



ENERGY NORTHWEST

INSTRUCTIONAL COVER SHEET

PROGRAM TITLE LICENSED OPERATOR INITIAL TRAINING

COURSE TITLE ADMIN JOB PERFORMANCE MEASURE

LESSON TITLE DETERMINE ACTIONS FOR CRITICALITY OUTSIDE OF ECP (EARLY)

LESSON LENGTH .5 HRS MAXIMUM STUDENTS 1

INSTRUCTIONAL MATERIALS INCLUDED

Lesson Plan PQD Code _____ Rev. No. _____

Simulator Guide PQD Code _____ Rev. No. _____

JPM PQD Code LO001587 Rev. No. 1

Exam PQD Code _____ Rev. No. _____

DIVISION TITLE Nuclear Training

DEPARTMENT Operations Training

PREPARED BY Ron Hayden DATE 5/11/06

REVISED BY Ron Hayden DATE 10/6/08

TECHNICAL REVIEW BY _____ DATE _____

INSTRUCTIONAL REVIEW BY _____ DATE _____

APPROVED BY _____ DATE _____

Operations Training Manager

Verify materials current IAW SWP-TQS-01 prior to use.

DETERMINE ACTIONS FOR CRITICALITY OUTSIDE OF ECP (EARLY)

MINOR REVISION RECORD

Minor Rev Number	Description of Revision	Affected Pages	Entered By	Effective Date	Manager Approval

JPM SETUP

Simulator ICs; Malfunctions; Triggers; Overrides:

N/A

Setup Instructions:

Make a copy of the current pull sheet from the simulator. Determine where Minimum ECP is and indicate it on copy of pull sheet by placing an '*1' next to the step and at the bottom of the column indicate that a *1 is 'Minimum ECP'. Ensure it is AFTER step indicated in initial conditions.

Have a copy of PPM 3.1.2 startup flowchart available for reference.

JPM Instructions:

Verify Current Procedure against JPM and ensure procedure critical steps match if procedure is different revision than listed in JPM. If critical steps have changed, the JPM should be revised.

The evaluator and student shall use current procedure. The evaluator should mark off steps as they are completed, note comments, and transfer the comments to the "Results of JPM" page.

Tools/Equipment: N/A

Safety Items: N/A

Task Number: RO-0156; SRO-0118

Validation Time: 15 minutes

Prerequisite Training: N/A

Time Critical: NO

PPM Reference: PPM 3.1.2 Rev. 68

Location: Simulator/Plant/Table Top

NUREG 1123 Ref: 2.1.7 4.4 / 4.7

Performance Method: Perform

DETERMINE ACTIONS FOR CRITICALITY OUTSIDE OF ECP (EARLY)

* Items are Critical Steps

Comments	Element	Standard	Sat/Unsat
RECORD START TIME: _____			
If SRO position is being evaluated		<p>Using given information, determines that the reactor is critical or will be critical before the minimum ECP has been reached.</p> <p>Directs RO to (stop control rod withdrawal and to) drive control rods in the reverse order until all control rods are fully inserted.</p>	S / U *
If RO position is being evaluated		<p>Using given information, determines that the reactor is critical or will be critical before the minimum ECP has been reached.</p> <p>Notifies the CRS that he has stopped control rod withdrawal due to reactor being critical prior to the minimum allowable ECP.</p>	S / U *
Termination Criteria: Student completes the attached answer sheet and hands it to the examiner.			
RECORD TERMINATION TIME: _____			
Transfer to "Results of JPM" page the following information: Procedures validated prior to use; Comments from marked up evaluator's procedure copy; Unsatisfactory critical tasks; Total JPM time; Marked Up procedure and remaining JPM pages may be discarded.			

STUDENT JPM INFORMATION CARD

Initial Conditions:

A plant startup is in progress. PPM 3.1.2 has been completed as follows: Step L11 has been completed; Step P1 has not yet been completed; Step Q9 has been completed and step Q10 is in progress.

The following indications are observed:

- Time 0953
- Coolant Temp 205° F
- Control rod 10-47
- Control rod position 18
- Neutron level 8,000 CPS and rising
- Period 145 seconds and stable

Control rods have been steadily pulled since starting Group 1 of the Pull Sheet. Control rod motion stopped approximately 1 minute ago.

Cue:

Using the given information, PPM 3.1.2, and the supplied pull sheets, determine your next action.

When you have determined your next action, write it on the page provided along with the basis for the decision and hand it to the examiner.

JPM ANSWER SHEET

NEXT ACTION TO BE TAKEN: _____

BASIS FOR ACTION: _____

CGS PULL SHEET COVER PAGE

SEQUENCE FILE NAMED A2C19SU2.SEQ
SEQUENCE TYPE A2
TOTAL NUMBER OF GROUPS 41
TOTAL NUMBER OF STEPS 488
PULL SHEET CHECK SUM 0016551495

SNE review: SAM SNE DATE: yesterday
SECOND review: Sammy SNE DATE: yesterday
OPS review: Samantha OPS DATE: yesterday

Date / Time of startup Today 0700

Critical Data:

- Recirc Suction Temperature - _____
- Date / Time - _____
- RWM Sequence Step - _____
- Control Rod Position - _____
- Period at Critical Data - _____
- Rod Pattern at Critical attached - _____
(Screen dump or Printout)

Completed Pullsheets to be filed under PPM 9.3.9, DIC 1814.2

NOTICE: IF YOUR INITIALS APPEAR ON ANY PAGE OF THIS PULL SHEET,
PLEASE SIGN AND INITIAL ON THE FOLLOWING PAGE

Pull Sheet Check Sum - 0016551495

POWERPLEX Pull Sheet Print Menu

CONTROL ROD WITHDRAWAL ORDER SHEET

Sequence : A2 A2C19SU2.SEQ

Page 1 of 41

Insert limit = 0 Withdraw limit = 48 Number of steps on this page = 12

Control rod pattern at TOP of page 1.

	02	06	10	14	18	22	26	30	34	38	42	46	50	54	58	
59					00	00	00	00	00	00	00					59
55				00	00	00	00	00	00	00	00	00				55
51			00	00	00	00	00	00	00	00	00	00	00			51
47		00	00	00	00	00	00	00	00	00	00	00	00	00		47
43	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	43
39	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	39
35	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	35
31	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	31
27	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	27
23	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	23
19	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	19
15		00	00	00	00	00	00	00	00	00	00	00	00	00		15
11			00	00	00	00	00	00	00	00	00	00	00			11
07				00	00	00	00	00	00	00	00	00				07
03					00	00	00	00	00	00	00					03
	02	06	10	14	18	22	26	30	34	38	42	46	50	54	58	

Control rod pattern at BOTTOM of page 1.

	02	06	10	14	18	22	26	30	34	38	42	46	50	54	58	
59					00	00	00	00	00	00	00					59
55				00	00	00	00	00	00	00	00	00				55
51			00	00	00	00	00	00	00	00	00	00	00			51
47		00	00	00	00	00	--	00	--	00	00	00	00	00		47
43	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	43
39	00	00	00	00	--	00	00	00	00	00	--	00	00	00	00	39
35	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	35
31	00	00	--	00	00	00	--	00	--	00	00	00	--	00	00	31
27	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	27
23	00	00	00	00	--	00	00	00	00	00	--	00	00	00	00	23
19	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	19
15		00	00	00	00	00	--	00	--	00	00	00	00	00		15
11			00	00	00	00	00	00	00	00	00	00	00			11
07				00	00	00	00	00	00	00	00	00				07
03					00	00	00	00	00	00	00					03
	02	06	10	14	18	22	26	30	34	38	42	46	50	54	58	

Pull Sheet Check Sum = 0016551495

POWERPLEX Pull Sheet Print Menu

CONTROL ROD WITHDRAWAL ORDER SHEET

Sequence : A2 A2C19SU2.SEQ

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WITHDRAWAL CONTROL RODS FROM THE TOP TO THE BOTTOM OF THE PAGE

RMM Group-Step	BPWS Group	Rod No.	From	To	Performed by (Initial)	Verified by (Initial)	# Cont. Withdraw Couple Check, (1)	Full Out Light	Neutron Flux Response (2)	Star Here ↓ ↓
1 - 1	1	26 - 31	00	48	R	M	R	R	N	
1 - 2	1	42 - 39	00	48	R	M	R	R	N	
1 - 3	1	42 - 23	00	48	R	M	R	R	N	
1 - 4	1	34 - 31	00	48	R	M	R	R	N	
1 - 5	1	18 - 39	00	48	R	M	R	R	N	
1 - 6	1	18 - 23	00	48	R	M	R	R	Y	
1 - 7	1	34 - 47	00	48	R	M	R	R	Y	
1 - 8	1	50 - 31	00	48	R	M	R	R	Y	
1 - 9	1	26 - 15	00	48	R	M	R	R	Y	
1 - 10	1	10 - 31	00	48	R	M	R	R	Y	
1 - 11	1	26 - 47	00	48	R	M	R	R	Y	
1 - 12	1	34 - 15	00	48	R	M	R	R	Y	

(1) Continuous Withdraw Couple Check required when pulled to 48 T.S. S.R 3.1.3.5
 (2) Neutron Flux Response (Y or N) only required prior to criticality {P-104550}

CONTROL ROD WITHDRAWAL ORDER SHEET

Sequence : A2 A2C19SU2.SEQ

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Insert limit = 0 Withdraw limit = 48 Number of steps on this page = 12

Control rod pattern at TOP of page 2.

	02	06	10	14	18	22	26	30	34	38	42	46	50	54	58	
59					00	00	00	00	00	00	00					59
55				00	00	00	00	00	00	00	00	00				55
51			00	00	00	00	00	00	00	00	00	00	00			51
47		00	00	00	00	00	--	00	--	00	00	00	00	00		47
43	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	43
39	00	00	00	00	--	00	00	00	00	00	--	00	00	00	00	39
35	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	35
31	00	00	--	00	00	00	--	00	--	00	00	00	--	00	00	31
27	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	27
23	00	00	00	00	--	00	00	00	00	00	--	00	00	00	00	23
19	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	19
15		00	00	00	00	00	--	00	--	00	00	00	00	00		15
11			00	00	00	00	00	00	00	00	00	00	00			11
07				00	00	00	00	00	00	00	00	00				07
03					00	00	00	00	00	00	00					03
	02	06	10	14	18	22	26	30	34	38	42	46	50	54	58	

Control rod pattern at BOTTOM of page 2.

	02	06	10	14	18	22	26	30	34	38	42	46	50	54	58	
59					00	00	00	00	00	00	00					59
55				00	--	00	00	00	00	00	--	00				55
51			00	00	00	00	00	00	00	00	00	00	00			51
47		00	--	00	00	00	--	00	--	00	00	00	--	00		47
43	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	43
39	--	00	00	00	--	00	00	00	00	00	--	00	00	00	--	39
35	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	35
31	00	00	--	00	00	00	--	00	--	00	00	00	--	00	00	31
27	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	27
23	--	00	00	00	--	00	00	00	00	00	--	00	00	00	--	23
19	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	19
15		00	--	00	00	00	--	00	--	00	00	00	--	00		15
11			00	00	00	00	00	00	00	00	00	00	00			11
07				00	--	00	00	00	00	00	--	00				07
03					00	00	00	00	00	00	00					03
	02	06	10	14	18	22	26	30	34	38	42	46	50	54	58	

Full Sheet Check Sum = 0016551495

POWERPLEX Pull Sheet Print Menu

CONTROL ROD WITHDRAWAL ORDER SHEET

Sequence : A2 A2C19SU2.SEQ

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WITHDRAWAL CONTROL RODS FROM THE TOP TO THE BOTTOM OF THE PAGE

RWM Group-Step	BPWS Group	Rod No.	From	To	Performed by (Initial)	Verified by (Initial)	# Cont. Withdraw Couple Check (1)	Full Out Light	Neutron Flux Response (2)	Star Here ↓ ↓
2 - 1	1	42 - 55	00	48	RC	MA	RC	RC	Y	
2 - 2	1	58 - 23	00	48	RC	MA	RC	RC	Y	
2 - 3	1	18 - 07	00	48	RC	MA	RC	RC	Y	
2 - 4	1	02 - 39	00	48	RC	MA	RC	RC	Y	
2 - 5	1	58 - 39	00	48	RC	MA	RC	RC	Y	
2 - 6	1	42 - 07	00	48	RC	MA	RC	RC	Y	
2 - 7	1	02 - 23	00	48	RC	MA	RC	RC	Y	
2 - 8	1	18 - 55	00	48	RC	MA	RC	RC	Y	
2 - 9	1	50 - 47	00	48	RC	MA	RC	RC	Y	
2 - 10	1	50 - 15	00	48	RC	MA	RC	RC	Y	
2 - 11	1	10 - 15	00	48	RC	MA	RC	RC	Y	
2 - 12	1	10 - 47	00	48					Y	

(1) Continuous Withdraw Couple Check required when pulled to 48 T.S. S.R 3.1.3.5
 (2) Neutron Flux Response (Y or N) only required prior to criticality {P-104550}

CONTROL ROD WITHDRAWAL ORDER SHEET

Sequence : A2 A2C19SU2.SEQ

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Insert limit = 0 Withdraw limit = 14 Number of steps on this page = 4

Control rod pattern at TOP of page 3.

	02	06	10	14	18	22	26	30	34	38	42	46	50	54	58	
59					00	00	00	00	00	00	00					59
55				00	--	00	00	00	00	00	--	00				55
51			00	00	00	00	00	00	00	00	00	00	00			51
47		00	--	00	00	00	--	00	--	00	00	00	--	00		47
43	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	43
39	--	00	00	00	--	00	00	00	00	00	--	00	00	00	--	39
35	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	35
31	00	00	--	00	00	00	--	00	--	00	00	00	--	00	00	31
27	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	27
23	--	00	00	00	--	00	00	00	00	00	--	00	00	00	--	23
19	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	19
15		00	--	00	00	00	--	00	--	00	00	00	--	00		15
11			00	00	00	00	00	00	00	00	00	00	00			11
07				00	--	00	00	00	00	00	--	00				07
03					00	00	00	00	00	00	00					03
	02	06	10	14	18	22	26	30	34	38	42	46	50	54	58	

Control rod pattern at BOTTOM of page 3.

