTROLLER IN AUTO

Comment: ----------

Performance step: 6

MONITOR STEAM DUMPS DURING TURBINE SHUTDOWN (MANUALLY TRIPPING AT 15%)

made a critical step

Standard: SLOWLY DECREASE THE PRESSURE SETPOINT ON 1PK-507 UNTIL THE STEAM DUMP CONTROLLER OUTPUT JUST BEGINS TO INCREASE

CUE: BLUE LIGHT OUT (OUTPUT) NEEDLE SLIGHTLY MOVES.

Comment: ----------

TERMINATING CUE: SRO I HAVE THE STEAM DUMPS IN STEAM PRESSURE MODE READY TO TRIP THE TURBINE.

TIME STOP_____

Facility: BYRON

Task No: VI

Task Title: SYNCHRONIZE D/G TO A BUS

Job Performance Measure No: 5

K/A Reference: 64A2.09 3.1/3.3

Examinee: _____

NRC Examiner: _____

Date: _____

Method of testing:

Simulated Performance _____

Actual Performance ____X_____

Classroom _____

Simulator _____X_____

Plant _____

READ TO THE EXAMINEE

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions: You are the extra NSO.
Unit 1 is in mode 1.
The 1A D/G needs to be paralleled and loaded.
The 1A D/G has been running at 0 load for 5 minutes.
It is ready to be loaded.

Task Standard: SYNCHRONIZE A D/G TO A BUS AND LOAD TO >5500 KW

Required Materials: NONE

General References:
BOP DG-11 DIESEL GENERATOR START UP

Initiating Cue: THE UNIT SUPERVISOR DIRECTS YOU TO PARALLEL AND LOAD THE 1A DG TO > 5500 KW PER STEP 5 OF BOP DG-11. The 1A DG will be run for 4 hours

Time Critical Task: NO

Validation Time: 15 minutes

PERFORMANCE INFORMATION

START TIME: _____

(Denote critical steps with a **BOLD** *)

Performance step: 1

ENTER BOP DG-11

Standard: LOCATE AND OPEN BOP DG-11(STEP 5A)

CUE: ALL PREREQUISITES AND PRECAUTIONS HAVE BEEN MET

Comment: ----------

Performance step: 2

NOTIFY ELECTRIC OPERATIONS OF PENDING D/G PARALLEL OPERATION, ESTIMATED RUN TIME, AND LOADING

Standard: ELECTRIC OPERATIONS NOTIFIED

CUE: WHEN ASKED ANSWER AS ELECTRIC OPERATIONS NOTIFIED

Comment: ----------

Performance step: 3

*** PLACE THE AUTO RE-CLOSE CIRCUIT ARM SELECTOR SWITCH TO THE SURV TEST POSITION ***

Standard: *** SWITCH IN SURV TEST POSITION ***

Comment: ----------

Performance step: 4

VERIFY D/G IS OPERATING PROPERLY FREQUENCY 60 HZ AND VOLTAGE 4160 VOLTS

Standard: D/G FREQ 60 HZ AND VOLTAGE 4160 VOLTS

Comment: ----------

Performance step: 5

VERIFY APPROXIMATELY THE SAME VOLTAGE EXIST ACROSS EACH PHASE USING THE D/G VOLTMETER SELECT SWITCH

Standard: PHASE VOLTAGES ALL EQUAL

Comment: ----------

Performance step: 6

*** ESTABLISH CONDITIONS TO SYNCHRONIZE THE DG TO ESF BUS 41, SYNC SELECTOR SWITCH FOR DG A FEED TO 4KV BUS 41 IS ON, INCOMING VOLTAGE IS 2 VOLTS HIGHER THAN RUNNING VOLTAGE(VOLT ADJUST), THE SYNCHROSCOPE IS ROTATING IN THE FAST DIRECTION (GOV ADJUST) ***

Standard: ***SYNC SWITCH ON IN 41 POSITION, INCOMING VOLTAGE 2 VOLTS HIGHER,**

SYNCHROSCOPE MOVING SLOWLY IN FAST DIRECTION *

Comment: ----------

Performance step:7

*** SYNCHRONIZE THE D/G SLIGHTLY BEFORE THE 12 O'CLOCK POSITION CLOSE ACB 413/423, VERIFY SYNCHROSCOPE LOCKED IN 12 O'CLOCK POSITION, IMMEDIATELY LOAD D/G TO 1000 KW BY GOING TO RAISE ON GOV ADJUST ***

Standard: *** BKR SHUT, SYNCHROSCOPE LOCKED IN 12 O'CLOCK POSITION, D/G LOADED TO 1000KW BY ADJUSTING GOV ***

CUE: The 1A D/G Lup Bot DG-1ITI will be logged.

Comment: ----------

Performance step:8

*** D/G CONTINUES TO LOAD RAPIDLY WITHOUT CONTROL ~~TRIP THE D/G~~ *** until annunciator 1-21-D8 DG 1A Diff lockout lowspeed.

Standard: *** ~~D/G TRIPPED~~ *** The Applicant will use BAR 1-21-D8 and open the output Breaker ACB ~~no~~ 1413

Comment: ----------

TERMINATING CUE: SRO I HAVE ~~LOST CONTROL OF THE D/G TRIPPING THE D/G.~~ tripped 1A D/G output Breaker

CUE: I WILL HAVE SOMEONE INVESTIGATE THE D/G. 1A

TIME STOP_____

Facility: BYRON

Task No: VII

Task Title: CHANNEL CHECK ON WRGM

Job Performance Measure No: 6

K/A Reference: 73A4.02 3.7/3.7

Examinee: _____

NRC Examiner: _____

Date: _____

Method of testing:

Simulated Performance _____X_____ Actual Performance _____

Classroom _____ Simulator (Control Room) ___X___ Plant _____

READ TO THE EXAMINEE

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions: You are an extra NSO
Unit 2 is in mode 1
A work package needs a channel check on 2~~RE~~-PR030 to be closed out
RIU

Task Standard: CHANNEL CHECK ON WRGM (RAD MONITOR)

Required Materials: ~~NONE~~ 2 BOSR 3.3.1-1

General References:
~~BCP 400-TCNMT/ROUTINE~~
2 BOSR 3.3.1-1

Initiating Cue: THE UNIT SUPERVISOR DIRECTS YOU TO PERFORM APPLICABLE STEPS OF ~~BOS 3.3.6-1 O~~N 2~~RE~~-PR030 (WRGM) TO CLOSE OUT WORK PACKAGE
2 BOSR 3.3.1-1 RIU

Time Critical Task: NO
UNIT 2 AUX BLDG VENT STACK MONITORS

Validation Time: 20 minutes

PERFORMANCE INFORMATION

START TIME: _____

(Denote critical steps with a **BOLD** *)

Performance step: 1

ENTER BOS 3.3.6-1

Standard: LOCATE AND OPEN ~~BOS 3.3.6-1~~ 2BOSR 3.3.1-1 AT MONTHLY CHANNEL CHK STEP 2

CUE: ALL PREREQUISITES HAVE BEEN MET, PER SM A PARTIAL SURVEILLANCE WILL BE PERFORMED

Comment: ----------

Performance step: 2

VERIFY AND RECORD GREEN AVAIL LIGHT IS ILLUMINATED

Standard: LOW RANGE AND EFF LEVEL LITE LIT

CUE: LOW RANGE AVAIL AND EFF LEVEL AVAL LIT

Comment: ----------

Performance step: 3

VERIFY FOLLOWING LIGHT PUSH BUTTONS ARE NOT ILLUMINATED

Standard: LIGHTS NOT ILLUMINATED

CUE: ITEM, MON, ERROR, SUPV MODE, KYBD LOCK OUT NOT LIT

Comment: ----------

Performance step: 4

RECORD EFF LEVEL RAD LEVEL

Standard: EFF LEVEL PUSHBUTTON DEPRESSED AND LED DISPLAY RECORDED

CUE: EFF LEVEL PUSH BUTTON LIT AND LED DISPLAY READS 1.98+1

Comment: ----------

Performance step: 5

RECORD LOW RANGE RAD LEVEL

Standard: PUSHBUTTONS DEPRESSED AND LED DISPLAY RECORDED

CUE: LOW RANGE PUSHBUTTON IS LIT AND LED DISPLAY READS 3.47 E-7

Comment: ----------

Performance step: 6

*** VERIFY THE AS FOUND PUMP CONTROL POINT ***

Standard: *** DEPRESS PUSHBUTTONS 0,2,3 AND DEPRESS ITEM AND RECORD ***

CUE: LED DISPLAY 023 AND LED DISPLAY 5.00 E-7

Comment: ----------

Performance step:7

*** PLACE THE RM-23 IN SUPERVISORY MODE ***

Standard: *** RM-23 IN SUPV MODE (KEY #5533) INSERT KEY AND SELECT SUPERVISOR AND VERIFY LIGHT ILLUMINATED ***

CUE: KEY IS IN SUPERVISOR POSITION AND SUPV MODE LIGHTS ARE LIT

Comment: ----------

Performance step: 8

*** START THE MID AND HIGH RANGE PUMPS ***

NOTE: (THE LIGHTS ONLY ILLUMINATE IF THE SETPOINT ENTERED IS A VALUE LESS THAN RAD LEVEL)

Standard: *** DEPRESS DESIRED SETPOINT ###-##, DEPRESS ENTER BUTTON AND RECORD GREEN AVAIL LIGHT ILLUMINATE GREEN AVAIL LIGHT ILLUMINATE ***

CUE: LED DISPLAY NUMBER ENTERED AND AVAIL LIGHTS ARE LIT FOR MID RANGE AND HIGH RANGE

Comment: ----------

Performance step: 9

*** RESTORE PUMP CONTROL POINT TO AS FOUND ***

Standard: * **VERIFY LOW RANGE BUTTON IS LIT, DEPRESS BUTTONS 0,2,3, DEPRESS ITEM PUSHBUTTON, ENTER AS FOUND POINT VALUE, RECORD AS LEFT VALUE ***

CUE: LOW RANGE PUSHBUTTON IS LIT, LED DISPLAYS 023, LED DISPLAYS SETPOINT ENTERED, LED DISPLAYS NUMBERED ENTERED , IV WAS performed

Comment: ----------

Performance step: 10

Supervisory control to normal

RESTORE ~~PUMP CONTROL POINT TO AS FOUND~~

Standard: SELECT NORMAL ON KEY SWITCH, AFTER 2 MINUTES VERIFY GREEN AVAIL IS OFF FOR MID AND HIGH RANGE, ACKNOWLEDGE ALARMS ON RM-23 FOR MID AND HIGH RANGE, ACKNOWLEDGE LOSS OF FLOW ALARM ON THE RM-11 FOR THE MID AND HIGH RANGE, VERIFY LOSS OF FLOW-SELECT PROPER CHANNEL AND DEPRESS STATUS ON RM-11

CUE: KEY SWITCH IS IN NORMAL, GREEN AVAIL LIGHTS ARE OFF FOR MID AND HIGH RANGE AND BUTTONS FLASHING, MID AND HIGH RANGE BUTTONS ARE OFF, THE MID AND HIGH RANGE ARE DARK BLUE, CHANNEL LOSS OF SAMPLE FLOW IS INDICATED

Comment: ----------

Performance step: 11

*** VERIFY NUMBER OF OPERABLE CHANNELS ***

Standard: *** MARK CHANNEL CHECK SPACE OF THE BOS AND GREATER THAN CHANNELS OPERABLE ***

CUE: ALL CHANNELS OPERABLE

Comment: ----------

TERMINATING CUE: SRO I HAVE COMPLETEDTHE CHANNEL CHECK ON 2RE-PRO3O

TIME STOP_____

Facility: BYRON

Task No: V

Task Title: COOL THE PRT

Job Performance Measure No: 7

K/A Reference: 7A1.03 2.6/2.7

Examinee: _____

ner: _____

Date: _____

Old with markups

Method of testing:

Simulated Performar

mance _____X____

Classroom _____

___ Plant _____

READ TO THE EXAM

I will explain the initial

s, and provide initiating

cues. When you comp

his job performance

measure will be satisfi

Initial Conditions: You are the ~~Unit~~ EXTRA NSO
Unit 1 is in mode 1
The PRT needs to be cooled.

Task Standard: COOL THE PRT

Required Materials: NONE

General References:
BOP RY-6 TEMPERATURE CONTROL OF THE PRT
BOP RY-4, DRAINING THE PRT

Initiating Cue: THE UNIT SUPERVISOR DIRECTS YOU TO COOL THE PRT TO 114F

Time Critical Task: NO

Validation Time: 15 minutes

PERFORMANCE INFORMATION

START TIME: _____

(Denote critical steps with a **BOLD** *)

Performance step: 1

ENTER BOP RY-6

Standard: LOCATE AND OPEN BOP RY-6

Comment: ----------

Performance step: 2 (1)

VERIFY/OPEN AT PMO5J AOV-RY8028, PW TO PRT CNMT ISOL VLV

NOTE ANNUNCIATOR 1-12-A7 MAY COME IN GREEN

Standard: AOV-RY8028 OPEN ~~RED~~ LIGHT

Comment: ----------

Performance step: 3 (2)

***OPEN AT PM05J AOV-RY8030, PW TO PRT CNMT ISOL VLV ***

Standard: *** AOV-RY8030 OPEN RED LIGHT ***

CUE: when asked Reactor Hold up Tanks Level (A 12%, B 15%

Comment: ----------

Performance step: 4 (3)

*** CLOSE AT PM05J AOV-RY8030, PW TO PRT CNMT ISOL VLV WHEN PØRT LEVEL IS ABOUT 80% AS INDICATED IN LI470 ***

Standard: *** AOV-RY8030 CLOSED WHEN LEVEL IS 80% GREEN LIGHT ***

Comment: ----------

Performance step: 5 (4)

DRAIN PRT TO APPROXIAMATELY 69% PER BOP RY-4, DRAINING THE PRT

Standard: LOCATE AND OPEN BOP RY-4

Comment: ----------

Performance step: 6 BOP RY-4

VERIFY/CLOSE RY469, PRT TO GW ISOL VLV AT PM05J

Standard: RY469 CLOSED GREEN LIGHT

Comment: ----------

Performance step: 7

VERIFY/ADJUST RY8034, N2 TO PRT REG VLV TO 3 PSIG

Standard: Local operator ABILLE to Ensure ^RY8034 ADJUSTED TO 3 PSIG

CUE: RY8034 ADJUSTED TO 3 PSIG

Comment: ----------

Performance step: 8

VERIFY/OPEN AOV-RY8033, N2 SUPPLY TO PRT ISOL VLV AT PM05J

Standard: AOV-RY8033 OPEN ~~RED~~ Green LIGHT

Comment: ----------

Performance step: 9

VERIFY/OPEN AOV-RE9170, RCDT PUMP DISCHARGE HEADER OUTSIDE CNMT ISOL VLV AT PM11J

Standard: AOV-RE9170 O OPEN ~~RED~~ Green LIGHT

Comment: ----------

Performance step: 10

VERIFY/OPEN AOV-RE1003, RCDT PUMP DISCHARGE HEADER INSIDE CNMT ISOL VLV AT PM11J

Standard: AOV-RE1003 OPEN ~~RED~~ Green LIGHT

Comment: ----------

Performance step: 11

*** OPEN AOV-RY8031, PRT DRN ISOL VLV AT PM05J ***

Standard: *** AOV-RY8031 OPEN RED LIGHT ***

Comment: ----------

Performance step: 12

VERIFY/START RE01PA/B RCDT PUMP A/B

Standard: RCDT PUMP A/B RUNNING RED LIGHT

Comment: ----------

Performance step: 13

*** ENSURE PRT PRESSURE REMAINS >0 PSIG ***

Standard: *** PRT PRESSURE >0 PSIG ***

NOT CRITICAL

Comment: ----------

Performance step: 14

*** CLOSE AOV-RY8031, PRT DRN ISOL VLV WHEN DESIRED PRT LEVEL IS REACHED AT PM05J ***

Standard: *** AOV-RY8031 CLOSED GREEN LIGHT ***

Comment: ----------

Performance step: 15

VERIFY/STOP RE01PA/B RCDT PUMP A/B

Standard: RCDT PUMP A/B STOPPED GREEN LIGHT

Comment: ----------

Performance step: 16

*** CLOSE AOV-RE1003, RCDT PUMP DISCHARGE HEADER INSIDE CNMT ISOL VLV AT PM11J ***

Standard: *** AOV-RE1003 CLOSED GREEN LIGHT ***

Comment: ----------

Performance step: 17

REPEAT STEPS (1-4) UNTIL TEMPERATURE IS REDUCED BELOW 114F

Standard: PRT TEMP 114 AOV-RE1003 CLOSED GREEN LIGHT

Comment: ----------

TERMINATING CUE: SRO I HAVE COOLED THE PRT TO 114F

TIME STOP_____

Facility: BYRON
Task Title: S/U ROD DRIVE M/G SET

Task No: I
Job Performance Measure No: 8

K/A Reference: 1A4.08 3.7/3.4

Examinee: _____

NRC Examiner: _____

Date: _____

Method of testing:

Simulated Performance _____X_____ Actual Performance _____

Classroom _____ Simulator _____ Plant __X____

READ TO THE EXAMINEE

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions: You are an equipment operator.
Unit 1 is in the process of being started up per BGP 100-2
NO ROD DRIVE MG SETS ARE RUNNING

Task Standard: S/U ROD DRIVE MG SET

Required Materials: NONE

General References:
BOP RD-1 STARTUP OF ROD DRIVE M/G SET

Initiating Cue: THE UNIT SUPERVISOR DIRECTS YOU TO START UNIT 1 1A ROD DRIVE M/G SET

Time Critical Task: NO

Validation Time: 15 MINUTES

PERFORMANCE INFORMATION

START TIME: _____

(Denote critical steps with a **BOLD** *)

Performance step: 1

ENTER BOP RD-1

Standard: LOCATE AND OPEN BOP RD-1

Comment: ----------

Performance step: 2

PROCEED TO THE ROD DRIVE MG SET ROOM

Standard: ARRIVE AT MG SET ROOM 451 MISC ELECT EQUIP ROOM

CUE: B MG GENERATOR OUTPUT BREAKER IS RACKED IN AND OPEN
T.S. 3/4.3.1 TABLE 4.3-1 SURV ARE IN FREQUENCY

Comment: ----------

Performance step: 3

VERIFY/SET THE VOLTAGE ADJUST POTENTIOMETER , Loosen the Locking Screw.

Standard: VOLTAGE ADJUST POTENTIOMETER IS IN THE MID POSITION - 5.0

CUE: VOLTAGE ADJUST POTENTIOMETER IS IN THE MID POSITION - 5.0

Comment: ----------

Performance step: 4

VERIFY/PLACE THE SYNC SWITCH IN OFF

NOTE:(SYNC SWITCH REMOVABLE HANDLE IS NORMALLY REMOVED AND LOCATED IN THE BREAKER CABINET. DO NOT OPEN CABINET OF RUNNING MG SET)

Standard: SYNC SWITCH IN OFF

CUE: SYNC SWITCH IN OFF

Comment: ----------

Performance step: 5 VERIFY BRKRS OPEN AT CONTROL CABINET OR LOCALLY

ENSURE MOTOR BRKR IS TRIPPED

Standard: MOTOR BRKR TRIPPED, MOTOR BRKR OPEN, RED OPEN LITE IS LIT

CUE: MOTOR BRKR RED OPEN LITE IS LIT

Comment: ----------

Performance step: 6 VERIFY BRKRS OPEN AT CONTROL CABINET OR LOCALLY

ENSURE GEN BRKR IS TRIPPED

Standard: GEN BRKR TRIPPED GENERATOR BRKR OPEN, RED OPEN LITE IS LIT

CUE: GEN BRKR RED OPEN LITE IS LIT

Comment: ----------

Performance step: 7

VERIFY/PLACE MOTOR BKR OP SWITCH IN AFTER/TRIP

Standard: MOTOR BKR OP SWITCH IN AFTER/TRIP

CUE: MOTOR BKR OPERATION SWITCH IS IN AFTER/TRIP POSITION

Comment: ----------

Performance step: 8

VERIFY/PLACE GEN BKR OP SWITCH IN AFTER/TRIP

NOTE: (BKR SWITCH LOCATED IN THE B MG SET CONTROL CABINET. DO NOT OPEN CABINET OF RUNNING MG SET)

Standard: GEN BRKR OP SWITCH IN AFTER/TRIP

CUE: GEN BKR OPERATION SWITCH IS IN AFTER/TRIP POSITION

Comment: ----------

Performance step: 9

VERIFY/PLACE AMMETER AND VOLTMETER SELECTOR SWITCHES IN THE PROPER POSITION

NOTE: (ANY SWITCH POSITION EXCEPT OFF IS ACCEPTABLE)