	02	06	10	14	18	22	26	30	34	38	42	46	50	54	58	
59					00	00	00	00	00	00	00					59
55				00	--	00	00	00	00	00	--	00				55
51			00	00	00	00	00	00	00	00	00	00	00			51
47		00	--	00	14	00	--	00	--	00	14	00	--	00		47
43	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	43
39	--	00	00	00	--	00	00	00	00	00	--	00	00	00	--	39
35	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	35
31	00	00	--	00	00	00	--	00	--	00	00	00	--	00	00	31
27	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	27
23	--	00	00	00	--	00	00	00	00	00	--	00	00	00	--	23
19	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	19
15		00	--	00	14	00	--	00	--	00	14	00	--	00		15
11			00	00	00	00	00	00	00	00	00	00	00			11
07				00	--	00	00	00	00	00	--	00				07
03					00	00	00	00	00	00	00					03
	02	06	10	14	18	22	26	30	34	38	42	46	50	54	58	

Full Sheet Check Sum = 0016551495

POWERPLEX Full Sheet Print Menu

CONTROL ROD WITHDRAWAL ORDER SHEET

Sequence : A2 A2C19SU2.SEQ

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WITHDRAWAL CONTROL RODS FROM THE TOP TO THE BOTTOM OF THE PAGE

RWM Group-Step	BPWS Group	Rod No.	From	To	Performed by (Initial)	Verified by (Initial)	# Cont. Withdraw Couple Check (1)	Full Out Light	Neutron Flux Response (2)	Star Here ↓ ↓
3 - 1	2	18 - 47	00	14						
3 - 2	2	42 - 47	00	14						
3 - 3	2	18 - 15	00	14						
3 - 4	2	42 - 15	00	14						

#1

- (1) Continuous Withdraw Couple Check required when pulled to 48 T.S. S.R 3.1.3.5
 (2) Neutron Flux Response (Y or N) only required prior to criticality {P-104550}

*1 Minimum ECP Control Rod 42-15 notch 12

CONTROL ROD WITHDRAWAL ORDER SHEET

Sequence : A2 A2C19SU2.SEQ

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Insert limit = 14 Withdraw limit = 20 Number of steps on this page = 4

Control rod pattern at TOP of page 4.

	02	06	10	14	18	22	26	30	34	38	42	46	50	54	58	
59					00	00	00	00	00	00	00					59
55				00	--	00	00	00	00	00	--	00				55
51			00	00	00	00	00	00	00	00	00	00	00			51
47		00	--	00	14	00	--	00	--	00	14	00	--	00		47
43	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	43
39	--	00	00	00	--	00	00	00	00	00	--	00	00	00	--	39
35	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	35
31	00	00	--	00	00	00	--	00	--	00	00	00	--	00	00	31
27	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	27
23	--	00	00	00	--	00	00	00	00	00	--	00	00	00	--	23
19	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	19
15		00	--	00	14	00	--	00	--	00	14	00	--	00		15
11			00	00	00	00	00	00	00	00	00	00	00			11
07				00	--	00	00	00	00	00	--	00				07
03					00	00	00	00	00	00	00					03
	02	06	10	14	18	22	26	30	34	38	42	46	50	54	58	

Control rod pattern at BOTTOM of page 4.

	02	06	10	14	18	22	26	30	34	38	42	46	50	54	58	
59					00	00	00	00	00	00	00					59
55				00	--	00	00	00	00	00	--	00				55
51			00	00	00	00	00	00	00	00	00	00	00			51
47		00	--	00	20	00	--	00	--	00	20	00	--	00		47
43	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	43
39	--	00	00	00	--	00	00	00	00	00	--	00	00	00	--	39
35	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	35
31	00	00	--	00	00	00	--	00	--	00	00	00	--	00	00	31
27	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	27
23	--	00	00	00	--	00	00	00	00	00	--	00	00	00	--	23
19	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	19
15		00	--	00	20	00	--	00	--	00	20	00	--	00		15
11			00	00	00	00	00	00	00	00	00	00	00			11
07				00	--	00	00	00	00	00	--	00				07
03					00	00	00	00	00	00	00					03
	02	06	10	14	18	22	26	30	34	38	42	46	50	54	58	

Pull Sheet Check Sum = 0016551495

POWERPLEX Pull Sheet Print Menu

CONTROL ROD WITHDRAWAL ORDER SHEET

Sequence : A2 A2C19SU2.SEQ

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WITHDRAWAL CONTROL RODS FROM THE TOP TO THE BOTTOM OF THE PAGE

RWM Group-Step	BPWS Group	Rod No.	From	To	Performed by (Initial)	Verified by (Initial)	# Cont. Withdraw Couple Check (1)	Full Out Light	Neutron Flux Response (2)	Star Here ↓ ↓
4 - 1	2	18 - 47	14	20						
4 - 2	2	42 - 47	14	20						
4 - 3	2	18 - 15	14	20						
4 - 4	2	42 - 15	14	20						

- (1) Continuous Withdraw Couple Check required when pulled to 48 T.S. S.R 3.1.3.5
(2) Neutron Flux Response (Y or N) only required prior to criticality {P-104550}

Pull Sheet Check Sum = 0016551495

POWERPLEX Pull Sheet Print Menu

Reactivity Manager Review _____

CONTROL ROD WITHDRAWAL ORDER SHEET

Sequence : A2 A2C19SU2.SEQ

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Insert limit = 20 Withdraw limit = 26 Number of steps on this page = 4

Control rod pattern at TOP of page 5.

	02	06	10	14	18	22	26	30	34	38	42	46	50	54	58	
59					00	00	00	00	00	00	00					59
55				00	--	00	00	00	00	00	--	00				55
51			00	00	00	00	00	00	00	00	00	00	00			51
47		00	--	00	20	00	--	00	--	00	20	00	--	00		47
43	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	43
39	--	00	00	00	--	00	00	00	00	00	--	00	00	00	--	39
35	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	35
31	00	00	--	00	00	00	--	00	--	00	00	00	--	00	00	31
27	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	27
23	--	00	00	00	--	00	00	00	00	00	--	00	00	00	--	23
19	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	19
15		00	--	00	20	00	--	00	--	00	20	00	--	00		15
11			00	00	00	00	00	00	00	00	00	00	00			11
07				00	--	00	00	00	00	00	--	00				07
03					00	00	00	00	00	00	00					03
	02	06	10	14	18	22	26	30	34	38	42	46	50	54	58	

Control rod pattern at BOTTOM of page 5.

	02	06	10	14	18	22	26	30	34	38	42	46	50	54	58	
59					00	00	00	00	00	00	00					59
55				00	--	00	00	00	00	00	--	00				55
51			00	00	00	00	00	00	00	00	00	00	00			51
47		00	--	00	26	00	--	00	--	00	26	00	--	00		47
43	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	43
39	--	00	00	00	--	00	00	00	00	00	--	00	00	00	--	39
35	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	35
31	00	00	--	00	00	00	--	00	--	00	00	00	--	00	00	31
27	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	27
23	--	00	00	00	--	00	00	00	00	00	--	00	00	00	--	23
19	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	19
15		00	--	00	26	00	--	00	--	00	26	00	--	00		15
11			00	00	00	00	00	00	00	00	00	00	00			11
07				00	--	00	00	00	00	00	--	00				07
03					00	00	00	00	00	00	00					03
	02	06	10	14	18	22	26	30	34	38	42	46	50	54	58	

Pull Sheet Check Sum = 0016551495

POWERPLEX Pull Sheet Print Menu

CONTROL ROD WITHDRAWAL ORDER SHEET

Sequence : A2 A2C19SU2.SEQ

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WITHDRAWAL CONTROL RODS FROM THE TOP TO THE BOTTOM OF THE PAGE

RWM Group-Step	BPWS Group	Rod No.	From	To	Performed by (Initial)	Verified by (Initial)	# Cont. Withdraw Couple Check (1)	Full Out Light	Neutron Flux Response (2)	Star Here ↓ ↓
5 - 1	2	18 - 47	20	26						
5 - 2	2	42 - 47	20	26						
5 - 3	2	18 - 15	20	26						
5 - 4	2	42 - 15	20	26						

- (1) Continuous Withdraw Couple Check required when pulled to 48 T.S. S.R 3.1.3.5
(2) Neutron Flux Response (Y or N) only required prior to criticality {P-104550}

Full Sheet Check Sum = 0016551495

POWERPLEX Full Sheet Print Menu

Reactivity Manager Review _____

CONTROL ROD WITHDRAWAL ORDER SHEET

Sequence : A2 A2C19SU2.SEQ

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Insert limit = 26 Withdraw limit = 48 Number of steps on this page = 4

Control rod pattern at TOP of page 6.

	02	06	10	14	18	22	26	30	34	38	42	46	50	54	58	
59					00	00	00	00	00	00	00					59
55				00	--	00	00	00	00	00	--	00				55
51			00	00	00	00	00	00	00	00	00	00	00			51
47		00	--	00	26	00	--	00	--	00	26	00	--	00		47
43	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	43
39	--	00	00	00	--	00	00	00	00	00	--	00	00	00	--	39
35	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	35
31	00	00	--	00	00	00	--	00	--	00	00	00	--	00	00	31
27	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	27
23	--	00	00	00	--	00	00	00	00	00	--	00	00	00	--	23
19	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	19
15		00	--	00	26	00	--	00	--	00	26	00	--	00		15
11			00	00	00	00	00	00	00	00	00	00	00			11
07				00	--	00	00	00	00	00	--	00				07
03					00	00	00	00	00	00	00					03
	02	06	10	14	18	22	26	30	34	38	42	46	50	54	58	

Control rod pattern at BOTTOM of page 6.

	02	06	10	14	18	22	26	30	34	38	42	46	50	54	58	
59					00	00	00	00	00	00	00					59
55				00	--	00	00	00	00	00	--	00				55
51			00	00	00	00	00	00	00	00	00	00	00			51
47		00	--	00	--	00	--	00	--	00	--	00	--	00		47
43	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	43
39	--	00	00	00	--	00	00	00	00	00	--	00	00	00	--	39
35	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	35
31	00	00	--	00	00	00	--	00	--	00	00	00	--	00	00	31
27	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	27
23	--	00	00	00	--	00	00	00	00	00	--	00	00	00	--	23
19	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	19
15		00	--	00	--	00	--	00	--	00	--	00	--	00		15
11			00	00	00	00	00	00	00	00	00	00	00			11
07				00	--	00	00	00	00	00	--	00				07
03					00	00	00	00	00	00	00					03
	02	06	10	14	18	22	26	30	34	38	42	46	50	54	58	

Full Sheet Check Sum = 0016551495

POWERPLEX Pull Sheet Print Menu

CONTROL ROD WITHDRAWAL ORDER SHEET

Sequence : A2 A2C19SU2.SEQ

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WITHDRAWAL CONTROL RODS FROM THE TOP TO THE BOTTOM OF THE PAGE

RWM Group-Step	BPWS Group	Rod No.	From	To	Performed by (Initial)	Verified by (Initial)	# Cont. Withdraw Couple Check (1)	Full Out Light	Neutron Flux Response (2)	Star Here ↑ ↓
6 - 1	2	18 - 47	25	48						
6 - 2	2	42 - 47	25	48						
6 - 3	2	18 - 15	25	48						
6 - 4	2	42 - 15	25	48						

- (1) Continuous Withdraw Couple Check required when pulled to 48 T.S. S.R 3.1.3.5
 (2) Neutron Flux Response (Y or N) only required prior to criticality {P-104550}

CONTROL ROD WITHDRAWAL ORDER SHEET

Sequence : A2 A2C19SU2.SEQ

Page 7 of 41

Insert limit = 0 Withdraw limit = 20 Number of steps on this page = 4

Control rod pattern at TOP of page 7.

	02	06	10	14	18	22	26	30	34	38	42	46	50	54	58	
59					00	00	00	00	00	00	00					59
55				00	--	00	00	00	00	00	--	00				55
51			00	00	00	00	00	00	00	00	00	00	00			51
47		00	--	00	--	00	--	00	--	00	--	00	--	00		47
43	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	43
39	--	00	00	00	--	00	00	00	00	00	--	00	00	00	--	39
35	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	35
31	00	00	--	00	00	00	--	00	--	00	00	00	--	00	00	31
27	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	27
23	--	00	00	00	--	00	00	00	00	00	--	00	00	00	--	23
19	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	19
15		00	--	00	--	00	--	00	--	00	--	00	--	00		15
11			00	00	00	00	00	00	00	00	00	00	00			11
07				00	--	00	00	00	00	00	--	00				07
03					00	00	00	00	00	00	00					03
	02	06	10	14	18	22	26	30	34	38	42	46	50	54	58	

Control rod pattern at BOTTOM of page 7.

	02	06	10	14	18	22	26	30	34	38	42	46	50	54	58	
59					00	00	00	00	00	00	00					59
55				00	--	00	00	00	00	00	--	00				55
51			00	00	00	00	00	00	00	00	00	00	00			51
47		00	--	00	--	00	--	00	--	00	--	00	--	00		47
43	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	43
39	--	00	20	00	--	00	00	00	00	00	--	00	20	00	--	39
35	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	35
31	00	00	--	00	00	00	--	00	--	00	00	00	--	00	00	31
27	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	27
23	--	00	20	00	--	00	00	00	00	00	--	00	20	00	--	23
19	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	19
15		00	--	00	--	00	--	00	--	00	--	00	--	00		15
11			00	00	00	00	00	00	00	00	00	00	00			11
07				00	--	00	00	00	00	00	--	00				07
03					00	00	00	00	00	00	00					03
	02	06	10	14	18	22	26	30	34	38	42	46	50	54	58	

Pull Sheet Check Sum = 0016551495

POWERPLEX Pull Sheet Print Menu

CONTROL ROD WITHDRAWAL ORDER SHEET

Sequence : A2 A2C19SU2.SEQ

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WITHDRAWAL CONTROL RODS FROM THE TOP TO THE BOTTOM OF THE PAGE

RWM Group-Step	BPWS Group	Rod No.	From	To	Performed by (Initial)	Verified by (Initial)	# Cont. Withdraw Couple Check (1)	Full Out Light	Neutron Flux Response (2)	Star Here ↓ ↓
7 - 1	2	10 - 23	00	20						
7 - 2	2	50 - 39	00	20						
7 - 3	2	10 - 39	00	20						
7 - 4	2	50 - 23	00	20						

- (1) Continuous Withdraw Couple Check required when pulled to 48 T.S. S.R 3.1.3.5
 (2) Neutron Flux Response (Y or N) only required prior to criticality {P-104550}

Full Sheet Check Sum = 0016551495

POWERPLEX Full Sheet Print Menu

Reactivity Manager Review _____

CONTROL ROD WITHDRAWAL ORDER SHEET

Sequence : A2 A2C19SU2.SEQ

Page 8 of 41

Insert limit = 20 Withdraw limit = 48 Number of steps on this page = 4

Control rod pattern at TOP of page 8.

	02	06	10	14	18	22	26	30	34	38	42	46	50	54	58	
59					00	00	00	00	00	00	00					59
55				00	--	00	00	00	00	00	--	00				55
51			00	00	00	00	00	00	00	00	00	00	00			51
47		00	--	00	--	00	--	00	--	00	--	00	--	00		47
43	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	43
39	--	00	20	00	--	00	00	00	00	00	--	00	20	00	--	39
35	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	35
31	00	00	--	00	00	00	--	00	--	00	00	00	--	00	00	31
27	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	27
23	--	00	20	00	--	00	00	00	00	00	--	00	20	00	--	23
19	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	19
15		00	--	00	--	00	--	00	--	00	--	00	--	00		15
11			00	00	00	00	00	00	00	00	00	00	00			11
07				00	--	00	00	00	00	00	--	00				07
03					00	00	00	00	00	00	00					03
	02	06	10	14	18	22	26	30	34	38	42	46	50	54	58	

Control rod pattern at BOTTOM of page 8.

	02	06	10	14	18	22	26	30	34	38	42	46	50	54	58	
59					00	00	00	00	00	00	00					59
55				00	--	00	00	00	00	00	--	00				55
51			00	00	00	00	00	00	00	00	00	00	00			51
47		00	--	00	--	00	--	00	--	00	--	00	--	00		47
43	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	43
39	--	00	--	00	--	00	00	00	00	00	--	00	--	00	--	39
35	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	35
31	00	00	--	00	00	00	--	00	--	00	00	00	--	00	00	31
27	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	27
23	--	00	--	00	--	00	00	00	00	00	--	00	--	00	--	23
19	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	19
15		00	--	00	--	00	--	00	--	00	--	00	--	00		15
11			00	00	00	00	00	00	00	00	00	00	00			11
07				00	--	00	00	00	00	00	--	00				07
03					00	00	00	00	00	00	00					03
	02	06	10	14	18	22	26	30	34	38	42	46	50	54	58	

Pull Sheet Check Sum = 0016551495

POWERPLEX Pull Sheet Print Menu

CONTROL ROD WITHDRAWAL ORDER SHEET

Sequence : A2 A2C19SU2.SEQ

Page 8 of 41

WITHDRAWAL CONTROL RODS FROM THE TOP TO THE BOTTOM OF THE PAGE

RWM Group-Step	BPWS Group	Rod No.	From	To	Performed by (Initial)	Verified by (Initial)	# Cont. Withdraw Couple Check (1)	Full Out Light	Neutron Flux Response (2)	Star Here ↓ ↓
8 - 1	2	10 - 23	20	48						
8 - 2	2	50 - 39	20	48						
8 - 3	2	10 - 39	20	48						
8 - 4	2	50 - 23	20	48						

- (1) Continuous Withdraw Couple Check required when pulled to 48 T.S. S.R 3.1.3.5
(2) Neutron Flux Response (Y or N) only required prior to criticality {P-104550}

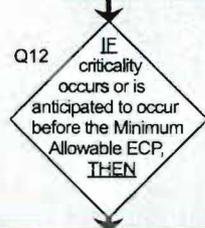
C8 C9 N6

Q9 **WITHDRAW** the 1st control rod as directed by the rod withdrawal sequence sheet to the target position (PPM9.3.9).

ADMIN B

Q10 **WHEN** the 1st control rod is withdrawn to its target position, **THEN PERFORM** the following:
OSP-RWM-C401
OSP-RSCS-C401

Q11 **WITHDRAW** control rods as directed by the rod withdrawal sequence sheet (PPM 9.3.9) to achieve criticality.



S11 With the RPV pressure below the RCIC isolation limit, **BEGIN** SOP-RCIC-STBY with those steps which can be performed in preparation for RCIC operability testing.

- Q14
1. **STOP** control rod withdrawal and notify the CRS.
 2. The CRS should direct the CRO to drive control rods in the reverse order until all controls rods are fully inserted.
 3. POC approval is required to proceed with further rod withdrawal.
 4. Consider the applicability of T.S. 3.1.2.

C24

Q15 **MAINTAIN** reactor period GT 60 seconds.

Q16 **WHEN** neutron level rises, **THEN VERIFY** IRM response. (~ 1x10E4 CPS on the SRMS)

Q17 **VERIFY** SRM/IRM overlap as follows:
a. **VERIFY** the SRM detectors are fully inserted
b. **VERIFY** at least 3 operable IRMs per trip system are on scale and increasing
c. **VERIFY** at least 3 operable SRMs read LT 3x10E5 cps

Q18 **WITHDRAW** SRMs to maintain indicated levels between the rod blocks (100 cps and 1X10E5 cps).

C10 N7

Q19 **ADVANCE** the IRM range change switches to maintain an indication of 8 to 24 on the lower scale and 25 to 75

+



ENERGY NORTHWEST

INSTRUCTIONAL COVER SHEET

PROGRAM TITLE INITIAL LICENSED OPERATOR TRAINING

COURSE TITLE JOB PERFORMANCE MEASURE - ADMIN

LESSON TITLE RRC-P-1B DELTA T CAVITATION ALARM VERIFICATION (Time Critical)

LESSON LENGTH .5 HRS MAXIMUM STUDENTS 1

INSTRUCTIONAL MATERIALS INCLUDED

Lesson Plan PQD Code _____ Rev. No. _____

Simulator Guide PQD Code _____ Rev. No. _____

JPM PQD Code LO001629 Rev. No. 0

Exam PQD Code _____ Rev. No. _____

DIVISION TITLE Nuclear Training

DEPARTMENT Operations Training

PREPARED BY Ron Hayden DATE _____

REVISED BY _____ DATE _____

TECHNICAL REVIEW BY _____ DATE _____

INSTRUCTIONAL REVIEW BY _____ DATE _____

APPROVED BY _____ DATE _____

Operations Training Manager

Verify materials current IAW SWP-TQS-01 prior to use

MINOR REVISION RECORD

Minor Rev Number	Description of Revision	Affected Pages	Entered By	Effective Date	Manager Approval

JPM SETUP

Simulator ICs; Malfunctions; Triggers; Overrides:

N/A

Special Setup Instructions:

Have a copy of the following:
4.602.A6.3-7 Alarm Response (3 Pages total)

JPM Instructions:

Verify the current revisions of the procedure against the JPM. If the procedure revisions are different than listed in the JPM, ensure the JPM is still technically correct. If the JPM is not technically correct, the JPM should be revised.

The evaluator document results on the “Results of JPM” page.

Tools/Equipment: None

Safety Items: None

Task Number: RO-1171

Validation Time: 7 minutes

Prerequisite Training: N/A

Time Critical: YES – 10 Minutes

PPM Reference: 4.602.A6.3-7 Rev. 16

Location: CLASSROOM OR SIMULATOR

NUREG 1123 Ref: 2.1.25 (2.8 / 3.1)

Performance Method: PERFORM

JPM CHECKLIST

PROCEDURE VALIDATION	Regarding procedure copies for evaluator and student, if the procedure revision is different from that listed on the JPM, verify that the critical task steps are the same. Evaluator copy may be used for marking step completion, and comments.
INITIAL CONDITIONS:	Columbia is operating in MODE 1 with the following information given: RRC-P-1A and RRC-P-1B are operating at 60 Hz. Annunciator 4.602.A6.3-7 has annunciated. Per the ARP, the delta-T indication and counter on the FANUC and ASD Diagnostic display has been displayed and indicates the delta-T is LT 10.7°F and the counter is counting down. B RRC Suction Temperature as indicated on RRC-TR-650 point 2 is 540°F and Steam Dome pressure as indicated on MS-PI-9 is 1020 psig.
INITIATING CUE:	You have been directed to perform the remainder of the ARP and indicate on the attached sheet what action you would take. When done, hand the completed sheet to the examiner. This is a TIME CRITICAL JPM and your time starts NOW.

* Items are Critical Steps

Comments	Element
RECORD START TIME (Time starts when completed reading initiating cue): _____	
	Refers to ARP and notes step 1 and 2 are completed.
	Calculates B RRC suction temperature which is given: RRC-TR-650 point 2 is reading 540°F
	Calculates Steam Dome pressure saturation temperature by taking the pressure reading on MS-PI-9 which is given as being 1020 psig, referring to Attachment 1 to ARP and finding the saturation temperature. Saturation temperature for 1020 psig is 549°F per Attachment 1 of ARP.
	Calculates the Delta-T by subtracting 540°F from 549°F and coming up with a 9°F Delta-T.
	Determines the alarm is a VALID alarm.
	Refers to ARP Automatic Actions, 10 minutes after annunciation, both RRC pumps will run back to 15 Hz. Student circles choice #2 on attached sheet.
Termination Criteria: Student completes JPM, circles answer and hands completed sheet to the exam proctor.	
RECORD TERMINATION TIME: _____	
Transfer the following information to the “Results of JPM” page: Procedures validated prior to use; Comments from marked up evaluator’s procedure copy; Unsatisfactory critical tasks; Total JPM time. The marked up procedure and remaining JPM pages may be discarded.	

**RESULTS OF JPM:
DETERMINE VALIDITY OF DELTA T CAVITATION LIMIT
ANNUNCIATOR**

Examinee (Please Print): _____

Evaluator (Please Print): _____

Task Standard: Circles Choice #2 on attached sheet.

Overall Evaluation	Exam Code
SAT / UNSAT (Circle One)	

Verified Procedure #/Rev. Used for JPM (Initial Box)	Validation/Critical Time	JPM Completion Time
	7 Minutes / 10 Minutes	

COMMENTS:

Evaluator's Signature: _____ **Date:** _____

STUDENT JPM INFORMATION CARD

Initial Conditions:

Columbia is operating in MODE 1 with the following information given:

RRC-P-1A and RRC-P-1B are operating at 60 Hz.

Annunciator 4.602.A6.3-7 has annunciated

Have been displayed &

Per the ARP, the delta-T indication and counter on the FANUC and ASD Diagnostic display, ~~has been displayed and indicates~~ the delta-T is LT 10.7°F and the counter is counting down.

B RRC Suction Temperature as indicated on RRC-TR-650 point 2 is 540°F

Steam Dome pressure as indicated on MS-PI-9 is 1020 psig

Cue:

You have been directed to perform the remainder of the ARP and indicate on the attached sheet what action you would take.

When done, hand the completed sheet to the examiner.

This is a TIME CRITICAL JPM and your time starts NOW.

THIS IS A TIME CRITICAL JPM

Circle the choice of actions that you would take:

1. Calculations indicate the low Delta-T **IS NOT VALID**. I would place the Delta-T Cavitation Limit Bypass switch to “BYPASS” on H13-P634.
2. Calculations indicate the low Delta-T **IS VALID**. I would lower power per PPM 3.2.4 until both RRC pumps frequency is 15 Hz.

When completed, hand this sheet to the examiner.

7. IF the delta-T signal is valid,
THEN perform the following: Otherwise, N/A.
 - a. IF the cause of the low delta-T is a Reactor Feed Pump trip
AND resultant RRC pump run back,
THEN check that the low delta-T clears in LE 3 minutes. Otherwise, N/A.
 - b. IF a valid low delta-T condition remains for GT 3 minutes,
THEN lower power per PPM 3.2.4 until both RRC pumps frequency is 15 Hz.
Otherwise, N/A.
 - c. Check that the running RRC pumps have run back to 15 Hz after 10 minutes have elapsed.
 - d. Ensure RRC-M/A-676A & B has transferred to manual.
8. IF entry conditions have been met,
THEN enter ABN-CORE. Otherwise, N/A.
9. Ensure RPV level stabilizes at set point.
10. Log the duration of low delta-T condition in the Control Room Log.
11. Evaluate the event per SWP-CAP-01, Attachment 8.2 “CR Initiation Guidance”.
12. Have the STA perform a PPCRS/TDAS total save for the period from 5 minutes before the low delta-T condition started until 5 minutes after the low delta-T condition cleared.

(CONTINUED ON NEXT PAGE)

REFERENCES: EWD-49E-0051 EWD-3E-0089

PROCEDURE NUMBER	REVISION	PAGE
4.602.A6	16	29 of 54

PRESSURE TEMPERATURE CONVERSION TABLE

PSIG	°F	PSIG	°F	PSIG	°F	PSIG	°F
1050	552	700	505	375	442	202	388
1040	551	690	504	370	440	199	387
1030	550	680	502	365	439	196	386
1020	549	670	500	360	438	193	384
1010	547	660	499	355	437	190	383
1000	546	650	497	350	435	187	382
990	545	640	495	345	434	184	381
980	544	630	494	340	432	181	380
970	543	620	492	335	431	178	379
960	541	610	490	330	430	175	377
950	540	600	489	325	429	172	376
940	539	590	487	320	427	169	374
930	538	580	485	315	426	166	373
920	536	570	483	310	424	163	372
910	535	560	481	305	423	160	371
900	534	550	479	300	421	157	369
890	532	540	477	295	420	154	368
880	531	530	476	290	418	151	366
870	530	520	474	285	417	148	365
860	528	510	472	280	415	145	363
850	527	500	470	275	414	142	362
840	526	490	468	270	412	139	360
830	524	480	466	265	411	136	359
820	523	470	463	260	409	133	357
810	522	460	461	255	407	130	356
800	520	450	459	250	406	127	354
790	519	440	457	245	404	124	352
780	517	430	455	240	402	121	350
770	516	420	452	235	400	118	349
760	514	410	450	230	399	115	347
750	513	400	448	225	397	112	345
740	511	395	447	220	395	109	343
730	510	390	445	215	393	106	341
720	508	385	444	210	391	103	340
710	507	380	443	205	389	100	338

NOTE: To determine the saturation temperature, record pressure as read from the instrument and record the temperature from this table, corresponding to the nearest pressure. Use standard rounding techniques. **DO NOT INTERPOLATE.**

Attachment 1

PROCEDURE NUMBER 4.602.A6	REVISION 16	PAGE 30 of 54
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ENERGY NORTHWEST

INSTRUCTIONAL COVER SHEET

PROGRAM TITLE LICENSED OPERATOR INITIAL TRAINING

COURSE TITLE ADMIN JOB PERFORMANCE MEASURE

LESSON TITLE DETERMINE CLEARANCE REQUIREMENTS FOR FPC-P-1A (ADMIN)

LESSON LENGTH .5 HRS MAXIMUM STUDENTS 1

INSTRUCTIONAL MATERIALS INCLUDED

Lesson Plan PQD Code	_____	Rev. No.	_____
Simulator Guide PQD Code	_____	Rev. No.	_____
JPM PQD Code	<u>LO001644</u>	Rev. No.	<u>0</u>
Exam PQD Code	_____	Rev. No.	_____

DIVISION TITLE Nuclear Training

DEPARTMENT Operations Training

PREPARED BY Ron Hayden DATE 10/6/08

REVISED BY _____ DATE _____

TECHNICAL REVIEW BY _____ DATE _____

INSTRUCTIONAL REVIEW BY _____ DATE _____

APPROVED BY _____ DATE _____

Operations Training Manager

Verify materials current IAW SWP-TQS-01 prior to use.

DETERMINE CLEARANCE REQUIREMENTS FOR FPC-P-1A

MINOR REVISION RECORD

Minor Rev Number	Description of Revision	Affected Pages	Entered By	Effective Date	Manager Approval

JPM SETUP

Simulator ICs; Malfunctions; Triggers; Overrides:

N/A

Setup Instructions:

Have the following drawings ready for candidate to reference:

M-526 Sheet 1

E-503 Sheet 7 and Sheet 12

EWD-38E-001

EWD-38E-021

JPM Instructions:

Verify Current Procedure against JPM and ensure procedure critical steps match if procedure is different revision than listed in JPM. If critical steps have changed, the JPM should be revised.