Standard: AMMETER SELECT SWITCH IS IN A, B, OR C AND VOLTMETER SELECT SWITCH IS IN A, B , OR C

CUE: AMMETER SELECT SWITCH IS IN THE A, B, C POSITION
VOLTMETER SELECT SWITCH IS IN THE ~~A, B, C~~ POSITION
1-2, 2-3 or 3-1

Comment: ----------

Performance step: 10

VERIFY/OPEN THE INTERNAL GROUNDING SWITCH

Standard: B MG SET CONTROL CAB INTERNAL GROUNDING SWITCH 1KS IS OPEN

CUE: SWITCH 1KS IS IN THE OPEN POSITION NOTE – switch located in MG set control
Do not open cabinet of running MG set

Comment: ----------

Performance step: 11

Verify/CLOSE THE LOCAL DISCONNECTS ABOVE THE ROD DRIVE POWER CABINETS

Standard: ALL 16 DISCONNECT SWITCHES ARE CLOSED

CUE: ALL DISCONNECT SWITCH POINTERS INDICATE ON
NOTE on top of Rod control CABINETS

Comment: ----------

Performance step: 12

VERIFY/OPEN THE RX TRIP AND BYPASS BRKRS

Standard: BOTH RX TRIP AND BYPASS BRKRS OPEN

CUE: RTA AND RTB INDICATE OPEN ON FRONT OF BRKRS
BYA AND BYB ARE RACKED OUT

Comment: ----------

Performance step: 13

ENSURE NO GROUND OR OVERCURRENT FLAGS ARE UP FOR CABINETS A AND B

Standard: POINTS/ DISCUSSES THAT NO RELAY TARGETS ARE PRESENT ON CABINETS A AND B

CUE: NO TARGETS ARE UP FOR CABINETS A AND B

Comment: ----------

Performance step: 14

*** CLOSE THE A MOTOR BRKR ***

Standard: *** A MOTOR BKR CLOSED ***

CUE: THE A MOTOR BKR GREEN CLOSED LITE IS LIT. SOUNDS FROM THE A MOTOR STARTING ARE HEARD 15 SECS HAVE ELASPED AND THE A MOTOR IS RUNNING NORMALLY

Comment: ----------

Performance step: 15

*** FLASH FIELD FOR A GENERATOR ***

Depress + hold the generator field flash pushbutton

Standard: *** VOLTAGE STEADY AT 235 V ***

CUE: VOLTMETER INCREASES TO 235 VOLTS AND STABLE

Comment: ----------

Performance step: 16

Rotates potentiometer to check range of control

CHECK THE RANGE OF THE MG SET VOLTAGE ADJUST POTENTIOMETER

Standard: RANGE OBSERVED FROM 230 TO 300 VOLTS RETURNED TO 230V

CUE: THE VOLTMETER INDICATION CHANGES BETWEEN 230 AND 300 VOLTS
THE VOLTMETER INDICATES 230 VOLTS AFTER FINAL ADJUSTMENT

Comment: ----------

Performance step: 17

ADJUST THE GENERATOR VOLTAGE

Standard: GENERATOR VOLTAGE INDICATES 260 VOLTS

CUE: GENERATOR VOLTAGE INDICATES 260 VOLTS

Comment: ----------

Tighten top locking screw

locking screw tightened

Performance step: 18

*** CLOSE THE A MG SET GENERATOR BREAKER ***

Standard: *** A MG SET GENERATOR BRKR GREEN CLOSED LITE LIT ***

CUE: A MG SET GENERATOR BRKR GREEN CLOSED LITE LIT

Comment: ----------

TERMINATING CUE: SRO THE UNIT 1 A ROD DRIVE M/G SET IS RUNNING

TIME STOP_____

Facility: BYRON
Task Title: LOCAL CONTROL OF CHARGING

Task No: II
Job Performance Measure No: 9

K/A Reference: 4A4.08 3.8/3.4

Examinee: _____

NRC Examiner: _____

Date: _____

Method of testing:

Simulated Performance _____X_____ Actual Performance _____

Classroom _____ Simulator _____ Plant __X____

READ TO THE EXAMINEE

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions: You are an equipment operator.
Unit 2 is in mode 1.
2CV121 is not controlling properly.

Task Standard: LOCAL CONTROL OF CHARGING

Required Materials: NONE

General References:
BOP CV-26 CV VALVES 121, 131, 182 BYPASSING, ISOLATING, AND RESTORATION

Initiating Cue: THE UNIT SUPERVISOR DIRECTS YOU TO TAKE LOCAL CONTROL OF CHARGING AND BYPASS 2CV121

Critical Task: NO

Validation Time: 20 minutes

PERFORMANCE INFORMATION

START TIME: _____

(Denote critical steps with a **BOLD** *)

Performance step: 1

ENTER BOP CV-26

Standard: LOCATE AND OPEN BOP CV-26

Comment: ----------

Performance step: 2

PROCEED TO THE 2CV-121

Standard: ARRIVE AT 2CV-121 AND ESTABLISH COMMUNICATIONS WITH MCR

CUE: COMMUNICATIONS ESTABLISHED

NOTE: Applicant will find and locate room that valves are in (High Rad Area) Now another AOV will be used to simulate task

Comment: ----------

Unless observed Hy side seal oil cooler temp control TWS 215 Located 426' TURBINE BLDG BY SEAL OIL SKID, inlet isol - TWS214, outlet - TWS216, BYPASS TWS217

Performance step: 3

*** SLOWLY OPEN 2CV8387A (364 U15 AB1) CV PUMP DISCHARGE BYPASS VALVE, WHILE CLOSING 2CV121, TO MAINTAIN CHARGING FLOW ***

NOTE: (WHEN 2CV121 IS BYPASSED CHARGING FLOW INDICATION WILL BE UNAVAILABLE. IF 2CV182 IS NOT ADJUSTED SEAL INJECTION FLOWS WILL PROVIDE REPRESENTATION OF CHARGING)

Standard: *** 2CV121 IS CLOSED AND 2CV8387A IS OPEN ***

CUE: 2CV121 IS CLOSING AND 2CV8387A IS OPENING

Comment: ----------

Performance step: 4

VERIFY M/A STATION 2FK121, IN MANUAL, WITH DEMAND 0%

Standard: 2FK121 IN MANUAL WITH 0% DEMAND

CUE: 2FK121, IN MANUAL, WITH DEMAND 0%

Comment: ----------

Performance step: 5

ADJUST 2CV182, CHARGING HEADER BACKPRESSURE CONTROL VALVE TO MAINTAIN ADEQUATE CHARGING HEADER FLOW FOR REGEN HEAT EXCHANGER, RCP SEAL INJECTION FLOW, DESIRED TRENDS ON VCT AND PZR LEVEL

Standard: COORDINATES WITH RO IN MCR THE POSITIONING OF 2CV182 POSITIONED PROPERLY FOR CURRENT CONDITIONS

CUE: RO IN MCR INFORMS AUO THAT 2CV182 DOES NOT NEED TO BE ADJUSTED

Comment: ----------

Performance step: 6

*** CLOSE 2CV8483A AND 2CV8483B ISOLATION VALVES FOR 1CV121 ***

Standard: * **2CV8483A AND 2CV8483B CLOSED** *

CUE: 2CV8483A AND 2CV8483B CLOSED

Comment: ----------

Performance step: 7

PLACE A CAUTION CARD ON 2CV121, M/A STATION TO INFORM PERSONNEL THAT 2CV121 IS ISOLATED AND BYPASSED

Standard: CAUTION TAG ON 2CV121 M/A STATION

CUE: A CAUTION TAG IS PLACED ON 2CV121 M/A STATION

Comment: ----------

TERMINATING CUE: SRO I HAVE BYPASSED 2CV121

TIME STOP _____

Byron
June 2000 Examination

NRC-Developed Scenarios

Validation Week Changes

8:35

check 2 Majors

Facility: ____BYRON____ Scenario No.: ___1___ Op-Test No.: _00-301_

Examiners: _____ Operators: _____

Objectives:
In accordance with plant procedures: Decrease reactor power, Respond to a failure of the steamline pressure transmitter for MFW pump, Respond to a failure of the controlling pressurizer level channel, Respond to a failure of the Auctioneering Tave circuit, Respond to a Rod Control Urgent Failure alarm, Respond to a faulted S/G, Respond to an ATWS, Respond to a failure of the emergency boration valve, Respond to a S/G tube rupture.

Initial Conditions:
Reactor power is 100%, MOL, Pressurizer level control is selected to 459/460, 1A D/G is OOS, 1A AFW pump is OOS.

3MW/min boration MOL [529]

Turnover:
Reactor Power is 100%, Lower Reactor Power to ~~95% for instrument cross-cals.~~ 90% for TVG-U testing. The 1A D/G is OOS due to scheduled maintenance activities on the control system. It has been OOS for the last 10 hours. The D/G is expected to be returned to service within the next 12 hours.
The 1A AFW pump is OOS due to ~~injection pump replacement~~ BKR replacement. It has been OOS for the last 6 hours. The pump is expected to be returned to service within the next 10 hours. A severe thunderstorm warning is in effect for Stephenson, Winnebago, and Ogle counties for the next 6 hours.

completed. Post Service Surveill

8

Event No.	Malf. No.	Event Type*	Event Description
1		R (RO)	POWER DECREASE (BORATE)
2		N (BP)	POWER DECREASE (TURBINE)
3		I (BP)	S/G STM PRESSURE FOR FEED PUMP CONTROL FAILS LOW (CONTROL OF FP)
4		I (RO)	CONTROLLING PZR LEVEL CHANNEL FAILS LOW (RESTORE LETDOWN)
5		I (RO)	AUCT TAVE CKT FAILS HIGH FOR ROD CONTROL
6		C (RO)	ROD CONTROL URGENT FAILURE (LOGIC CABINET)
7		M (E)	1A S/G STEAM LEAK S/G SAFETIES STICK OPEN
8		C (RO)	RX TRIP FAILURE ATWAS
9		C (~~BP~~) RO	EMERGENCY BORATE VALVES FAILS
10		M (E)	1/B S/G TUBE RUPTURE

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

stator cooling pump failure failure to start auto start standby

Power cabinet 1A/C failure CTL Bank B+D. in bank sel.