The evaluator and student shall use current procedure. The evaluator should mark off steps as they are completed, note comments, and transfer the comments to the "Results of JPM" page.

Tools/Equipment: N/A

Safety Items: N/A

Task Number: RO-1181

Validation Time: 15 minutes

Prerequisite Training: N/A

Time Critical: No

PPM Reference: PPM 1.3.64; SWP-OPS-3; M-526-1; E-503-7
E-503-12; EWD-38E-001; EWD-38E-021

Location: Simulator / Classroom

NUREG 1123 Ref: 2.2.13 4.1 / 4.3

Performance Method: Perform

DETERMINE CLEARANCE REQUIREMENTS FOR FPC-P-1A

JPM CHECKLIST

PROCEDURE VALIDATION:	Procedure copies for evaluator and student, if procedure revision is different from that listed on JPM, critical tasks reverified. Evaluator copy may be used for marking step completion, and comments.
INITIAL CONDITIONS:	Columbia is operating at full power. It is a Division 1 work week. Maintenance wants to replace the pump casing on FPC-P-1A.
INITIATING CUE:	You have been directed to determine the clearance order boundary component, required component position, and component tagging requirement necessary to perform work on FPC-P-1A.

* Items are Critical Steps

Comments	Element	Standard	Sat/Unsat
RECORD START TIME: _____			
	Identifies boundary and valve position required to isolate FPC-P-1A	References M-526-1 and determines the following valves should be closed to isolate FPC-P-1A: <ul style="list-style-type: none"> • FPC-V-114 • FPC-V-115A • FPC-V-116A • FPC-V-181A 	S / U *
	Determines tagging requirements	Determines the following valves should be danger tagged: <ul style="list-style-type: none"> • FPC-V-114 • FPC-V-115A • FPC-V-116A • FPC-V-181A 	S / U *
	Identifies FPC-P-1A Vent and Drain valves	Refers to M-526-1 Detail 3 and determines vent and drain valves for FPC-P-1A: <ul style="list-style-type: none"> • FPC-V-187A (Vent) • FPC-V-150A (Drain) 	S / U *

DETERMINE CLEARANCE REQUIREMENTS FOR FPC-P-1A

* Items are Critical Steps

Comments	Element	Standard	Sat/Unsat
	Determines tagging requirements	Determines that either FPC-V-187A OR FPC-V-150A should be danger tagged	S / U *
	Identifies breaker and position required to isolate FPC-P-1A electrically	References E-503 sheet 12 and determines breaker 9B on MC-7B-B should be open for FPC-P-1A	S / U *
	Determines tagging requirements	Determines MC-7B-B breaker 9B should be danger tagged	S / U *
	Identifies breaker and position required for FPC-V-181A	References E-503 sheet 7 and determines breaker 1C on MC-7B-A should be open for FPC-V-181A	S / U *
	Determines tagging requirements	Determines MC-7B-A breaker 1C should be danger tagged	S / U *
	Identifies Control Switch requirements for FPC-P-1A	References EWD-38E-001 for FPC-P-1A and determines switch should be tagged in AUTO or AUTO after STOP position.	S / U
	Determines tagging requirements	Determines control switch for FPC-P-1A should be BLUE tagged	S / U
	Identifies Control Switch requirements for FPC-P-1A	References EWD-38E-021 for FPC-V-181A and determines switch should be tagged in the NORM or NORM after CLOSE position	S / U
	Determines tagging requirements	Determines control switch for FPC-P-1A should be BLUE tagged	S / U
Termination Criteria: Student completes the attached answer sheet and hands it to the examiner.			
RECORD TERMINATION TIME: _____			
Transfer to "Results of JPM" page the following information: Procedures validated prior to use; Comments from marked up evaluator's procedure copy; Unsatisfactory critical tasks; Total JPM time; Marked Up procedure and remaining JPM pages may be discarded.			

DETERMINE CLEARANCE REQUIREMENTS FOR FPC-P-1A

ANSWER KEY:

COMPONENT	REQUIRED POSITION	TAGGING REQUIREMENT (TYPE OF TAG)
FPC-V-114	Closed	Danger
FPC-V-115A	Closed	Danger
FPC-V-116A	Closed	Danger
Breaker 9B for FPC-P-1A on MC-7B-B	Open	Danger
Breaker 1C for FPC-V-181A on MC-7B-A	Open	Danger
FPC-V-150A and / or FPC-V-187A	Open	Danger

STUDENT JPM INFORMATION CARD

Initial Conditions:

Columbia is operating at full power.

It is a Division 1 work week.

Maintenance wants to replace the pump casing vent valve on FPC-P-1A.

Cue:

You have been directed to determine the clearance order boundary component, required component position, and component tagging requirement necessary to perform work on FPC-P-1A.



ENERGY NORTHWEST

INSTRUCTIONAL COVER SHEET

PROGRAM TITLE INITIAL LICENSED OPERATOR TRAINING

COURSE TITLE JOB PERFORMANCE MEASURE - ADMIN

LESSON TITLE DETERMINE MINIMUM AND MAXIMUM STAY TIMES

LESSON LENGTH .5 HRS MAXIMUM STUDENTS 1

INSTRUCTIONAL MATERIALS INCLUDED

Lesson Plan PQD Code _____ Rev. No. _____

Simulator Guide PQD Code _____ Rev. No. _____

JPM PQD Code LO001632 Rev. No. 0

Exam PQD Code _____ Rev. No. _____

DIVISION TITLE Nuclear Training

DEPARTMENT Operations Training

PREPARED BY Ron Hayden DATE 5/29/08

REVISED BY _____ DATE _____

TECHNICAL REVIEW BY _____ DATE _____

INSTRUCTIONAL REVIEW BY _____ DATE _____

APPROVED BY _____ DATE _____

Operations Training Manager

Verify materials current IAW SWP-TQS-01 prior to use

MINOR REVISION RECORD

Minor Rev Number	Description of Revision	Affected Pages	Entered By	Effective Date	Manager Approval

JPM SETUP

Simulator ICs; Malfunctions; Triggers; Overrides:

N/A

Special Setup Instructions:

Each student should have access to a calculator.
Have a copy of the RWP for student.

JPM Instructions:

Verify the current revisions of the procedure against the JPM. If the procedure revisions are different than listed in the JPM, ensure the JPM is still technically correct. If the JPM is not technically correct, the JPM should be revised.

The evaluator document results on the “Results of JPM” page.

Tools/Equipment: Calculator

Safety Items: None

Task Number: RO-0022

Validation Time: 10 minutes

Prerequisite Training: N/A

Time Critical: No

PPM Reference: N / A

Location: CLASSROOM

NUREG 1123 Ref: 2.3.2 (2.5 / 2.9)

Performance Method: PERFORM

JPM CHECKLIST

PROCEDURE VALIDATION	Regarding procedure copies for evaluator and student, if the procedure revision is different from that listed on the JPM, verify that the critical task steps are the same. Evaluator copy may be used for marking step completion, and comments.
INITIAL CONDITIONS:	Columbia is operating in MODE 1 at full power. You have been selected to work with maintenance personnel on a valve located in contaminated zone in the North East corner of Reactor Building 422' by the R5 sump. Your accumulated dose for the year is 1800 mrem.
INITIATING CUE:	Using the high and low values associated with the radiation field you will be working in, answer the questions on the attached sheet. When completed, hand the sheet to the examiner.

* Items are Critical Steps

Comments	Element
RECORD START TIME: _____	
	Refers to RWP and determines the valve is in a High Radiation area.
	High rad area radiation levels are 100 mrem/hr to 1000 mrem/hr
	Administrative dose limit at Columbia is 2 Rem (2000 mrem)
	2000 – 1800 = 200 mrem to dose admin limit
	Question #1 – The minimum time to get 200 mrem in a 1000 mrem area is 1/5 th of an hour which is 12 minutes. Start time is 0800, therefore you could exceed your admin dose limit at 0812 (accept 8010 to 8015)
	Question #2 – The maximum time to get 200 mrem (at 100 mrem/hr) would be 2 hours. Start time is 0800 therefore the maximum stay time is until 1000 (accept 0955 to 1005).
Termination Criteria: Student answers questions and hands completed sheet to the examiner.	
RECORD TERMINATION TIME: _____	
Transfer the following information to the “Results of JPM” page: Procedures validated prior to use; Comments from marked up evaluator’s procedure copy; Unsatisfactory critical tasks; Total JPM time. The marked up procedure and remaining JPM pages may be discarded.	

**RESULTS OF JPM:
DETERMINE MINIMUM AND MAXIMUM STAY TIMES**

Examinee (Please Print): _____

Evaluator (Please Print): _____

Task Standard: Fills in blanks on attached sheet indicating that 1012 is the earliest time and 1200 is the latest time.

Overall Evaluation	Exam Code
SAT / UNSAT (Circle One)	

Verified Procedure #/Rev. Used for JPM (Initial Box)	Validation/Critical Time	JPM Completion Time
	10 Minutes / N / A	

COMMENTS:

Evaluator's Signature: _____ **Date:** _____

STUDENT JPM INFORMATION CARD

Initial Conditions:

Columbia is operating in MODE 1 at full power.

You have been selected to work with maintenance personnel on a valve located in the contamination zone in the North East corner of Reactor Building 422' by the R5 sump.

Your accumulated dose for the year is 1800 mrem.

Cue:

Using the high and low values associated with the radiation field you will be working in, answer the two questions on the attached sheet.

When completed, hand the sheet to the examiner.

Use the HIGH and LOW values associated with the radiation field you will be working in to answer the following questions:

If the job starts at 0800....

1. ...what time represents the earliest time that you could exceed Columbia's administrative dose limit?

2. ...what time represents the latest time that you could stay in the area and still not exceed Columbia's administrative dose limit?

When completed, hand this sheet to the examiner.

STUDENT JPM INFORMATION CARD

Initial Conditions:

Columbia is operating in MODE 1 at full power.

You have been selected to work with maintenance personnel on a valve located in the contamination zone in the North East corner of Reactor Building 422' by the R5 sump.

Your accumulated dose for the year is 1800 mrem.

Cue:

Using the high and low values associated with the radiation field you will be working in, answer the two questions on the attached sheet.

When completed, hand the sheet to the examiner.

Use the HIGH and LOW values associated with the radiation field you will be working in to answer the following questions:

If the job starts at 0800....

1. ...what time represents the earliest time that you could exceed Columbia's administrative dose limit?

2. ...what time represents the latest time that you could stay in the area and still not exceed Columbia's administrative dose limit?

When completed, hand this sheet to the examiner.



ENERGY NORTHWEST

INSTRUCTIONAL COVER SHEET

PROGRAM TITLE INITIAL LICENSED OPERATOR TRAINING

COURSE TITLE JOB PERFORMANCE MEASURE – SRO ADMIN

LESSON TITLE DETERMINATION OF SHIFT STAFFING AND OVERTIME RESTRICTIONS

LESSON LENGTH .5 HRS MAXIMUM STUDENTS 1

INSTRUCTIONAL MATERIALS INCLUDED

Lesson Plan PQD Code	_____	Rev. No.	_____
Simulator Guide PQD Code	_____	Rev. No.	_____
JPM PQD Code	<u>LO001643</u>	Rev. No.	<u>0</u>
Exam PQD Code	_____	Rev. No.	_____

DIVISION TITLE Nuclear Training

DEPARTMENT Operations Training

PREPARED BY Ron Hayden DATE 10/2/08

REVISED BY _____ DATE _____

TECHNICAL REVIEW BY _____ DATE _____

INSTRUCTIONAL REVIEW BY _____ DATE _____

APPROVED BY _____ DATE _____

Operations Training Manager

MINOR REVISION RECORD

Minor Rev Number	Description of Revision	Affected Pages	Entered By	Effective Date	Manager Approval

JPM SETUP

Simulator ICs; Malfunctions; Triggers; Overrides:

N/A

Special Setup Instructions:

JPM Instructions:

Verify the current revisions of each drawing against the JPM. If the drawings are a different revision than listed in the JPM, ensure the JPM is still technically correct. If the JPM is not technically correct, the JPM should be revised.

The evaluator document results on the “Results of JPM” page.

Tools/Equipment: None

Safety Items: None

Task Number: SRO-0002

Validation Time: 15 minutes

Prerequisite Training: N/A

Time Critical: NO

PPM Reference: PPM 1.3.27 Rev. 27

Location: CLASSROOM OR SIMULATOR

NUREG 1123 Ref: 2.1.5 (3.9)

Performance Method: PERFORM

JPM CHECKLIST

PROCEDURE VALIDATION	Regarding procedure copies for evaluator and student, if the procedure revision is different from that listed on the JPM, verify that the critical task steps are the same. Evaluator copy may be used for marking step completion, and comments.
INITIAL CONDITIONS:	Columbia is operating in MODE 1 and has been on line for 100 days. One of the required on-shift Reactor Operators for the upcoming 0700-1900 shift has called in sick. You have been assigned to find a replacement Reactor Operator.
INITIATING CUE:	Given the days and number of hours per day previously worked, determine if any of the following three Reactor Operators could be called into work on the upcoming day shift (0700 – 1900 on October 21st) without prior authorization. On the answer sheet provided, circle your choice for the three operators. When done, hand the completed sheet to the examiner.

* Items are Critical Steps

Comments	Element	Standard	Sat/Unsat
RECORD START TIME: _____			
	Evaluates work history of RO#1 against hours worked restrictions: An individual shall not be permitted to work more than: Third bullet: 24 hours in any 48-hour period	Determines that RO#1 has worked 15 hours on October 20 th and would exceed 24 hours in any 48-hour period requirement if called into work	S / U *
	Evaluates work history of RO#2 against hours worked restrictions: An individual shall not be permitted to work more than: Fourth bullet: 72 hours in any 168-hour (seven day) period	Determines that RO#2 has worked 72 hours in the previous 6 days (October 14 thru October 20 th) and would exceed 72 hours in any 168-hour period requirement if called into work	S / U *
	Evaluates work history of RO#3 against hours worked restrictions: An individual shall not be permitted to work more than: 16 hours straight 16 hours in any 24-hour period 24 hours in any 48-hour period 72 hours in any 168-hour period	Determines that RO#3 would not exceed any of the hours worked restrictions if called into work	S / U *

Termination Criteria: Student circles either Can or Cannot be called into work for the three Reactor Operators and hands completed sheet to the exam proctor.

RECORD TERMINATION TIME: _____

Transfer the following information to the “Results of JPM” page: Procedures validated prior to use; Comments from marked up evaluator’s procedure copy; Unsatisfactory critical tasks; Total JPM time. The marked up procedure and remaining JPM pages may be discarded.

**RESULTS OF JPM:
DETERMINATION OF SHIFT STAFFING AND
OVERTIME RESTRICTIONS**

Examinee (Please Print): _____

Evaluator (Please Print): _____

Task Standard: Circles “CAN NOT be called into work” for RO#1 and RO#2 and
“CAN be called into work” for RO#3.

Overall Evaluation	Exam Code
SAT / UNSAT (Circle One)	

Verified Procedure #/Rev. Used for JPM (Initial Box)	Validation/Critical Time	JPM Completion Time
	10 Minutes / NA	

COMMENTS:

Evaluator's Signature: _____ Date: _____

STUDENT JPM INFORMATION CARD

Initial Conditions:

Columbia is operating in MODE 1 and has been on line for 100 days.

One of the required on-shift Reactor Operators for the upcoming 0700-1900 shift has called in sick.

You have been assigned to find a replacement Reactor Operator.

Cue:

Given the days and number of hours per day previously worked, determine if any of the following three Reactor Operators could be called into work on the upcoming day shift (0700 – 1900 on October 21st) without prior authorization.

On the answer sheet provided, circle your choice for the three operators.

When done, hand the completed sheet to the examiner.

Work history for Reactor Operator #1:

October 14	Worked 0700 – 2200
October 15	OFF
October 16	Worked 0700 – 1900
October 17	Worked 0700 – 1900
October 18	Worked 0700 – 1900
October 19	OFF
October 20	Worked 0700 – 2200

Work history for Reactor Operator #2:

October 14	OFF
October 15	Worked 0700 – 1500
October 16	Worked 0700 – 1900
October 17	Worked 0700 – 1900
October 18	Worked 0700 – 1900
October 19	Worked 0700 – 1900
October 20	Worked 0700 – 1900

Work history for Reactor Operator #3:

October 14	Worked 0700 – 2200
October 15	Worked 0700 – 1500
October 16	Worked 0700 – 1900
October 17	OFF
October 18	Worked 0700 – 1900
October 19	Worked 0700 – 1900
October 20	Worked 0700 – 1900

ANSWER SHEET

Circle your choice:

Reactor Operator #1:

CAN BE CALLED INTO WORK

OR

CAN NOT BE CALLED INTO WORK

Reactor Operator #2:

CAN BE CALLED INTO WORK

OR

CAN NOT BE CALLED INTO WORK

Reactor Operator #3:

CAN BE CALLED INTO WORK

OR

CAN NOT BE CALLED INTO WORK

When completed, hand this sheet to the examiner.

STUDENT JPM INFORMATION CARD

Initial Conditions:

Columbia is operating in MODE 1 and has been on line for 100 days.

One of the required on-shift Reactor Operators for the upcoming 0700-1900 shift has called in sick.

You have been assigned to find a replacement Reactor Operator.

Cue:

Given the days and number of hours per day previously worked, determine if any of the following three Reactor Operators could be called into work on the upcoming day shift (0700 – 1900 on October 21st) without prior authorization.

On the answer sheet provided, circle your choice for the three Reactor Operators.

When done, hand the completed sheet to the examiner.

Work history for Reactor Operator #1:

October 14 Worked 0700 – 2200
October 15 OFF
October 16 Worked 0700 – 1900
October 17 Worked 0700 – 1900
October 18 Worked 0700 – 1900
October 19 OFF
October 20 Worked 0700 – 2200

Work history for Reactor Operator #2:

October 14 OFF
October 15 Worked 0700 – 1500
October 16 Worked 0700 – 1900
October 17 Worked 0700 – 1900
October 18 Worked 0700 – 1900
October 19 Worked 0700 – 1900
October 20 Worked 0700 – 1900

Work history for Reactor Operator #3:

October 14 Worked 0700 – 2200
October 15 Worked 0700 – 1500
October 16 Worked 0700 – 1900
October 17 OFF
October 18 Worked 0700 – 1900
October 19 Worked 0700 – 1900
October 20 Worked 0700 – 1900

ANSWER SHEET

Circle your choice:

Reactor Operator #1:

CAN BE CALLED INTO WORK

OR

CAN NOT BE CALLED INTO WORK

Reactor Operator #2:

CAN BE CALLED INTO WORK

OR

CAN NOT BE CALLED INTO WORK

Reactor Operator #3:

CAN BE CALLED INTO WORK

OR

CAN NOT BE CALLED INTO WORK

When completed, hand this sheet to the examiner.



1.3.27

DIC 1308.1



**ENERGY
NORTHWEST**
People · Vision · Solutions

**COLUMBIA GENERATING STATION
PLANT PROCEDURES MANUAL**

**INFORMATION
USE**

USE CURRENT REVISION

NUMBER 1.3.27	Approver: DPBrown for SL Belcher Sponsor: MG Pratt QPR: MB Blake	DATE 12/20/06
VOLUME NAME ADMINISTRATIVE PROCEDURES		
SECTION CONDUCT OF OPERATIONS		
TITLE EXCESSIVE HOURS WORKED CONTROL		

PROCEDURE NUMBER 1.3.27	REVISION 27	PAGE 1 of 10
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 2.2 Manager/Supervisor/Leader 3

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PROCEDURE NUMBER 1.3.27	REVISION 27	PAGE 2 of 10
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1.0 PURPOSE

This procedure establishes limitations and controls for work hours for all station Columbia Generating Station personnel and contractors who perform safety related functions. {R-4804}, {R-8858}

2.0 RESPONSIBILITIES

2.1 Plant General Manager or Designee

Authorizes deviations to the working hour restrictions for workers, as defined in Attachment 7.2, who perform safety related functions. {R-4739}

2.2 Supervisor/Manager {P-32063}

- 2.2.1 Review individual schedules to ensure that excessive hours have not been assigned/worked.
- 2.2.2 Ensure that personnel reporting to them comply with the hours worked restrictions contained in this procedure.
- 2.2.3 Recommends approval for deviation to the working hour restrictions for workers, as defined in Attachment 7.2, who perform safety related functions. {R-4739}

2.3 Each Employee {P-32063, P-157232}

Each employee has the responsibility to ensure their hours worked comply with the terms and limitations of this procedure.

2.4 Energy Northwest Technical Representative

- 2.4.1 Monitor contractor personnel hours worked for compliance with the restrictions contained in this procedure.
- 2.4.2 Ensure communication of monitoring responsibilities occurs if contractor personnel transfer from one organization/individual to another.

2.5 Contractor Supervision

Monitor contractor personnel hours worked for compliance with the restrictions contained in this procedure.

PROCEDURE NUMBER	REVISION	PAGE
1.3.27	27	3 of 10

3.0 PROCEDURE

3.1 Hours Worked Restrictions

NOTE: Overtime is not routinely scheduled to compensate for an inadequate number of personnel to safely operate and maintain the plant. However, extended periods of shutdown for refueling, major maintenance, major plant modifications, unforeseen problems, or offsite business or work activity may require substantial amounts of overtime to be used.

Limit the use of overtime to perform work to the following maximum work hours:

3.1.1 An individual shall not be permitted to work more than:

NOTE: All of the following are exclusive of shift turnover time:

- 16 hours straight
- 16 hours in any 24-hour period
- 24 hours in any 48-hour period
- 72 hours in any 168-hour (seven day) period

3.1.2 A break of at least eight continuous hours shall be allowed between scheduled work periods, including shift turnover time.

3.1.3 Except during extended shutdown periods, consider the use of excessive work hours on an individual basis and not for the entire staff on a shift.

NOTE: The following step is not applicable during extended periods of shutdown, for refueling, major maintenance, or major plant modifications.

{R-4737}

3.1.4 An individual should not work more than (14) consecutive days without having (2) days off. {R-4737}

3.1.5 If a licensed Reactor Operator or Senior Reactor Operator has been working more than 12 hours at assignments other than the Control Room, he/she shall have a 12 hour break before reassignment to the Control Room. {R-4742}

PROCEDURE NUMBER	REVISION	PAGE
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- 3.1.6 A Reactor Operator should not be required to work in excess of eight continuous hours at the control board. During a shift, the Reactor Operator should be periodically relieved by another Reactor Operator on shift. {R-4801, R-6364}
- 3.1.7 Shift turnover time should not exceed one hour. Turnover time is not included as part of hours worked restriction and should not normally cause a shift worker to exceed a 12 hour shift by more than one (1) hour, inclusive of on-coming and off-going shift turnover. {P-118035}
- 3.1.8 When a 12 hour shift individual, filling a minimum shift staffing position, does not report to work on time, the on-duty shift individual should report the fact to the Shift Manager. The individual has a maximum of one hour (maximum turnover time) to be properly relieved. The Shift Manager will determine how to fill the vacancy.

3.2 Deviation to Hours Worked Restrictions

NOTE: The Supervisor/Manager is responsible for identifying the authorized work duration and the time/date for the completion of the work.

Supervisor/Manager/Designee requests PRIOR authorization for deviation of the hours worked restrictions herein by completing the Request for Deviation of Hours Worked Restrictions (Attachment 7.1). Adequate justification includes the reasons why the individual is the only person who can do the work and the work is vital.

- 3.2.1 Justification should include the job is an emergency necessary to support the safe and efficient operation of the plant and time is not available to obtain another individual and the individual is necessary for job continuity to minimize mistakes or the individual possesses critical job skills necessary for the completion of the task.

PROCEDURE NUMBER	REVISION	PAGE
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ENERGY NORTHWEST

INSTRUCTIONAL COVER SHEET

PROGRAM TITLE LICENSED OPERATOR TRAINING

COURSE TITLE JOB PERFORMANCE MEASURE

LESSON TITLE DETERMINE IF MODE CHANGE IS ALLOWED (ADMIN)

LESSON LENGTH .5 HRS MAXIMUM STUDENTS 1

INSTRUCTIONAL MATERIALS INCLUDED

Lesson Plan PQD Code _____ Rev. No. _____

Simulator Guide PQD Code _____ Rev. No. _____

JPM PQD Code LO001639 Rev. No. 0

Exam PQD Code _____ Rev. No. _____

DIVISION TITLE Nuclear Training

DEPARTMENT Operations Training

PREPARED BY Ron Hayden DATE 06/23/08

REVISED BY _____ DATE _____

TECHNICAL REVIEW BY _____ DATE _____

INSTRUCTIONAL REVIEW BY _____ DATE _____

APPROVED BY _____ DATE _____

Operations Training Manager

Verify materials current IAW SWP-TQS-01 prior to use.

DETERMINE IF MODE CHANGE IS ALLOWED

MINOR REVISION RECORD

Minor Rev Number	Description of Revision	Affected Pages	Entered By	Effective Date	Manager Approval

JPM SETUP

Simulator ICs; Malfunctions; Triggers; Overrides:

ADMIN JPM, NO SETUP NEEDED

Special Setup Instructions:

Need a copy of PPM 3.1.2 Startup Flow Chart; Need a copy of current Technical Specifications Volume.

JPM Instructions:

Verify Current Procedure against JPM and ensure procedure critical steps match if procedure is different revision than listed in JPM. If critical steps have changed, the JPM should be revised.

The evaluator and student shall use current procedure. The evaluator should mark off steps as they are completed, note comments, and transfer the comments to the "Results of JPM" page.

Tools/Equipment: N/A

Safety Items: N/A

Task Number: SRO-0116

Validation Time: 10 minutes

Prerequisite Training: N/A

Time Critical: NO

PPM Reference: TS and PPM 3.1.2

Location: ANY

NUREG 1123 Ref: 2.4.40 2.3 / 4.0

Performance Method: PERFORM

DETERMINE IF MODE CHANGE IS ALLOWED JPM CHECKLIST

PROCEDURE VALIDATION	<p>Procedure copies for evaluator and student, if procedure revision is different from that listed on JPM, critical tasks reverified. Evaluator copy may be used for marking step completion, and comments.</p>
INITIAL CONDITIONS:	<p>Columbia is operating in MODE 4. A startup is underway following a short maintenance outage. The following conditions exist:</p> <ul style="list-style-type: none"> • SRMs have normal indications and recorder speed is at 1,000 mm/hr • All IRM indications are normal on Range 1 except IRM-A which has an upscale trip and is bypassed and recorder speed is at 1,000 mm/hr • The Minimum and Maximum ECPs have been entered on the Control Rod Sequence Pull Sheet in the Control Room • A complete set of PPM 3.1.10 readings have been taken • OSP-INST-H101s have been completed and satisfied to enter MODE 2 • The Barrier Impairment Log has no MODE change limiting conditions • The Surveillance in Progress Log shows no MODE change limiting conditions • The LCO/INOP/RFO Log shows no limiting conditions for a MODE change • HPCS-P-2 is out of service for motor oil replacement • All surveillances are completed and up to date • There are 3 inoperable control rods that are disarmed at position 00 • A panel walk down has been completed • Offgas system warmup is in progress per SOP-OG-START • All ECCS systems are in a standby lineup • RRC-P-1A and RRC-P-1B are operating at 15 hz. • Containment was de-inerted • A risk assessment has been completed for the following Out Of Service equipment: <ul style="list-style-type: none"> ○ Remote Shutdown Panel Power Transfer Switch associated with MS-RV-4A, MS-RV-4B, and MS-RV-4C ○ Lower Drywell Spray Outboard Isolation Valve, RHR-V-16B
INITIATING CUE:	<p>A mode change to MODE 2 is planned. Determine if the change to MODE 2 is allowed.</p> <p>Notify the Shift Manager (examiner) of your determination and justifications by filling out your justification on the attachment provided.</p>

DETERMINE IF MODE CHANGE IS ALLOWED

* Items are Critical Steps

Comments	Element	Standard	Sat/Unsat
RECORD START TIME: _____			
	Review PPM 3.1.2, Startup flow chart	Notes HPCS-P-2 being OOS inops the HPCS DG.	S / U *
	Review PPM 3.1.2, Startup flow chart	<p>Reviews Tech Spec 3.8.1 and determines that LCO B is applicable which requires HPCS DG to be restored to operable status in 72 hours.</p> <p>Notes that HPCS DG is required to be operable in MODE 2 and that TS 3.0.4b is not applicable to DGs.</p> <p>Determines that a Mode change is NOT allowed and fills out this reason on attachment provided.</p>	S / U *
Termination Criteria: Student hands filled out attachment to examiner.			
RECORD TERMINATION TIME: _____			
Transfer to "Results of JPM" page the following information: Procedures validated prior to use; Comments from marked up evaluator's procedure copy; Unsatisfactory critical tasks; Total JPM time; Marked Up procedure and remaining JPM pages may be discarded.			