Eliminate Replace with RO station

Event No.: _3_

Event Description: Steamline pressure transmitter PT-MS507 fails LOW causing FW Pump speeds to decrease. Manual control of the FW Pump Master controller is expected. The steam dumps are affected if operated in STM PRESS mode, the dumps will not open in AUTO since measured pressure is ZERO.

Time	Position	Applicant's Actions or Behavior
	CUE	Annunciator 1-15-A9/B9/C9/D9 S/G 1 LEVEL DEVIATION HIGH LOW 1-15-A3/B3/C3/D3 S/G 1 FLOW MISMATCH STM FLOW LOW PI-507 INDICATION AT BOTTOM OF SCALE PI-507 COMPUTER INPUT LOW DECREASING S/G LEVELS DUE TO DECREASING FEEDWATER FLOW SINCE FW PUMPS DECREASE SPEED
	BOP	Identify/report PT-507 failed low
	BOP	Response per AR 1-15-A9 and 1-15-A3 Take MAN control of Master FW Pump Speed Controller and raise speed to increase FW flow If required, take MAN control of FW REG VALVES and open to restore level Recover S/G levels and FW flows. Adjusting feed pump speed as necessary Return FW REG VALVES to AUTO if required
	SRO	Inform SM/MAINT of PT-507 failure/status
		MAY Refer to 1BOA INST-2 per ARP, but are not in it

Event No.: _4_
Event Description: Selected controlling PZR level channel 1LT-459 fails low. The result is isolation of CVCS letdown, rising charging flow, PZR heaters denergize, and rising PZR level.

Time	Position	Applicant's Actions or Behavior
	CUE	Annunciators 1-12-A4 PZR LVL LOW HTRS OFF LETDOWN SECURED 1-12-B4 PZR LEVEL CONT DEV LOW PZR heaters tripped off Letdown Isolation Valve LCV-459 & Orfice Isolation valves 1CV8149A/B/C close Charging flow control CV-121 throttles open to increase flow
	RO	Identify/report failed PZR level channel LT-459
	SRO	Implement 1BOA INST-2 "Operation with a failed instrument channel", attachment C "Pressurizer level channel failure" and direct operator action
BOP Hold on rise Ramp	RO	Check PZR Level Verify level normal (56-60%) If not take manual control of either the master level controller LK-459 or 1CV121 (FK-121) valve and adjust charging flow to minimum while maintaining RCP seal injection flow within required limits Select operable channel on LEVEL CHANNEL SELECTOR by placing to 461/460 position Verify channel 460 or461 selected on PZR level recorder
	RO	Reestablish normal letdown per 1BOPO CV-17 Place letdown pressure controller PCV-CV131 in MAN and raise demand Place letdown Hx Out temperature controller TCV-CC130A to MAN and raise demand to 60% Open Letdown Line Isolation valve LCV-CV460 Verify open inservice regen Hx isolation valves CV8324A/B & CV8389A/B Verify Letdown Line CNMT isolation valves CV8160 & 8152 When plant conditions are stable and PZR level at normal (58-60%), place FCV-121 in AUTO Adjust in MAN Cent Chg Pump Flow controller FK-121 to establish 100 gpm charging flow with 8-10 gpm seal injection flow Open the selected letdown orifice isolation valves CV8149 A/B/C to establish desired letdown flow Restore PZR Heaters

Event No.: _5_

Event Description: Rod Control Auct Tave Ckt fails. Rods move in AUTO.

Time	Position	Applicant's Actions or Behavior
	SRO	Consult with SM for status of Manual Rod Control
	RO NOTE	Place Rod Control in Manual Insert rods 7 steps Withdraw rods 7 steps INSERT Power CABINET failure Here Check Tave-Tref stable and within 1F Restore to within 1F adjust rods, adjust turbine load, or adjust RCS boron concentration
	SRO	Consult with SM for status of AUTO Rod Control
	RO	Check if Rod Control can be placed in AUTO TURBINE LOW POWER C5 NOT LIT Check Tave-Tref stable and within 1F Place Rod Control in AUTO (if desired) ~~**PZR Level will also be affected by this**~~ ~~**Check PZR level normal & stable**~~ ~~**Manually restore PZR to program level**~~ } eliminated
	SRO	Check Technical Specifications: Section 3.1.4, 3.1.5, 3.1.6 Rod alignments and insertion limits

Event No.: _6_

Event Description: Rod Control Cabinet Urgent Failure due to ~~Logic~~ Power IAC Cabinet (~~Only SCDE rod will be able to move in bank select~~) control BANK B & D Rods will be able to move in Bank select

Time	Position	Applicant's Actions or Behavior
	CUE	Annunciator: 1-10-C6 ROD CONT URGENT FAILURE
	RO	Identify/report ROD CONT URGENT FAILURE 1BAR 1-10-C6
	SRO	Implement 1BOA ROD-2 "FAILURE OF RODS TO MOVE" and direct operator actions Inform Nuclear Engineering/Maint to investigate problem. Confirm trip ability of rods Dispatch local operator to investigate
	RO	Stabilize plant Place rod control in manual stop boration or dilution
	BOP	Stop turbine load changes
	RO	Evaluate cause of rods failing to move: Check PWR RNG FLUX HIGH ROD STOP ALARM Not Lit IR HIGH FLUX ROD STOP C-1 ALARM Not Lit TURBINE LOW POWER INTLK C-5 bypass permissive Not LIT BANK D ROD STOP C-11 ALARM Not Lit Check for ROD URGENT failure: ROD CONT URGENT FAILURE ALARM LIT Maintain Tave and Tref within 1F Adjust turbine load and adjust boron concentration
	SRO	Contact SED and/or IMD for guidance and troubleshooting Consult with SED and/or IMD to determine if alarm can be reset ~~**LOGIC Cabinet failure and alarm can not be reset**~~ control BANK B & D Rods will be able to move in BANK select

Event No.: _6_ POWER LAC

Event Description: Rod Control Cabinet Urgent Failure due to ~~Logic~~ Cabinet ~~(Only SCDE rod will be able to move in bank select)~~
Control BANK B & D rods will be able to move in bank select

Time	Position	Applicant's Actions or Behavior
	SRO	Check Technical Specifications: 3.1.4 All Shutdown and control rods shall be OPERABLE
	RO/BOP	Maintain Tave and Tref within 1F adjust turbine load, adjust boron concentration
	CREW	Discuss the ability of the rods ONLY SCDE RODS WILL MOVE SAFETY ISSUE

ADDED #7 failure

Page #10

Station Cooling water 1A pump trip 1B fails to auto start
start manually 45 sec or Rx trip
CUE 1-18-A14 station clg water pump trip
BOP identify/report 1A station clng water pump trip
BOP verify/start other pump
DISPATCH local operator to investigate and reset alarm
SRO inform SM/maint of failure/status

Event No.: ~~7/8~~ 8/9

Event Description: 1A S/G Safeties Stick Open , Rx Trip ATWAS, Emergency Borate Valve Fails, 1B S/G Tube Rupture

Time	Position	Applicant's Actions or Behavior
	CUE	Increased steam flow on 1A S/G S/G pressure decreasing RCS temp decreasing PZR level and pressure decreasing Rx Power increasing
	RO Sim	Identify/report Rx Power Increasing, Steam Flow increasing from 1A S/G - S/G Safties stick open When asked tell them S/G safety is open
	SRO	Direct Operator actions to trip the Rx and implement 1BEP-0 "REACTOR TRIP OR SAFETY INJECTION."
	RO	Manually trips RX from MCR- **Rx will not trip ATWAS**
	SRO	Implement 1BFR-S.1 "RESPONSE TO NUCLEAR POWER GENERATION/ATWS" and direct operator actions.
	RO	Verify RX Trip: Rod bottom lights -NOT LIT Rx Trip and Bypass breakers closed - RTA,BYA,RTB,BYB Neutron flux NOT decreasing Manually trip RX 1PM05J,6J Manually insert Control Rods - ~~**SCDE RODS will move**~~ **(CRITICAL TASK)** Control Rods B & D will move in Bank Select
	BOP	Manually trip the turbine Check AFW pumps running - Manually start pumps

Event No.: ~~8~~ 9

Event Description: 1A S/G Safeties Stick Open , Rx Trip ATWAS, Emergency Borate Valve Fails, 1B S/G Tube Rupture

Time	Position	Applicant's Actions or Behavior
	RO (Cont)	Stop Reactivity insertion from RCS cooldown: Check RCS temp decreasing uncontrolled S/G pressure decreasing uncontrolled
	BOP	Check Main Steamline Isolation All MSIV and MSIV bypass valves closed Identify faulted S/G: Check pressure in all S/G - 1A S/G faulted Pressure decreasing uncontrolled or completely depressurized Isolate faulted S/G: Check FW to faulted S/G isolated: FW ISOLATION MONITOR LIGHTS panel - LIT for 1A S/G If not manually isolate from MCR and locally Close AFW isol vlaves for 1A S/G - 1AF013A,E Check S/G PORV on 1A S/G closed - 1MS018A Verify S/G blowdown isol valves on 1A S/G closed - 1SD002A,B Verify S/G blowdown sample isol valve on 1A S/G closed- 1SD005A
	NOTE	(The Rx can be tripped locally 5 minutes from start of ATWS)
	RO	Check Core Exit TC: Average of 10 highest < 1200F Verify Rx subcrtiical - PR < 5%, IR negative SUR
	SRO	Direct Operator actions and go to 1BEP-0 "REACTOR TRIP OR SAFETY INJECTION."

Event No.: 7_8

Event Description: 1A S/G Safeties Stick Open , Rx Trip ATWAS, Emergency Borate Valve Fails, 1B S/G Tube Rupture

Time	Position	Applicant's Actions or Behavior
	SRO NOTE	Implement 1BEP-2 " FAULTED S/G ISOLATION" and direct operator actions. **(Insert 1B S/G tube Rupture Now)** 500 GPM
	BOP	Check Main Steamline Isolation: All MIV and MSIV Bypass valves closed Check if any S/G pressure boundary is intact: S/G pressures stable or increasing Identify faulted S/G: 1A S/G faulted Isolate faulted S/G 1A S/G is isolated (performed in FRS-1) Monitor AFW pump suction pressure: AF PUMP SX SUCT VLV ARMED Alarm - NOT LIT Check Secondary Radiation: Secondary Radiation trends - Normal: Reset CNMT Isol Phase A - IAW 1BOA PRI-5 Request Chem to sample all S/G's fro activity: Open S/G blowdown sample isol valves at CHEM request 1SD005A (1A), 5C (1B), 5D (1C), 5B (1D)
	SRO	Go to 1BEP-1 "LOSS OF REACTOR OR SECONDARY COOLANT" and direct operator actions.