STUDENT JPM INFORMATION CARD

Initial Conditions: Columbia is operating in MODE 4. A startup is underway following a short maintenance outage. The following conditions exist:

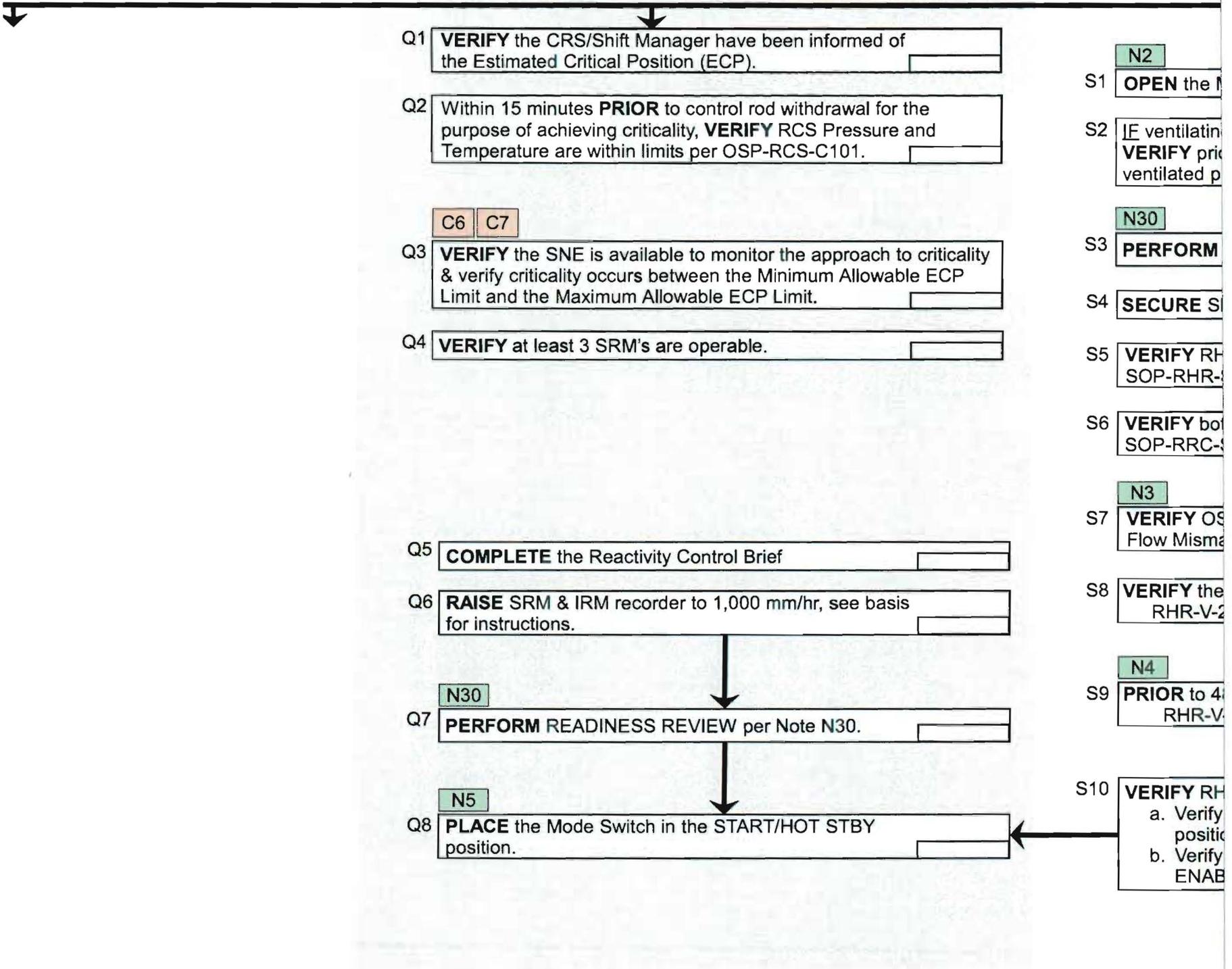
- SRMs have normal indications and recorder speed is at 1,000 mm/hr
- All IRM indications are normal on Range 1 except IRM-A which has an upscale trip and is bypassed and recorder speed is at 1,000 mm/hr
- The Minimum and Maximum ECPs have been entered on the Control Rod Sequence Pull Sheet in the Control Room
- A complete set of PPM 3.1.10 readings have been taken
- OSP-INST-H101s have been completed and satisfied to enter MODE 2
- The Barrier Impairment Log has no MODE change limiting conditions
- The Surveillance in Progress Log shows no MODE change limiting conditions
- The LCO/INOP/RFO Log shows no limiting conditions for a MODE change
- HPCS-P-2 is out of service for motor oil replacement
- All surveillances are completed and up to date
- There are 3 inoperable control rods that are at position 00
- A panel walk down has been completed
- Offgas system warmup is in progress per SOP-OG-START
- All ECCS systems are in a standby lineup
- RRC-P-1A and RRC-P-1B are operating at 15 hz.
- Containment was de-inerted
- A risk assessment has been completed for the following Out Of Service equipment:
 - Remote Shutdown Panel Power Transfer Switch associated with MS-RV-4A, MS-RV-4B, and MS-RV-4C
 - Lower Drywell Spray Outboard Isolation Valve, RHR-V-16B

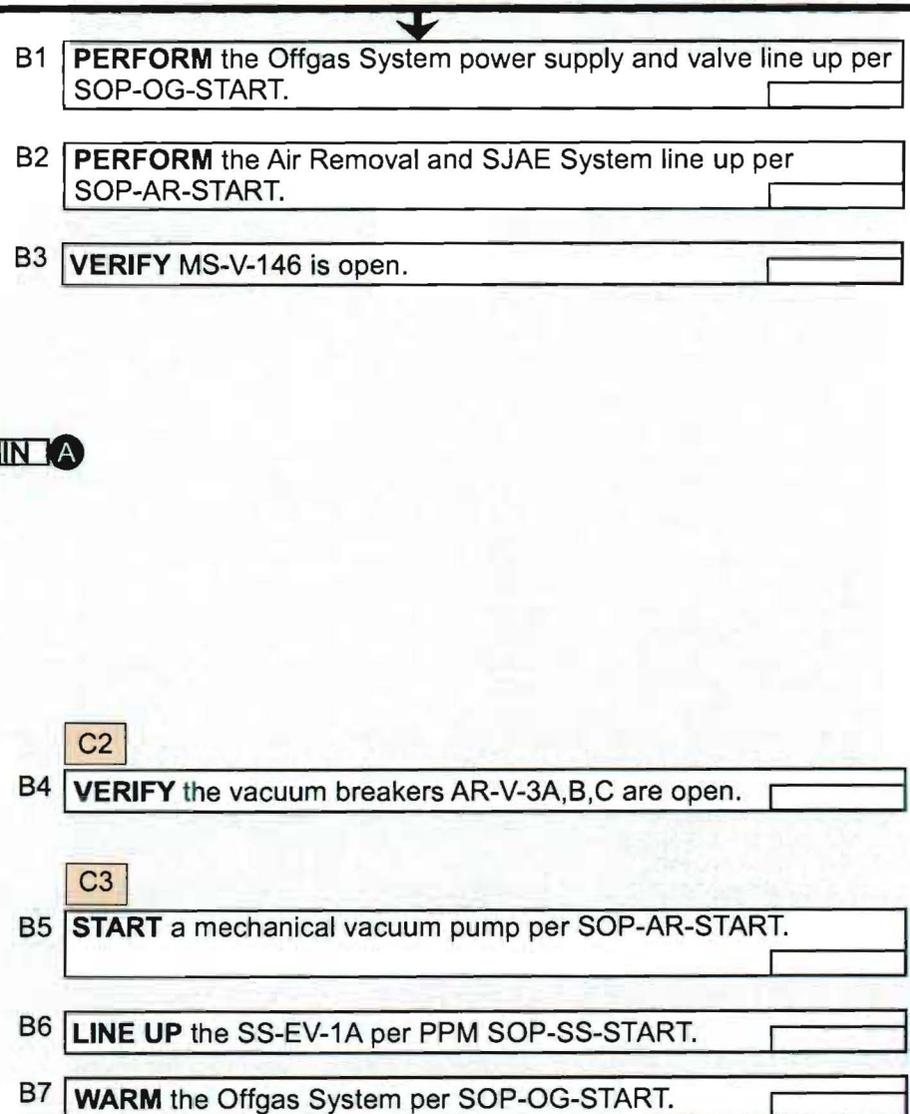
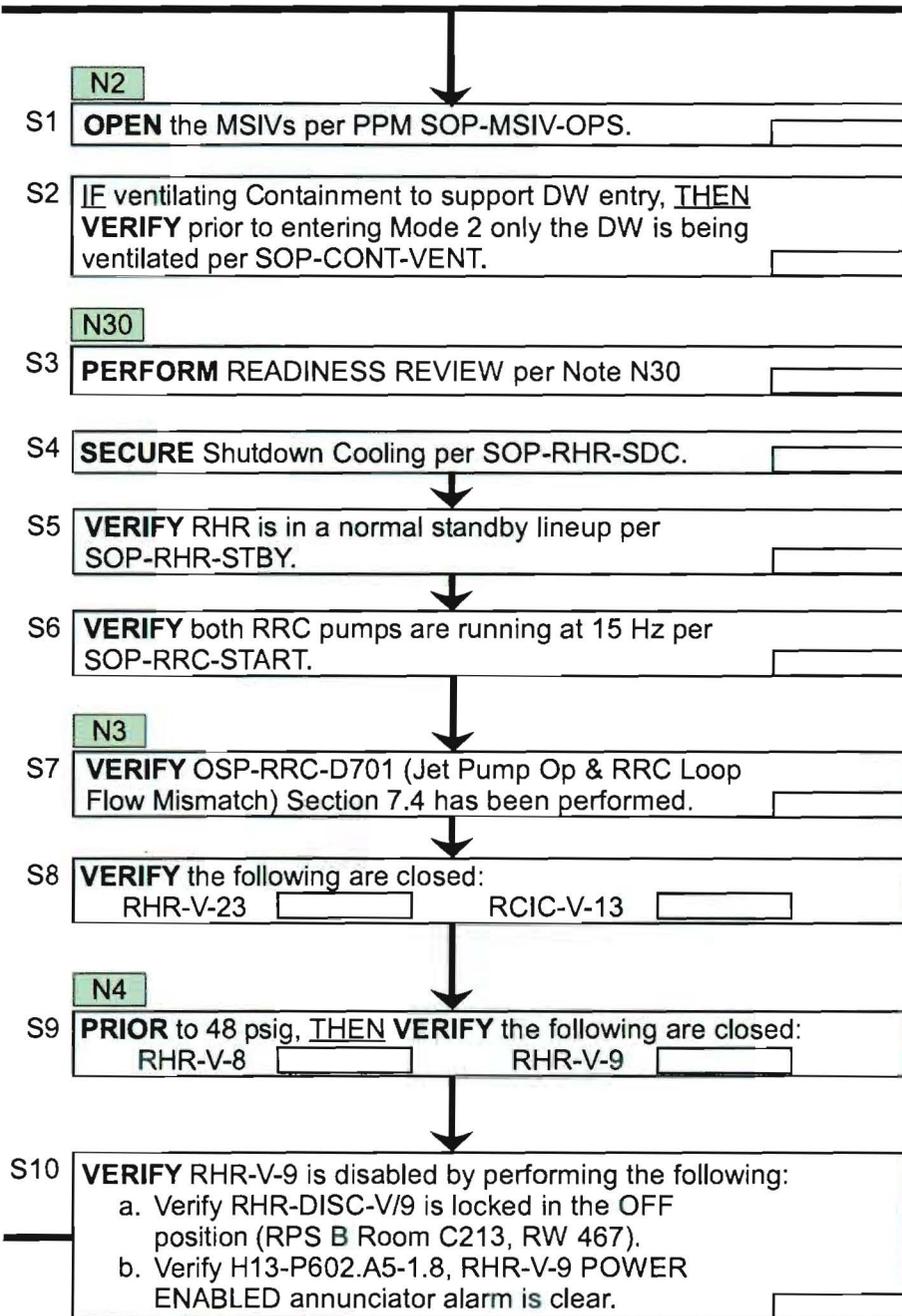
Cue:

A mode change to MODE 2 is planned.

Determine if the change to MODE 2 is allowed.

Notify the Shift Manager (examiner) of your determination by filling in your justification on the attachment provided.





N31

L1 **VERIFY** condensate temperature GT 89°F **PRIOR** to using as feedwater source for the RPV (COND-TI-804).

C1

L2 **VERIFY** long cycle cleanup isolated per SOP-COND-OPS.

N11

L3 **ESTABLISH** a Feedwater flowpath and **MAINTAIN** RPV water level with RFW-LIC-620 in MANUAL per SOP-RFW-FCV-QC.

C11 C12

L4 **ADJUST** RWCU reject flow as necessary to maintain RPV level at setpoint.

L5 **ESTABLISH** RPV water level at +36 inches.

L6 When RPV water level is at +36 inches, Then **VERIFY** :
a. RFW Level 8 trips reset.
b. HPCS Level 8 trip reset.
c. RCIC-RLY-K68 is de-energized (dropped out) at H13-P621.

L7 **VERIFY** HPCS is in a standby line-up per SOP-HPCS-STBY.

3.8 ELECTRICAL POWER SYSTEMS

3.8.1 AC Sources – Operating

LCO 3.8.1 The following AC electrical power sources shall be OPERABLE:

- a. Two qualified circuits between the offsite transmission network and the onsite Class 1E AC Electric Power Distribution System; and
- b. Three diesel generators (DGs).

APPLICABILITY: MODES 1, 2, and 3.

-----NOTE-----
Division 3 AC electrical power sources are not required to be OPERABLE when High Pressure Core Spray System is inoperable.

ACTIONS

-----NOTE-----
LCO 3.0.4.b is not applicable to DGs.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One offsite circuit inoperable.	A.1 Perform SR 3.8.1.1 for OPERABLE offsite circuit. <u>AND</u>	1 hour <u>AND</u> Once per 8 hours thereafter (continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>A. (continued)</p>	<p>A.2 Declare required feature(s) with no offsite power available inoperable when the redundant required feature(s) are inoperable.</p> <p><u>AND</u></p> <p>A.3 Restore offsite circuit to OPERABLE status.</p>	<p>24 hours from discovery of no offsite power to one division concurrent with inoperability of redundant required feature(s)</p> <p>72 hours</p> <p><u>AND</u></p> <p>6 days from discovery of failure to meet LCO when not associated with Required Action B.4.2.2</p> <p><u>AND</u></p> <p>17 days from discovery of failure to meet LCO</p>
<p>B. One required DG inoperable.</p>	<p>B.1 Perform SR 3.8.1.1 for OPERABLE offsite circuit(s).</p> <p><u>AND</u></p>	<p>1 hour</p> <p><u>AND</u></p> <p>Once per 8 hours thereafter</p> <p>(continued)</p>

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. (continued)	B.2 Declare required feature(s), supported by the inoperable DG, inoperable when the redundant required feature(s) are inoperable.	4 hours from discovery of Condition B concurrent with inoperability of redundant required feature(s)
	<u>AND</u>	
	B.3.1 Determine OPERABLE DG(s) are not inoperable due to common cause failure.	24 hours
	<u>OR</u>	
	B.3.2 Perform SR 3.8.1.2 for OPERABLE DG(s).	24 hours if not performed within the past 24 hours
	<u>AND</u>	
	B.4.1 Restore required DG to OPERABLE status.	72 hours from discovery of an inoperable DG
	<u>AND</u>	
	B.4.1 Restore required DG to OPERABLE status.	6 days from discovery of failure to meet LCO
	<u>OR</u>	(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. (continued)	<p>B.4.2.1 Establish risk management actions for the alternate AC sources.</p> <p><u>AND</u></p> <p>B.4.2.2 Restore required DG to OPERABLE status.</p>	<p>72 hours</p> <p>14 days</p> <p><u>AND</u></p> <p>17 days from discovery of failure to meet LCO</p>
C. Two offsite circuits inoperable.	<p>C.1 Declare required feature(s) inoperable when the redundant required feature(s) are inoperable.</p> <p><u>AND</u></p> <p>C.2 Restore one offsite circuit to OPERABLE status.</p>	<p>12 hours from discovery of Condition C concurrent with inoperability of redundant required feature(s)</p> <p>24 hours</p>

(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>D. One offsite circuit inoperable.</p> <p><u>AND</u></p> <p>One required DG inoperable.</p>	<p>-----NOTE----- Enter applicable Conditions and Required Actions of LCO 3.8.7, "Distribution Systems – Operating," when Condition D is entered with no AC power source to any division. -----</p> <p>D.1 Restore offsite circuit to OPERABLE status.</p> <p><u>OR</u></p> <p>D.2 Restore required DG to OPERABLE status.</p>	<p>12 hours</p> <p>12 hours</p>
<p>E. Two required DGs inoperable.</p>	<p>E.1 Restore one required DG to OPERABLE status.</p>	<p>2 hours</p> <p><u>OR</u></p> <p>24 hours if Division 3 DG is inoperable</p>
<p>F. Required Action and Associated Completion Time of Condition A, B, C, D, or E not met.</p>	<p>F.1 Be in MODE 3.</p> <p><u>AND</u></p> <p>F.2 Be in MODE 4.</p>	<p>12 hours</p> <p>36 hours</p>
<p>G. Three or more required AC sources inoperable.</p>	<p>G.1 Enter LCO 3.0.3.</p>	<p>Immediately</p>



ENERGY NORTHWEST

INSTRUCTIONAL COVER SHEET

PROGRAM TITLE LICENSED OPERATOR INITIAL TRAINING

COURSE TITLE JOB PERFORMANCE MEASURE - ADMIN

LESSON TITLE DETERMINATION IF MOVEMENT OF HEAVY LOAD OVER SPENT FUEL POOL CAN OCCUR

LESSON LENGTH .5 HRS MAXIMUM STUDENTS 1

INSTRUCTIONAL MATERIALS INCLUDED

Lesson Plan PQD Code _____ Rev. No. _____

Simulator Guide PQD Code _____ Rev. No. _____

JPM PQD Code LO001630 Rev. No. 0

Exam PQD Code _____ Rev. No. _____

DIVISION TITLE Nuclear Training

DEPARTMENT Operations Training

PREPARED BY Ron Hayden DATE 5/27/08

REVISED BY _____ DATE _____

TECHNICAL REVIEW BY _____ DATE _____

INSTRUCTIONAL REVIEW BY _____ DATE _____

APPROVED BY _____ DATE _____

Operations Training Manager

Verify materials current IAW SWP-TQS-01 prior to use.

DETERMINE IF LOAD CAN BE MOVED OVER SPENT FUEL POOL

MINOR REVISION RECORD

Minor Rev Number	Description of Revision	Affected Pages	Entered By	Effective Date	Manager Approval

JPM SETUP

Simulator ICs; Malfunctions; Triggers; Overrides:

N/A

Setup Instructions:

Have a copy of the following for each student:

PPM 1.3.40 pages 1-7 and attachment 7.5

LCS 1.9.2 including graph

JPM Instructions:

Verify the current revisions of each drawing against the JPM. If the drawings are a different revision than listed in the JPM, ensure the JPM is still technically correct. If the JPM is not technically correct, the JPM should be revised.

The evaluator document results on the "Results of JPM" page.

Tools/Equipment: N/A

Safety Items: N/A

Task Number: SRO-0059; SRO-0096

Validation Time: 15 minutes

Prerequisite Training: N/A

Time Critical: NO

PPM Reference: PPM 1.3.40 Rev. 18

Location: CLASSROOM OR SIMULATOR

LCS 1.9.2 Rev. 44

NUREG 1123 Ref: 2.2.26 2.5 / 3.7

Performance Method: PERFORM

DETERMINE IF LOAD CAN BE MOVED OVER SPENT FUEL POOL

JPM CHECKLIST

PROCEDURE VALIDATION:	Procedure copies for evaluator and student, if procedure revision is different from that listed on JPM, critical tasks reverified. Evaluator copy may be used for marking step completion, and comments.
INITIAL CONDITIONS:	Columbia is shutdown for a refueling outage with the following plant parameters given: Fuel shuffle has been completed with core verification taking place The Spent Fuel Pool has been verified to be subcritical for GT 24 Hrs The following equipment is OOS: RHR-P-2C HPCS System including the HPCS-DG RRA-RIS-3 Reactor Building In-Plant Air Particulate Monitor REA-RIS-609A/B & C/D Reactor Building Exhaust Plenum RMS PRM-RE-1A, 1B & 1C Reactor Building Low, Intermediate, and High Range Stack Monitor TRA-RIS-1 Turbine Building In-Plant Air Particulate Monitor
INITIATING CUE:	The Refueling Floor Supervisor has just requested permission for a load of 1190 lbs to be carried 5 foot over the Spent Fuel Pool. On the next page, indicate your intention of allowing the move over the Spent Fuel Pool by initialing where indicated OR indicate your intention of disallowing the move over the Spent Fuel Pool and your associated reason. When done, hand the completed sheet to the examiner.

STUDENT JPM INFORMATION CARD

Initial Conditions:

Columbia is shutdown for a refueling outage with the following plant parameters given:

Fuel shuffle has been completed with core verification taking place

The Spent Fuel Pool has been verified to be subcritical for GT 24 Hrs

The following equipment is OOS:

RHR-P-2C

HPCS System including the HPCS-DG

RRA-RIS-3 Reactor Building In-Plant Air Particulate Monitor

REA-RIS-609A/B & C/D Reactor Building Exhaust Plenum RMS

PRM-RE-1A, 1B & 1C Reactor Building Low, Intermediate, and High Range Stack Monitor

TRA-RIS-1 Turbine Building In-Plant Air Particulate Monitor

Cue:

The Refueling Floor Supervisor has just requested permission for a load of 1190 lbs to be carried 5 foot over the Spent Fuel Pool.

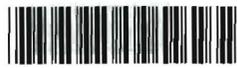
On the next page, indicate your intention of allowing the move over the Spent Fuel Pool by initialing where indicated OR indicate your intention of disallowing the move over the Spent Fuel Pool and your associated reason.

When done, hand the completed sheet to the examiner.

YES – I would give permission for the 1190 lb load to be moved 5 foot over the Spent Fuel Pool as requested by the Refueling Floor Supervisor.

Initials

NO – I would NOT give permission for the 1190 lb load to be moved 5 foot over the Spent Fuel Pool as requested by the Refueling Floor Supervisor for the following reason:



1.3.40

DIC 1750



**ENERGY
NORTHWEST**
People · Vision · Solutions

**COLUMBIA GENERATING STATION
PLANT PROCEDURES MANUAL**

**REFERENCE
USE**

USE CURRENT REVISION

NUMBER 1.3.40	Approver: DP Brown for SL Belcher Sponsor: MG Pratt QPR: MG Pratt	DATE 03/14/07
VOLUME NAME ADMINISTRATIVE PROCEDURES		
SECTION CONDUCT OF OPERATIONS		
TITLE OUTAGE MODE CHANGE, REFUELING ACTIVITY READINESS, AND ISFSI ACTIVITY READINESS EVALUATION		

PROCEDURE NUMBER 1.3.40	REVISION 18	PAGE 1 of 35
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PROCEDURE NUMBER 1.3.40	REVISION 18	PAGE 2 of 35
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1.0 PURPOSE

This procedure provides:

- Instructions for Mode change from Mode 4 to Mode 5, or Mode 5 to Mode 4, to ensure that all concerned departments are prepared for the Mode change and thus avoid conflicts with Technical Specifications. {C-3246}
- Technical Specification requirements for refueling activities that may include core alterations, irradiated fuel handling in secondary containment and control rod removal. These activities do not always require a Mode change.
- Technical Specification requirements for ISFSI activities for irradiated fuel handling in secondary containment. These activities do not require a Mode change.

This procedure is not meant to replace plant Technical Specifications or ISFSI Technical Specifications.

2.0 REFERENCES

- 2.1 LER 86-005, Missed Surveillance for Mode Change {C-3246}
- 2.2 GI2-04-100, Prohibit Entry Into Mode 4 From Mode 5 Using Provisions of LCO 3.0.4 {C-12234}
- 2.3 FSAR 9.1.2.1.1.2.d {R-5883}
- 2.4 SWP-RXE-01, Reactivity Management Program (OER 8600902A) {P-104550}
- 2.5 PER 296-0519-06, Adverse Trends of PERs {P-133491}
- 2.6 Plant Technical Specifications
- 2.7 ISFSI Technical Specifications

PROCEDURE NUMBER 1.3.40	REVISION 18	PAGE 3 of 35
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3.0 PREREQUISITES

- 3.1 For Mode changes, the plant is should be in a stable Mode such that all departments have time to comply with Technical Specifications prior to a planned Mode or condition change.
- 3.2 For Mode changes, a cognizant person from each department is on site with signature authority to approve a Mode change for their department. This is normally the department manager or his designee.

4.0 PRECAUTIONS AND LIMITATIONS

- 4.1 Failure to comply with this procedure could lead to a violation of Technical Specifications.
- 4.2 A Mode change is not to be made until all concerned departments have formally indicated their readiness.
- 4.3 This procedure is primarily focused toward the Technical Specification requirements to enact a condition change. Additional requirements are specified in each applicable PPM. The attachments are requirements to satisfy Technical Specifications. There are no # signs identifying each individual criterion.

PROCEDURE NUMBER 1.3.40	REVISION 18	PAGE 4 of 35
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5.0 PROCEDURE

5.1 Mode Changes

NOTE: Technical Specification 3.0.4 does apply for Mode change from 4 to 5 and 5 to 4. The Mode change may be made without the applicable system(s) operable, provided a risk assessment has been performed per PPM 1.5.14, with the exception of RHR SDC, which must be operable when transitioning from Mode 5 to 4. {C-12234}

5.1.1 The PRE-PLANNED Mode change notification is initiated by the Operations department, per plant operating requirements.

NOTE: The Shift Manager determines which Mode/Condition changes require Department Manager review.

5.1.2 Appropriate departments should be informed of intended Mode/Condition change.

NOTE: The computerized surveillance printouts are a good source (but not the only source) to verify compliance with Technical Specifications when changing modes. As a minimum, the TS Section listed on Attachment 7.2 should be reviewed.

5.1.3 Each Department Manager is to verify compliance to Technical Specifications prior to the Mode/Condition change by reporting to the Outage Manager or Operations Manager for forced outages and signing the space on Attachment 7.1.

5.1.4 The CRS/SM should perform search of LCO/INOP/RFO log on "Mode CHANGE ALLOWED = NO". {P-133491}

NOTE: Attachment 7.3 should be used as a guideline. It is not required to be retained. A Crystal Report, located at "adhoc\operations\1-3-40 Surv Complt & Late Date for Outage-Rltd Rqmts Attach", has been made that lists all the surveillances in PPM 1.3.40, Attachment 7.3, including their Last Date completed and Late Dates.

5.1.5 The CRS/SM should review Attachment 7.3 for the desired Mode change.

PROCEDURE NUMBER 1.3.40	REVISION 18	PAGE 5 of 35
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- 5.1.6 The Outage Manager ensures that all departments are ready for Mode change. When all departments are ready for Mode change the Outage Manager reports to the Shift Manager the station's readiness for Mode change. The Shift Manager should ascertain that all concerned departments have agreed to the planned Mode/Configuration.
- 5.1.7 The Shift Manager should sign the notification form indicating its completeness.
- 5.1.8 The Shift Manager can then change Plant operating Mode/Configuration as required by Plant conditions.

PROCEDURE NUMBER 1.3.40	REVISION 18	PAGE 6 of 35
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5.2 Refueling Activities

NOTE: Attachment 7.3 should be used as a guideline and is not required to be retained. A Crystal Report, located at “adhoc\operations\1-3-40 Surv Complt & Late Date for Outage-Rltd Rqmts Attach”, has been made that lists all the surveillances in PPM 1.3.40, Attachment 7.3, including their Last Date completed and Late Dates.

- 5.2.1 Complete Attachment 7.3. N/A those blocks that are not applicable.
- 5.2.2 Ensure the specific requirements for the refueling activity to be performed are met prior to commencement of that activity.
- 5.2.3 Perform a search of the LCO/INOP/RFO log for “Mode = Other”. Verify the search results allow refueling activities.
- 5.2.4 Attachment 7.3 should be completed for initial irradiated fuel handling during refuel outage, and anytime refuel operations have stopped for an extended period of time (typically GE 24 hours).
- 5.2.5 When performing control rod withdrawal for Control Rod Scram Timing or Control Rod Stroke Timing, refer to Attachment 7.4 for specific requirements.
- 5.2.6 When moving any loads over or in the Spent Fuel Pool, refer to Attachment 7.5 for specific requirements. {P-158625}

5.3 ISFSI Activities

NOTE: Attachment 7.6 should be used as a guideline and is not required to be retained. A Crystal Report, located at “adhoc\operations\ 1-3-40 Surv Complt & Late Date For ISFSI Rqmts Attach Attachment 7.6”, has been made that lists the surveillances in PPM 1.3.40, Attachment 7.6, including their Last Date completed and Late Dates.

- 5.3.1 Complete Attachment 7.6. N/A those blocks that are not applicable.
- 5.3.2 Ensure the specific requirements for the irradiated fuel handling activity are met prior to commencement of that activity.
- 5.3.3 Perform a search of the LCO/INOP/RFO log for “Mode = Other”. Verify the search results allow ISFSI activities.
- 5.3.4 Attachment 7.6 should be completed prior to commencing to load each ISFSI MPC.

PROCEDURE NUMBER	REVISION	PAGE
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MOVING LOADS OVER/IN THE SPENT FUEL POOL REQUIREMENTS

Specific Requirement	Applicability	Requirement Satisfied Yes/No	Date
<p>Satisfy the following conditions:</p> <ol style="list-style-type: none"> 1. Irradiated fuel in the Spent Fuel Pool has been subcritical for at least 24 hours (cooling, decay time). <p>And</p> <ol style="list-style-type: none"> 2. Loads meet height and weight restrictions of LCS 1.9.2. <p>And</p> <ol style="list-style-type: none"> 3. Sufficient Reactor Building ventilation and instrumentation (or alternate sampling methods) are functional to monitor an offsite release. 	<p>During movement of loads over fuel assemblies stored in the Spent Fuel Pool.</p>		

Attachment 7.5

<p>PROCEDURE NUMBER 1.3.40</p>	<p>REVISION 18</p>	<p>PAGE 34 of 35</p>
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1.9 REFUELING OPERATIONS

1.9.2 Crane Travel

- RFO 1.9.2
- a. Crane travel with loads, other than the cavity in-vessel service platform (CISP), over the spent fuel storage pool racks shall be within the limits of Figure 1.9.2-1.
 - b. Crane travel with the CISP over the spent fuel storage pool racks shall be within the limits of SR 1.9.2.2 and SR 1.9.2.3.