Event No.: ~~10~~ 11

Event Description: 1A S/G Safeties Stick Open , Rx Trip ATWAS, Emergency Borate Valve Fails, 1B S/G Tube Rupture

Time	Position	Applicant's Actions or Behavior
	SRO	Implement 1BEP-1 "LOSS OF REACTOR OR SECONDARY COOLANT" and direct operator actions.
	RO	Check status of RCP's: RCP's are secured
	BOP	Check S/G's Secondary pressure boundaries: 1A S/G faulted but previously isolated Check intact S/G levels: NR levels > 10% Control feed flow to maintain S/G NR levels 10-50% NR level not increasing uncontrolled: **1B S/G increasing uncontrolled tube rupture**
	SRO	Go to 1BEP-3 "STEAM GENERATOR TUBE RUPTURE" and direct operator actions.
	THE SCENARIO CAN BE ENDED AT CHIEF EXAMINER'S	
	DISCRETION	

Event No.: _10_

Event Description: _ 1A S/G Safeties Stick Open , Rx Trip ATWAS, Emergency Borate Valve Fails, 1B S/G Tube Rupture

Time	Position	Applicant's Actions or Behavior
	SRO	Implement 1BEP-3 "STEAM GENERATOR TUBE RUPTURE" and direct operator actions.
	RO	Check status of RCP's: RCP's are secured
	BOP	Identify ruptured S/G: Unexpected rise in level - 1B S/G ruptured Isolate flow from ruptured S/G: 1B S/G PORV controller in AUTO Check 1B S/G PORV - Closed 1MS018A Verify ruptured S/G blowdown isol valves closed - 1SD002C,D Close ruptured S/G MSIV and MSIV Bypass valve - Closed Check PORV on intact S/G's available for RCS cooldown: 1MS018C for 1C S/G 1MS018D for 1D S/G Check ruptured S/G level: 1B S/G NR level > 10% Verify AFW isol valves on 1B S/G closed - 1AF013B,F Check ruptured S/G pressure: 1B S/G pressure > 320 psig

Event No.: _10_

Event Description: _ 1A S/G Safeties Stick Open , Rx Trip ATWAS, Emergency Borate Valve Fails, 1B S/G Tube Rupture

Time	Position	Applicant's Actions or Behavior
	RO	Initiate RCS cooldown: Determine required core exit temp from table: Lowest ruptured S/G pressure Check PZR pressure < 1930 psig: PZR LOW PRESS SI BLOCK PERMISSIVE P-11 - LIT Block Steamline Isol SI: Place STM LINE SI RESET/BLOCK switches (A and B TRN) BLOCK Dump steam at maximum rate using 1C and 1 D S/G PORVS **(CRITICAL TASK)** (Establish a good cooldown rate and brief)
The scenario can be ended at Chief Examiner's discretion.		

Facility: ____BYRON____ Scenario No.: ____2____ Op-Test No.: __00-301__

Examiners: _____ Operators: _____

Objectives:
In accordance with plant procedures: Respond to a failure of the feed flow transmitter for #1 FRV, Respond to a failure of the power range channel N-41, Increase reactor power, Respond to a failure of the level transmitter for VCT, Respond to a large break LOCA, Respond to a failure of automatic FWI, Respond to a failure of automatic sump swapover.

Initial Conditions: 50
Reactor power is ~~45~~%, MOL, Pressurizer level control is selected to 459/460.
1A D/G is OOS, 1A AFW pump is OOS. FW 510 selected as controlling channel
FW 530

Turnover:
Reactor Power is ~~45~~ 50%. STEP 63 OF 1BGP 100-3, POWER INCREASE TO 100%. The 1A D/G is OOS due to scheduled maintenance activities on the control system. It has been OOS for the last 10 hours. The D/G is expected to be returned to service within the next 12 hours. The 1A AFW pump is OOS due to ~~injection pump rep~~ bearing replacement. It has been OOS for the last 6 hours. The pump is expected to be returned to service within the next 10 hours. A severe thunderstorm warning is in effect for Stephenson, Winnebago, and Ogle counties for the next 6 hours.

Event No.	Malf. No.	Event Type*	Event Description
1	RX04A	I (BP)	FEED FLOW TRANSMITTER FOR #1 FRV FAILS HIGH
2	NI09A	I (RO)	PR CHANNEL N-41 FAILS HIGH
3		R (RO)	POWER INCREASE (DILUTE 50 GALLONS)
4		N (BP)	POWER INCREASE (TURBINE)
5	CV17	I (RO)	LT-185 INDICATING RECORDER FOR VCT FAILS HIGH DIVERT TO HUT NO AUTO SWAPOVER
6	TH04A	M (E)	LARGE BREAK LOCA
Pre Load 7	Pre Load FW 41A-D FW 42A-D	C (BP)	FAILURE OF FWI FW41A-D RF RP43 out FW42A-D RP65 out
Pre Load 8	RH04A+B	C (RO)	FAILURE FOR AUTO SUMP SWAPOVER
Pre Load	RP15B	C (RO)	1B CV pump fail to start.
	RP28B		
	RP28A		

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

Event No.: _6/7 failure of 1B CCP to start

Event Description: Large break LOCA, Failure of FWI, Failure for Auto Sump Swapover

Time	Position	Applicant's Actions or Behavior
	RO	Verify ECCS pumps running Both CCP - manually start 1B CCP failed to start in auto Both RH Both SI
	BOP	Verify group 2 RCFC accident mode status lights-Lit Verify CNMT Isolation Phase A: Group 3 CNMT Isol monitor lights-LIT Verify CNMT Ventilation Isolation: Group 6 CNMT VENT ISOI monitor lights-LIT Verify AF system: AF isolation valves open 1AF013A,B,C,D,E,F,G,H AF flow control valves throttled 1AF005A,B,C,D,E,F,G,H Verify both CC pumps running Verify both SX pumps running Check Main Steamline Isolation: All S/G pressures > 640 psig CNMT pressure on 1PR-937 or 1PI-CS934-937< 8.2 psig Verify MSIV and MSIV bypass valves closed Check if CNMT Spray is required: CNMT pressure on 1PR-937 or 1PI-CS934-937 > 20 psig Group 6 CS monitor lights - LIT Group 6 Phase B Isolation monitor lights - LIT Stop all RCP's-(previously performed by RO) Check eductor suction flow on running pumps > 15 gpm 1FI-CS013,14

Event No.: _6_
Event Description: Large break LOCA, Failure of FWI, Failure for Auto Sump Swapover

Time	Position	Applicant's Actions or Behavior
NOTE : AT SOME TIME CNMT PRESSURE COULD RISE TO AN ORANGE PATH FOR CONTAINMENT CSFST. IF SO THE PERFORMANCE OF 1BFR-Z.1 IS REQUIRED.		
	SRO	Implement 1BFR-Z.1 "RESPONSE TO HIGH CONTAINMENT PRESSURE " and direct operator action
	BOP	Verify CNMT Isol phase: CNMT Isol phase A valves closed Group 3 CNMT Isol Mon lights- LIT eliminated Verify CNMT Vent Isol: CNMT Vent Isol valves closed Group 6 CNMT Vent Isol mon lights- LIT Check if CNMT spray is required: CNMT pressure > 20 psig 1PR-937 or 1PI-CS934-937 Verify CS system valves- proper emergency alignment: CS pump suction valves: Train A: RWST suction valve 1CS001A Open Sump suction valve 1CS009A open OR Train B: RWST suction valve 1CS001B Open Sump suction valve 1CS009B open CS pump header isol valves closed- 1CS007A,B CS eductor spray additive valves open-1CS019A,B CS eductor inlet flow control valves open-1CS010A,B Verify both CS pumps running

Event No.: _6_

Event Description: Large break LOCA, Failure of FWI, Failure for Auto Sump Swapover

Time	Position	Applicant's Actions or Behavior
	BOP (Cont)	Verify CNMT Isol Phase B valves closed: Group 6 Phase B Isol monitor lights-LIT Stop all RCP's eliminated Check CS flow indications- On Scale: CS pump discharge flow > 200 gpm 1FI-CS011/012 CS eductor suction flow > 15 gpm 1FI-CS013/014 CS eductor additive flow > 5 gpm 1FI-CS015/016 Reset CS signal When Spray additive tank LO-2 level lights LIT then close CS eductor spray additive valves: 1CS019A,B Align SX Cooling Towers: All 8 riser valves Open- 0SX163A thru H All 4 Hot Water Basin Bypass valves Closed-0SX162A,B,C,D All 8 Sx Cooling Tower fans running in Hi speed Verify RCFC's running in accident Mode: Group 2 RCFC Accident Mode status lights - LIT Verify Main Steamline Isolation: All MSIV and MSIV Bypass valves closed Check if feed flow should be isolated to any S/G: Any S/G pressure decreasing in an uncontrolled manner or Any S/G completely depressurized
	SRO	Return to procedure in effect, 1BEP-1 " LOSS OF REACTOR OR SECONDARY COOLANT" and direct operator actions.

Facility: ____BYRON____ Scenario No.: ____3____ Op-Test No.: __00-301__

Examiners: _____ Operators: _____

Objectives:
In accordance with plant procedures: Respond to a failure of the charging valve controller, Decrease reactor power for instrument cross cals, Respond to a failure of the steam dumps, Respond to a failure of the reactor protection system, Respond to a steam line rupture in containment, Respond to a failure of the MSIV's, Respond to a failure of containment spray pumps.

Initial Conditions:
Reactor power is 100%, MOL, Pressurizer level control is selected to 459/460, 1A D/G is OOS, 1A AFW pump is OOS, Steam Dumps in pressure mode due to testing.

Turnover:
Reactor Power is 100%, Lower Reactor Power to 95% for instrument cross-cals. The 1A D/G is OOS due to scheduled maintenance activities on the control system. It has been OOS for the last 10 hours. The D/G is expected to be returned to service within the next 12 hours.
The 1A AFW pump is OOS due to ~~injection~~ pump bearing replacement. It has been OOS for the last 6 hours. The pump is expected to be returned to service within the next 10 hours. Steam Dumps in pressure mode due to testing. A severe thunderstorm warning is in effect for Stephenson, Winnebago, and Ogle counties for the next 6 hours.

Event No.	Malf. No.	Event Type*	Event Description
1	CV10	I (RO)	CHARGING VALVE CONTROLLER FAILS FULL OPEN
2		R (RO)	POWER DECREASE (BORATE)
3		N (BP)	POWER DECREASE (TURBINE)
4 Preload	MS06E	I (BP)	STEAM DUMPS FAIL OPEN Override ZAI1PRS0759S Delete After TAVG mode
5	~~RPS1A~~	C (RO)	INADVERTENT SI Override ZDISIA1 Actuate. Delete After Actuation
6	MS07D	M (E)	MAJOR STEAM LINE BREAK IN CONTAINMENT
7 Preload	Preload MS01A-D	C (BP)	FAILURE OF ALL MSIV'S TO CLOSE (UNCONTROLLED DEPRESSURIZATION ALL S/G'S)
8 Preload RFCS04	RFCS05 ~~RFCS01A~~	C (BP)	FAILURE OF CONTAINMENT SPRAY PUMPS IN AUTO

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

Event No.: _5_

Event Description: Inadvertent SI, Major Steam Line Break in CNMT, Failure of MSIV's to close, Failure of CNMT spray pumps in Auto

Time	Position	Applicant's Actions or Behavior
	SRO	Implement 1BEP ES-1.1 "SI TERMINATION" and direct operator actions. **T. S. 3.3.1-16, 3.3.2-1.b FOR INADVERTENT SI**
	RO	Reset SI if necessary: Depress both SI reset pushbuttons Verify SI ACTUATED permissive light - NOT LIT Verify AUTO SI BLOCKED permissive light - LIT
	BOP	Reset CNMT Isolation: Reset CNMT Isol Phase A - IAW 1BOA PRI-5 ATT E Reset CNMT Isol Phase B - IAW 1BOA PRI-5 ATT E Reset CNMT Vent Isol Check SACs running Open INST AIR CNMT Isol Valves - 1IA065,66
	RO	~~Realign CCPs:~~ ~~Stop all but 1 CCP and place in Standby~~ ~~Check RCS pressure stable or increasing~~ ~~Terminate High Head ECCS:~~ ~~Check CCP suction aligned to RWST~~ ~~Reset SI recirc sump isol valves~~ ~~1SI8811A/1CV8110 and 1SI8811B/1CV8111~~ ~~Reset CCP miniflow isol valves - 1CV8114, 8116~~ ~~Verify CCP miniflow valves open - 1CV8110,8111,8114,8116~~ ~~Close CCP to cold leg isol valves - 1SI8801A,B~~ eliminated

Event No.: _5/6_

Event Description: Inadvertent SI, Major Steam Line Break in CNMT, Failure of MSIV's to close, Failure of CNMT spray pumps in Auto

Time	Position	Applicant's Actions or Behavior
	RO (Cont)	Establish charging flow: Place 1CV182 controller at 0% demand Open charging line CNMT isol valves - 1CV8105,8106 Throttle 1CV182 to maintain RCP seal injection flow 8-13 gpm Control charging flow to maintain PZR level: Throttle 1CV121 to maintain PZR level > 4% Check if SI pumps should be stopped: RCS pressure stable or increasing and > 1625 psig Stop SI pumps and place in standby Check if RH pumps can be stopped: Check RH pump suction aligned to RWST Stop RH pumps and place in standby Verfiy ECCS flow not required: RCS subcooling acceptable - ICONIC display or ATT A PZR level > 4% **(Start Main Steam Line Rupture)** **1D S/G major steam line break in CNMT (MSIV's fail to shut)** **Pressure in all S/G's decreasing in an uncontrolled manner.** PUT ON previous page
	SRO	Per fold out page go To 1BEP-2 " FAULTED S/G ISOLATION" and direct operator actions. → PUT ON PREVIOUS PAGE
		The Crew could go To 1BEP-1 Then To 1BEP-2
		Through The fold out page

eliminated

Event No.: _6_

Event Description: Inadvertent SI, Major Steam Line Break in CNMT, Failure of MSIV's to close, Failure of CNMT spray pumps in Auto

Time	Position	Applicant's Actions or Behavior
NOTE : WITH COOLDOWN AN ORANGE PATH MAY EXIST FOR INTEGRITY CSFST. IF SO THE PERFORMANCE OF 1BFR-P.1 IS REQUIRED.		
	SRO	Implement 1BFR-P.1 "RESPONSE TO IMMINENT PRESSURIZED THERMAL SHOCK CONDITION" and direct
	RO	Check RCS pressure: RCS pressure > 325 psig Check RCS cold leg temperature: RCS cold leg temperature decreasing
	BOP	Try to stop RCS cooldown Verify S/G PORV's closed, Steam Dumps closed Control feed flow to non-faulted SG Minimize cooldown from faulted S/G: Verify MSIV and MSIV Bypass valves shut ALL S/G faulted then Control feed flow at 25 gpm to each S/G
	RO	Check PZR PORV Isolation valves: PORV isol valves energized - 1RY8000A,B PORV isol valves at least one open - 1RY8000A,B Check if PZR PORVs should be closed: PZR pressure < 2315 psig or if CORS in service < setpoint PZR PORVs closed - 1RY455A,456

Event No.: _6_

Event Description: Inadvertent SI, Major Steam Line Break in CNMT, Failure of MSIV's to close, Failure of CNMT spray pumps in Auto

Time	Position	Applicant's Actions or Behavior
	RO (Cont)	Check if ECCS flow is in service: SI pumps running or CCP to cold legs injection isol valve open - 1SI8801A,B Check if ECCS flow can be terminated: RCS subcooling acceptable - Per ATT A and Figure 1BFR P.1-3 AND RVLIS plenum region ≥ 15% If subcooling is acceptable and no RCP is running then start one RCP IAW 1BOP RC-1 "STARTUP OF A RCP." Reset SI if necessary: Depress both SI reset pushbuttons Verify SI ACTUATED permissive light - NOT LIT Verify AUTO SI BLOCKED permissive light - LIT
	BOP	Reset CNMT Isolation: Reset CNMT Isol Phase A - IAW 1BOA PRI-5 ATT E Reset CNMT Isol Phase B - IAW 1BOA PRI-5 ATT E Reset CNMT Vent Isol Check SAC running Open INST Air CNMT Isol valves - 1IA065, 066
	RO	Stop ECCS pumps and place in standby: Si pumps All but 1 CCP Check RH pump suction aligned to RWST Stop RH pumps and place in standby

Event No.: _6_
Event Description: Inadvertent SI, Major Steam Line Break in CNMT, Failure of MSIV's to close, Failure of CNMT spray pumps in Auto

Time	Position	Applicant's Actions or Behavior
	RO (Cont)	Terminate High- Head ECCS: Check CCP suction aligned to RWST Reset SI recirc sump isol valves : 1SI8811A/1CV8110 1SI8811B/1CV8111 Reset CCP miniflow isol valves - 1CV8114, 8116 Verify CCP miniflow isol valves open - 1CV8110,8111,8114,8116 Close CCP cold leg injection isol valves - 1SI8801A,B Establish charging flow: Place 1CV182 controller at 0% demand Open charging line CNMT isol valves - 1CV8105, 8106 Throttle 1CV182 to maitain seal injection flow 8-13 gpm per pump Control charging flow to maintain RCS inventory as necessary Verify ECCS flow not required: RCS subcooling acceptable - ICONIC Display or ATT A AND RVLIS plenum region ≥ 15% Check RCS hot leg temps: RCS hot leg temps stable If temp increasing control feed ans steam flow to stabilize If temp decreasing reevaluate cooldown isolation Isolate all SI accumulators: Check RCS pressure < 1930 psig Check the following: RCS subcooling acceptable ICONIC Display or ATT A and Figure 1BFR P.1-1 and RVLIS Plenum region ≥ 15% Energize SI Accumulator discharge isol valves - 1SI8808A,B,C,D Close SI Accumulator discharge isol valves - 1SI8808A,B,C,D

Event No.: _6_

Event Description: Inadvertent SI, Major Steam Line Break in CNMT, Failure of MSIV's to close, Failure of CNMT spray pumps in Auto

Time	Position	Applicant's Actions or Behavior
	RO (Cont)	Depressurize RCS to decrease RCS subcooling: Check for all of the following: RCS subcooling acceptable -ATT A and Figure 1BFR P.1-2 PZR level < 76% (62% adverse) RCS pressure > 125 psig Depressurize RCS using normal PZR spray - 1RY455B,C If not availalbe use 1 PZR PORV - 1RY455A, 456 OR PZR AUX spray: close normal spray valves - 1RY455B,C Open aux spray valve - 1CV8145 Close charging to RC loop isol 1CV8146,7 Maintain RCS subcooling acceptable: ICONIC Display or ATT A and Figure 1BFR P.1-1 Manually start and align ECCS pumps to maintain RCS subcooling acceptable as necessary Depressurize RCS until **ANY** of the following is satisfied: RCS subcooling between) and 10F per Figure 1BFR P.1-5/6 OR PZR level > 76% (62% adverse) OR RCS pressure < 125 psig Stop RCS depressurization Check PZR level > 21% (50 % adverse) Check Rx M/U control system: Makeup control set > RCS Boron Conc M/U set for AUTO - MODE SELECT switch in AUTO MAKEUP CONT switch start Establish Letdown per 1BOP CV-17 OR Excess Letdown per 1BOP CV-15

Event No.: _6_

Event Description: Inadvertent SI, Major Steam Line Break in CNMT, Failure of MSIV's to close, Failure of CNMT spray pumps in Auto

Time	Position	Applicant's Actions or Behavior
	RO (Cont)	Check CCP suction aligned to VCT Check PZR level < 76% (62% adverse) Control/Maintain PZR pressure stable Verify adequate RCS depressurization: RCS subcooling 0-10F per Figure 1BFR P.1-5,6 OR RCS pressure < 125 psig Determine if RCS Temp Soak is required: Cooldown rate in RCS cold legs > 100F in any 60 minute period Perform all of the following: Do not cool down RCS until temp stable for 1 hour Do not increase RCS pressure during that time Perform actions of other procedures in effect which do not cool down or increase RCS pressure until RCS temp soak complete **(1BEP-2 or 1BCA-2.1 or 1BFR-Z.1)** RCS cooldown is permitted after 1 hour Maintain RCS pressure and cold leg temp within limits of Figure 1BFR P.1-4 Maintain cooldown rate in RCS < 50F in any 1 hour period
	SRO	Return to procedure in effect, 1BEP-2 or 1BCA-2.1 or 1BFR-Z.1 and direct operator actions.

Event No.: _6/8_
Event Description: Inadvertent SI, Major Steam Line Break in CNMT, Failure of MSIV's to close, Failure of CNMT spray pumps in Auto

Time	Position	Applicant's Actions or Behavior
NOTE : AT SOME TIME CNMT PRESSURE COULD RISE TO AN ORANGE PATH FOR CONTAINMENT CSFST. IF SO THE PERFORMANCE OF 1BFR-Z.1 IS REQUIRED.		
	SRO	Implement 1BFR-Z.1 "RESPONSE TO HIGH CONTAINMENT PRESSURE " and direct operator action
	BOP	Verify CNMT Isol phase: CNMT Isol phase A valves closed Group 3 CNMT Isol Mon lights- LIT Verify CNMT Vent Isol: CNMT Vent Isol valves closed Group 6 CNMT Vent Isol mon lights- LIT Check if CNMT spray is required: CNMT pressure > 20 psig 1PR-937 or 1PI-CS934-937 Verify CS system valves- proper emergency alignment: CS pump suction valves: Train A: RWST suction valve 1CS001A Open Sump suction valve 1CS009A open OR Train B: RWST suction valve 1CS001B Open Sump suction valve 1CS009B open CS pump header isol valves closed- 1CS007A,B CS eductor spray additive valves open-~~1CS019A,B~~ Values closed 1CS019A,B closed, no pumps running Failure when valves open pumps will start when in normal (Critical Task) CS eductor inlet flow control valves open-1CS010A,B place CS pump test switch in test manually open valves place CS pump test switch in normal - pumps start Verify both CS pumps running: ~~**NO PUMPS RUNNING Failure**~~ ~~Manually actuate CS and Phase B Isolation~~ ~~Locally start 1 CS pump per 1BOA ELEC-5~~ **(CRITICAL TASK)** ~~**T.S. 3.3.2.2.a, 3.3.2.2.b FOR CS PUMPS**~~ NEXT page

Facility: ____BYRON____ Scenario No.: ___4___ Op-Test No.: __00-301__

Examiners: _____ Operators: _____

Objectives:
In accordance with plant procedures: Increase reactor power, Respond to a failure of the #1 FRV controller, Respond to a failure of power range channel N-42, Respond to a failure of #1 THot channel, Respond to a LOCA outside containment, Respond to a failure of the RWST valves, Respond to a failure of the Turbine.

Initial Conditions:
Reactor power is 45%, MOL, Pressurizer level control is selected to 459/460.
1A D/G is OOS, 1A AFW pump is OOS.

Turnover:
Reactor Power is 45%. STEP 63 OF 1BGP 100-3, POWER INCREASE TO 100%. The 1A D/G is OOS due to scheduled maintenance activities on the control system. It has been OOS for the last 10 hours. The D/G is expected to be returned to service within the next 12 hours. The 1A AFW pump is OOS due to injection pump replacement. It has been OOS for the last 6 hours. The pump is expected to be returned to service within the next 10 hours. A severe thunderstorm warning is in effect for Stephenson, Winnebago, and Ogle counties for the next 6 hours.

Add info from SC #1

Event No.	Malf. No.	Event Type*	Event Description
1		R (RO)	POWER INCREASE (DILUTE 50 GALLONS)
2		N (BP)	POWER INCREASE (TURBINE)
3		I (BP)	#1 FRV DRIFTS SHUT SLOWLY
~~4~~		~~I (RO)~~	~~PR CHANNEL N-42 FAILS LOW~~
5		I (RO)	#1 THOT (TAVE) CKT FAILS HIGH (LCO 3.0.3)
6		M (E)	LOCA OUTSIDE CONTAINMENT
7		C (RO)	FAILURE OF RWST VALVES TO OPEN
8		C (BP)	FAILURE OF TURBINE TO TRIP

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

Event No.: _1/2_

Event Description: Power Increase by diluting and using the turbine_

Time	Position	Applicant's Actions or Behavior
	SRO	Implement actions of 1BGP 100-3, step F.61:
	SRO	Direct increase from ~~45~~ 50% power
	CREW	Review applicable precautions, limitations, and actions
	RO	Initiate dilution: (BOP CV-5) Place MU MODE CONT SWITCH to STOP position Set MU MODE SELECT to DIL or ALT DIL position Set 1FK-111 PW/TOTAL Flow Cont to desired dilution rate Verify 1CV111A in AUTO Set 1FY-0111 Primary Water Control Preset Counter to desired volume Verify 1CV11B & 1CV110B in AUTO Place MAKE-UP CONTROL Switch to START Verify proper operation of valves & PW (CV111A &111B open, PW pump is running, CV110B throttles open [if ALT DIL]) Verify PW flow on recorder Verify B/U Heaters ON and spray valves 1RY455B/C modulates open
	BOP	Initiate turbine load increase: DEPRESS the LOAD RATE MW/MIN Pushbutton Verify/Enter the desired load rate Depress the REF Pushbutton Using the number Pushbuttons, SET in MW on the REFERENCE DEMAND window When ready to begin the load decrease, depress GO Verify load increases

Event No.: _4_
Event Description: Power Range Channel N-42 fails LOW

Time	Position	Applicant's Actions or Behavior
	CUE	Annunciator (1-10-A3) PWR RNG HIGH STPT RX TRIP ALERT (1-10-B5) PWR RNG FLUX HIGH ROD STOP (1-10-C3) PWR RNG FLUX RATE RX TRIP ALERT (1-10-C4) PWR RNG CHANNEL DEV N-42 INDICATION AT BOTTOM OF SCALE ROD STOP
	RO	Identify/report failure of Power Range NI Channel N-42
	SRO	Implement 1BOA INST-1 "NUCLEAR INSTRUMENTATION MALFUNCTION", Attachment A "PR CHANNEL FAILURE" and direct operator action.
	RO	Place ROD BANK SELECT switch in MANUAL Check for ROD STOP (1-10-B5) NOT LIT Place Rod Stop Bypass Switch to bypass for N-42 Check Tave-Tref within 1F and restore Tave by: Control Rods, Turbine Load, Boron Concentration
	BOP	Check S/G levels normal and stable
	BOP	Bypass/Defeat channel N-42 Place Detector Current Comparator Upper Section Defeat to N-42 Place Detector Current Comparator Lower Section Defeat to N-42 Place power Mismatch Bypass to N-42 Place Rod Stop Bypass to N-42 (performed earlier) Place Comparator Channel Defeat to N-42 Trip Bistables Remove Control Power Fuses at N-42 "A" Drawer Bistable NC41P tripped LO RX TRIP Bistable NC41R tripped HI RX TRIP Bistable NC41U/K tripped POS/NEG RATE TRIP

Eliminated

Event No.: _4_

Event Description: Power Range Channel N-42 fails low

Time	Position	Applicant's Actions or Behavior
	BOP (CONT)	Locally trip OTΔT bistables on Channel II OTΔT Trip-TB421C OTΔT Runback TB421D
	RO	Select Operable channel Loop ΔT Place Rod Control in automatic C5 permissive NOT LIT Tave-Tref within 1F Place Rod Control in AUTO
	SRO	Check Technical Specifications 3.3.1 Function 2, 3, &6, Required channels operable 4- ACTION Place inop channel in trip within 6 hours 3.3.1 Function 17 Verify interlock is in required state for existing condition within 1 Hour 3.2.4 QPTR
	SRO	Inform SM/Maint of N-42 channel failure/problem
	SRO	Inform SM of unit status/potential GSEP event

Eliminated

Event No.: 5 4
Event Description: Loop A Thot fails high resulting in Loop A Tave failing high. Rods move in AUTO. Loop A #1 RTD fails high.

Time	Position	Applicant's Actions or Behavior
	CUE	Tave Loop A increase ΔT Loop A increase Numerous annunciators on Block 14 Inward Rod Movement
	RO	Identify/report problem with Rod Control Check turbine power stable Place Rod Control in Manual
	SRO	Implement 1BOA ROD-1 'UNCONTROLLED ROD MOTION" and direct operator action
	BOP	Check turbine power stable
	RO	Place Rod Control in Manual (previously performed) Verify rods not moving Check rod control inputs Power range instruments operable RCS Loop Tave instruments **inoperable** **Failed 1TI-412 Loop 1A due to failed high Thot on Loop A** Turbine first stage pressure operable Tref instrumentation operable
	SRO	Implement 1BOA INST-2 "OPERATION WITH A FAILED INSTRUMENT CHANNEL" Attachment A "RCS NARROW RANGE RTD CHANNEL" while continuing with this procedure and direct operator action
	RO	1BOA INST-2 Place Rod Control in Manual (previously performed) Manually defeat failed channel Select 1A position on Tave DEFEAT Switch Select 1A position ΔT DEFEAT Switch

Event No.: ~~6~~ 5

Event Description: LOCA outside CNMT, Failure of turbine to trip, Failure of RWST valves to open

Time	Position	Applicant's Actions or Behavior
	RO (Cont)	Cycle RH to cold legs 1A and ID isol valve: 1SI8809A, ~~no~~ pressure change maintains closed ~~Cycle RH to cold legs 1B and 1C~~ isol valve: ~~1SI8809B, no pressure change~~ ~~Cycle SI pumps to cold legs isol valve:~~ ~~1SI8835, pressure increase~~ when closed ~~Maintain 1SI8835 closed~~ **Break between ~~1SI8835~~ and ~~1SI8821A,B~~** 1SI8948A 1SI8818A Realign or shutdown affected systems as necessary: ~~SI pumps 1A and 1B need to be secure~~d Check if break is isolated: RCS pressure increasing
	SRO	Go to 1BEP-1 " LOSS OF REACTOR OR SECONDARY COOLANT" and direct operator actions.

Byron
June 2000 Examination

Facility-Developed Scenarios

Validation Week Changes

Simulation Facility BYRON Scenario No.: 1 Op Test No.: 1

Examiners: _____ Operators: _____ SRO

_____ _____ RO

_____ _____ BOP

Initial Conditions: IC-~~16~~ 18; ~~50~~ 75% power MOL, Equil. Xenon, 1B AF pump OOS, 1C HDP OOS, U-2 SAC OOS. 1AR022J Radiation monitor is in an out of poll status due to a failed circuit card.

Turnover: ~~50~~ 75% Power Steady State, Equilibrium Xenon, MOL. The Diesel Driven Aux Feedwater Pump is OOS for replacement of a fuel injector. The pump has been OOS for 6 hours and is expected to be returned to service by the end of the shift. 1C Heater Drain Pump is out of service for motor bearing replacement. Unit 2 SAC is OOS for an oil change and is expected to be returned to service by the end of the shift. 1AR022J Radiation monitor is in an out of poll status due to a failed circuit card. Electrical Operations will be requesting a power increase to Full Power later in the shift.

Event No.	Malf. No.	Event Type*		Event Description
Preload				Place Unit 2 SAC, 1C HD pump, 1B AF Pump out of service, and Set the Poll Status on the 1AR022J's to **off** on the RM11, verify/ select 1LT-558 as controlling channel for 1C SG.
Preload	BAT 1baf-oos	C	BOP SRO	1B AF Pump OOS
Preload	RF RP84 RP15D	C	RO SRO	1B SI Pump fails to start automatically (mrf RP84 open; imf RP15D)
1	TH03C	C	RO BOP SRO	1C SGTL (20 gpm, 50 sec ramp)(SDG TH5)
2		N	BOP SRO	Reduce Turbine Load for Plant Shutdown due to SG leakage > T.S.
		R	RO	Lower reactor power using rods and/or boration
3	RX06L	I	BOP SRO	1LT558 Failed High (MF RX06L 100% 3 sec ramp) (SDG RX19) **SEE NEXT MALFUNCTION ALSO. Note 1.**
4	RX29C	C	BOP SRO	FRV 1FW530 Failed Closed in Automatic (MF RX29C 0, 3 sec ramp) (SDG RX21)
5	ED11A	C	RO BOP SRO	Loss of Instrument Bus 111 (MF ED11A) (SDG ED6) **SEE NEXT MALFUNCTION ALSO.**
6	RX18A	I	RO SRO	1A Tcold failed High (MF RX18A 630) (SDG RX2) **Note 2**
7	TH03C	M	RO BOP SRO	1C SGTR ~~(400~~ 460 gpm) (SDG TH5)
8	Preload	C	RO SRO	Manually start an SI pump
9		C	RO BOP SRO	Manually Align ECCS for Injection

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

NOTE 1:	RP~~28~~ 21	Cab. Door #~~1~~ 2	(MRF RP21 OPEN) (CLOSE) (SDG RX4)
	RX126	P-14	LB558B C2-769 BS-1 (MRF RX126 Trip) (SDG RX19)
	RX013	Lo-2 Rx Trip	LB558C C2-769 BS-2 (MRF RX073 Trip) (SDG RX19)
	RX147	AMS Test Bypass Switch	(MRF RX147 Trip) (SDG RX19)
NOTE 2:	FW45A-D	1AF005 A-D	IMF FW45A,B,C,D (0) (SDG FW13)
	RP20	Cab. Door #1	(MRF RP20 OPEN) (CLOSE) (SDG RX4)
	RX014	OPΔT Trip	TB411G C1-124 BS-1 (MRF RX014 Trip) (SDG RX4)
	RX136	OPΔT Runback	TB411H C1-124 BS-2 (MRF RX136 Trip) (SDG RX4)
	RX013	OTΔT Trip	TB411C C1-124 BS-3 (MRF RX013 Trip) (SDG RX4)
	RX135	OTΔT Runback	TB411D C1-124 BS-4 (MRF RX135 Trip) (SDG RX4)
	RX016	Low Tave FW Isol	TB412G C1-121 BS-2 (MRF RX016 Trip) (SDG RX2)
	RX015	Lo-Lo Tave	TB412D C1-121 BS-1 (MRF RX015 Trip) (SDG RX2)

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Simulation Facility BYRON	Scenario No.: 2	Op Test No.: 1	
Examiners: _____		Operators: _____	SRO
_____		_____	RO
_____		_____	BOP

Initial Conditions: IC-21, Reactor Power 100%, BOL, Equil. Xenon, 1B AF pump OOS, 1C HDP OOS, U-2 SAC OOS. 1AR022J Radiation monitor is in an out of poll status due to a failed circuit card.

Turnover: Reactor power is 100%. The Diesel Driven Aux Feedwater Pump is OOS for replacement of a fuel injector. The pump has been OOS for 6 hours and is expected to be returned to service by the end of the shift. 1C Heater Drain Pump is out of service for motor bearing replacement. Unit 2 SAC is OOS for an oil change and is expected to be returned to service by the end of the shift. 1AR022J Radiation monitor is in an out of poll status due to a failed circuit card. Electrical Operations has ordered Byron Unit 1 to lower power at 5 Mw/min after shift turnover to 900Mw.

Event No.	Malf. No.	Event Type*		Event Description
Preload				Place Unit 2 SAC, 1C HD pump, 1B AF Pump out of service, and Set the Poll Status on the 1AR022J's to off on the RM11.
Preload	BAT 1baf-oos	C	BOP SRO	1B AF Pump OOS
Preload	FW43			1A AFW Pump fails to start
Preload	MRF RP34 OUT RP35 OUT RP60 OUT RP61 OUT			Failure of MSIV automatic closure signal
Preload	MS01A, 100			1A MSIV Fails to Close
1		R	RO	Lower reactor power using rods and/or boration
		N	BOP SRO	Set and lower turbine load at 5 Mw/min to 900Mw
2	CC02B, 134 CC01B	C	BOP SRO	1A CC Pump trips coincident with 1B CC Pump discharge pressure switch failing as-is.
3	RX10A,0,20	I	RO SRO	Impulse Pressure Channel PT-505 fails downscale on a 20 second ramp. **NOTE 1**
4	RX05, 0	I	BOP SRO	Steam Header Pressure Detector PT-507 fails low
5	MS09,4.0 MLB/H	M	RO SRO BOP	Main Steam Header Break with failure of MSIV auto closure
6	(MS01A)	C	RO SRO BOP	1A Steam Generator MSIV failure to close both automatic and manual
7	(FW43)	M	RO SRO BOP	1A MD AFW pump trip results in loss of feed.
8	TH11B, 100	C	RO SRO	Pzr PORV 456 fails open INSERT when Press increases to Bacta Heat up. PORV setpoint

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

NOTE 1:	RP20	Cab. Door #1	(MRF RP20 OPEN) (CLOSE) (SDG RX11)
	RX143	PB505A	(MRF RX143 Trip) (SDG RX11)
	RX149	Operating Bypass to Test-Trip	(MRF RX149 Trip) (SDG RX11)
	SE:PN0470	AMS in Test	(IOR SE:PN0470 ON)

Simulation Facility BYRON	Scenario No.: Extra	Op Test No.: 1	
Examiners: _____		Operators: _____	SRO
_____		_____	RO
_____		_____	BOP

Initial Conditions: IC-18; 75% power MOL, Equil. Xenon, 1B AF pump OOS, 1C HDP OOS, U-2 SAC OOS. 1AR022J Radiation monitor is in an out of poll status due to a failed circuit card.

Turnover: 75% power, steady state, equilibrium xenon. The Diesel Driven Aux Feedwater Pump is OOS for replacement of a fuel injector. The pump has been OOS for 6 hours and is expected to be returned to service by the end of the shift. 1C Heater Drain Pump is out of service for motor bearing replacement. Unit 2 SAC is OOS for an oil change and is expected to be returned to service by the end of the shift. 1AR022J Radiation monitor is in an out of poll status due to a failed circuit card. Raise turbine load to full power at 5 Mw/min.

Event No.	Malf. No.	Event Type*		Event Description
Preload				Place Unit 2 SAC, 1C HD pump, 1B AF Pump out of service, and Set the Poll Status on the 1AR022J's to **off** on the RM11.
Preload	BAT 1baf-oos	C	BOP SRO	1B AF Pump OOS
Preload	RP02A&B	M	RO BOP SRO	RX Trip Bkrs Fail to Open (SDG RP2)
1		N	BOP SRO	Raise Turbine Load to Full Power at 5 Mw/min.
		R	RO	Raise reactor power using rods and/or dilution
2	~~RX21A~~	~~I~~	~~RO~~ SRO	~~PZR Press Channel Failure (2500 psig, 3 sec ramp) (SDG RX8)~~ ~~Note 1~~ Same as JPM
3	CC03B	I	BOP SRO	CC Surge Tank Level Transmitter failed Low (0%) (SDG CC2) **Note 2** ok
4	RP10A	C	RO BOP SRO	Inadvertent PHASE 'A' (SDG RP13) **Delete Malfunction right after activation is complete.** **Note 3** Good one
5	TH10A&B ZDI1PK455B&C	C	RO SRO	PZR Spray Valve 1RY455B&C failed Open (TH10A&B 100, 10) (SDG TH7) PZR Spray Valve Controller failed in Auto (IOR ZDI1PK455B&C **AUTO OR if sprays are in manual for restoration INC) (SDG TH7)**
6	Preload	M	RO BOP SRO	ATWS (SDG RD1)
7	ZAO1SI412	C	RO SRO	Rod speed indicator fails at 72 spm when value is reached (IOR ZAO1SI412 72) (SDG RD1)
8	MS03A&E	M	RO BOP SRO	Steam Break on the 1A S/G (100%) (SDG MS1)

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

Note 1	MRF RP20 Open/Close	Protection Cabinet Door #1			(SDG RX10)
	MRF RX032 Trip	Pzr Hi Press Rx Trip	PB455A	C1-153 BS-1	(SDG RX10)
	MRF RX034 Trip	Pzr Low Press Rx Trip	PB455C	C1-153 BS-4	(SDG RX10)
	MRF RX035 Trip	Pzr Low Press SI	PB455D	C1-153 BS-3	(SDG RX10)
	MRF RX033 Trip	P11	PB455B	C1-153 BS-2	(SDG RX10)
	MRF RX013 Trip	OTΔT Rx Trip	TB411C	C1-124 BS-3	(SDG RX4)
	MRF RX135 Trip	OTΔT Runback	TB411D	C1-124 BS-4	(SDG RX4)
Note 2	MRF CC52 CLOSED	to shut 1CC185 to isolate 1CC183			(SDG CC2)
	MRF CC15/16 100	to drain CC Surge Tank			(SDG CC2)
Note 3	MRF WD14 BYPASS	to restore S/G sample flow			(SDG WD1)
	MRF RM01 RESET	to restore 1PR11J			(RFI RM)