APPLICABILITY: With irradiated fuel stored in the spent fuel storage pool (SFP) racks.

COMPENSATORY MEASURES

-----NOTE-----
RFO 1.0.3 is not applicable.

CONDITION	REQUIRED COMPENSATORY MEASURE	COMPLETION TIME
A. Requirements of RFO not met.	A.1 Initiate actions to move the crane load from over the spent fuel storage pool racks.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 1.9.2.1 -----NOTE----- Only required when crane is in use. ----- Perform system functional test.	7 days
SR 1.9.2.2 Verify the CISP extension over the spent fuel pool is less than 7 feet.	At all times during CISP lift
SR 1.9.2.3 Verify the CISP height is less than 6 feet above the refuel floor.	At all times during CISP lift

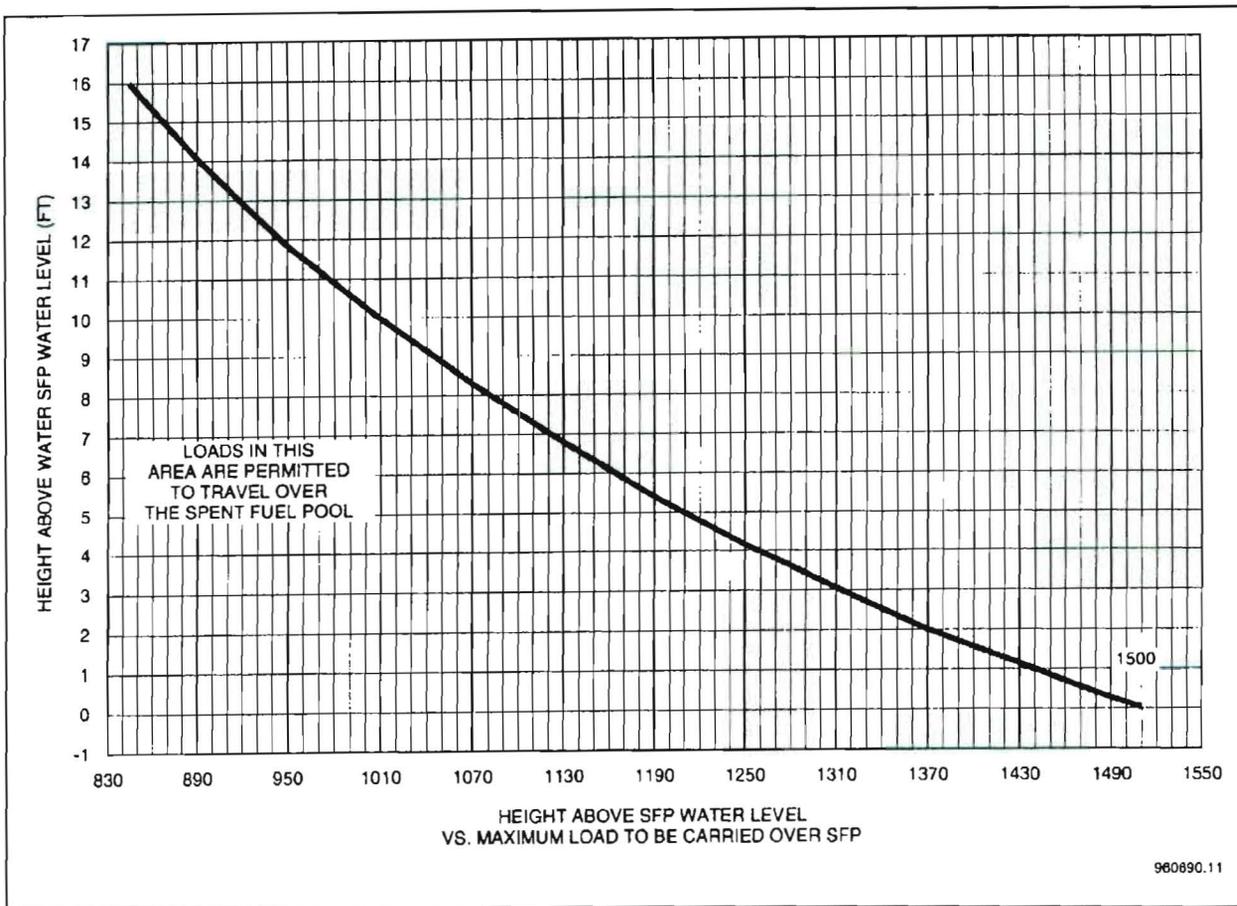


Figure 1.9.2-1
Crane Travel



ENERGY NORTHWEST

INSTRUCTIONAL COVER SHEET

PROGRAM TITLE LICENSED OPERATOR TRAINING

COURSE TITLE JOB PERFORMANCE MEASURE

LESSON TITLE PERFORM QEDPS (ADMIN) (TC)

LESSON LENGTH .5 HRS MAXIMUM STUDENTS 1

INSTRUCTIONAL MATERIALS INCLUDED

Lesson Plan PQD Code _____ Rev. No. _____

Simulator Guide PQD Code _____ Rev. No. _____

JPM PQD Code LO001631 Rev. No. 0

Exam PQD Code _____ Rev. No. _____

DIVISION TITLE Nuclear Training

DEPARTMENT Operations Training

PREPARED BY Ron Hayden DATE 05/28/08

REVISED BY _____ DATE _____

TECHNICAL REVIEW BY _____ DATE _____

INSTRUCTIONAL REVIEW BY _____ DATE _____

APPROVED BY _____ DATE _____

Operations Training Manager

Verify materials current IAW SWP-TQS-01 prior to use

MINOR REVISION RECORD

Minor Rev Number	Description of Revision	Affected Pages	Entered By	Effective Date	Manager Approval

JPM SETUP

Simulator ICs; Malfunctions; Triggers; Overrides:

Any IC. If in classroom need access to ARP for moisture alarm.

Special Setup Instructions:

Log onto a Computer that has the QEDPS program on it. The computer should be connected to a printer. Ensure paper is loaded in the printer.
 Student should have access to Operator Aid for Stability Class determination.

JPM Instructions:

Verify Current Procedure against JPM and ensure procedure critical steps match if procedure is different revision than listed in JPM. If critical steps have changed, the JPM should be revised.

The evaluator and student shall use current procedure. The evaluator should mark off steps as they are completed, note comments, and transfer the comments to the “Results of JPM” page.

Tools/Equipment: Computer / Printer.

Safety Items: None

Task Number: SRO-0029

Validation Time: 10 Minutes

Prerequisite Training: N/A

Time Critical: Yes - 15 Minutes

PPM Reference: PPM 13.8.1 Rev. 28

Location: Simulator / Classroom

NUREG 1123 Ref: 2.3.10 (2.9 / 3.3)

Performance Method: Perform

JPM CHECKLIST

PROCEDURE VALIDATION:	Procedure copies for evaluator and student, if procedure revision is different from that listed on JPM, critical tasks reverified. Evaluator copy may be used for marking step completion, and comments.
INITIAL CONDITIONS:	The plant has experienced an event that has resulted in the following conditions: Columbia scrammed one hour and 45 minutes ago. An unisolable leak in the RWCU system has existed for the past two hours and 25 minutes. B SGT. train is tagged out for maintenance. There is a 'HEPA A-1 OUTLET MOIST HIGH' annunciator alarmed on H13-P827. Reactor Building radiation levels on RE-RMS-1A indicate 1.0 E+06 cps and RE-RMS-1B indicates 1.9 E+04 cps. Standby Gas Treatment flow is 4850 cfm. Wind direction is from 130°, wind speed is 7 mph, and delta T is +2.5°F.
INITIATING CUE:	You have been directed to perform a QEDPS using the computer based QEDPS program. Print out the QEDPS and associated map and hand them to your examiner. When done – quit the QEDPS program and log off of the computer. This is a time critical JPM and your time starts now.

* Items are Critical Steps

Comments	ELEMENT	Standard	Sat/Unsat
RECORD START TIME: _____			
Low range off scale high	Indicates Monitor used	Checks RB Stack Intermediate Range	S / U *
	Enters Monitor reading	Enters RE-RMS-1B indication of 1.9e+04 (or 19000)	S / U *
SM-8 locked out	STANDBY GAS TREATMENT	Checks One Train	S / U *
Moisture alarm	SGT FILTER STATUS	Checks Damaged	S / U *
	SGT FLOW RATE	Enters 4850	S / U *
Release duration is 2 hr 25 min. rounded up to three hrs and 2 hrs added for a total of 5 hrs	PROJECTED RELEASE DURATION	Enters 5 hrs 0 minutes	S / U *
	TIME SINCE REACTOR SHUTDOWN	Enters 1 hr and 45 minutes	S / U *
Stability class is read off of operator aid using the +2.5°F	METEOROLOGICAL DATA:	Enters:	
	Wind Direction	130	S / U *
	Wind Speed	7	S / U *
	Stability Class	F	S / U *

* Items are Critical Steps

Comments	ELEMENT	Standard	Sat/Unsat
	RUNS QEDPS	Depresses RUN icon	S / U *
	Prints QEDPS	Depresses PRINT icon on QEDPS screen	S / U *
	Prints associated Map	Depresses MAP icon then the PRINT icon	S / U *
Termination Criteria: Student hands the printed out QEDPS and associated MAP to the examiner.			
IF NOT DONE - INFORM THE STUDENT TO QUIT THE QEDPS PROGRAM AND LOG OFF OF THE COMPUTER.			
RECORD TERMINATION TIME: _____			
Transfer the following information to the "Results of JPM" page: Procedures validated prior to use; Comments from marked up evaluator's procedure copy; Unsatisfactory critical tasks; Total JPM time. The marked up procedure and remaining JPM pages may be discarded.			

STUDENT JPM INFORMATION CARD

Initial Conditions:

The plant has experienced an event that has resulted in the following conditions:

- Columbia was scrammed one hour and forty five minutes ago
- An unisolable leak in the RWCU system has existed for the past two hours and twenty five minutes
- B SGT train is tagged out for maintenance
- There is a 'HEPA A-1 OUTLET MOIST HIGH' annunciator alarmed on H13-P827
- Reactor Building radiation levels on RE-RMS-1A indicate 1.0 E+06 cps
- Reactor Building radiation levels on RE-RMS-1B indicate 1.9 E+04 cps
- SGT flow is 4850 cfm
- Wind direction is from 130°
- Wind speed is 7 mph
- Delta T is +2.5°F

Cue:

You have been directed to perform a QEDPS using the computer based QEDPS program.

Print out the QEDPS and associated map and hand them to your examiner.

When done – quit the QEDPS program and log off of the computer.

**THIS IS A TIME CRITICAL JPM AND YOUR
TIME START NOW**

Centerline doses and dose rates at selected distances

Distance (miles)	0.6	1.2	2.0	5.0	7.0	10.0
TEDE (mrem)	25.2	16.6	13.2	7.5	5.6	4.0
External Dose	1.5	1.1	0.9	0.5	0.4	0.3
Thyroid CDE	387.9	253.9	201.5	113.5	85.4	61.2

TEDE = Cloud Shine + 4-Day Ground Shine + CEDE Inhalation
 External Dose = Cloud Shine + Initial Ground Shine

NOTE: ***** indicates a value greater than 100,000 mrem

TEDE Rate (mrem/h)	5.0	3.3	2.6	1.5	1.1	0.8
External Dose Rate	0.3	0.2	0.2	0.1	0.1	0.1
Thyroid CDE Rate	77.5	50.8	40.3	22.7	17.1	12.3
Worker Adj. Factor	19.4	17.3	16.5	15.2	14.9	14.8
Transport Time (h)	5.1	5.2	5.3	5.7	6.0	6.4

NOTE: Dose and dose rate values below 0.05 have been set to zero.

You have selected: Int. Range Stack Monitor Reading = 1.90E+04 cps
 Release is Unfiltered Flow = 4850. cfm
 Wind Dir. From (deg.) = 130. Wind Spd (mph) = 7.0 Stab. Class = F
 Release duration: 5 hr 0 min Holdup duration: 1 hr 45 min

Source term: A total of 1.8E+03 Ci were released.

Nuclide	Release (Ci/s)	Fract.	Nuclide	Release (Ci/s)	Fract.	Nuclide	Release (Ci/s)	Fract.
Kr-85	1.3E-04	3.4E-06	Kr-85m	4.0E-03	3.4E-06	Kr-87	4.1E-03	3.4E-06
Kr-88	9.9E-03	3.4E-06	Sr-89	2.3E-04	3.9E-08	Sr-90	9.0E-06	3.9E-08
Sr-91	2.4E-04	3.9E-08	Y-91	2.0E-05	2.6E-09	Mo-99	1.0E-04	1.0E-08
Tc-99m	1.0E-04	6.3E-08	Ru-103	7.4E-05	1.0E-08	Ru-106	1.6E-05	1.0E-08
Sb-127	7.4E-05	1.9E-07	Sb-129	3.1E-04	1.9E-07	Te-129m	6.7E-05	1.9E-07
Te-131m	1.4E-04	1.9E-07	Te-132	1.5E-03	1.9E-07	I-131	2.4E-03	4.5E-07
I-132	3.5E-03	4.5E-07	I-133	4.7E-03	4.5E-07	I-134	1.4E-03	4.5E-07
I-135	3.6E-03	4.5E-07	Xe-131m	2.2E-04	3.4E-06	Xe-133	3.8E-02	3.4E-06
Xe-133m	1.3E-03	3.4E-06	Xe-135	1.0E-02	3.4E-06	Xe-138	2.2E-04	3.4E-06
Cs-134	1.6E-04	3.2E-07	Cs-136	6.2E-05	3.2E-07	Cs-137	1.0E-04	3.2E-07
Ba-140	5.3E-04	5.2E-08	La-140	2.6E-05	2.6E-09	Ce-144	7.0E-05	1.3E-08
Np-239	1.3E-03	1.3E-08	Rb-87	1.9E-18	3.2E-07	Rb-88	9.9E-03	3.1E-06
Y-90	1.1E-08	2.6E-09	Y-91m	7.5E-06	2.6E-09	Tc-99	1.3E-14	1.0E-08
Rh-103	5.4E-05	1.0E-08	Rh-106	1.6E-05	1.0E-08	Te-127m	5.8E-09	1.9E-07
Te-127	7.5E-06	1.9E-07	Te-129	6.7E-05	6.0E-08	I-129	3.3E-15	4.5E-07
Te-131	3.1E-05	1.9E-07	Xe-135m	3.6E-03	2.7E-06	Cs-135	4.9E-14	3.2E-07
Cs-138	2.7E-04	3.2E-07	Ba-137m	1.0E-04	3.4E-07	Pr-144m	2.0E-07	2.6E-09
Pr-144	7.0E-05	1.3E-08						

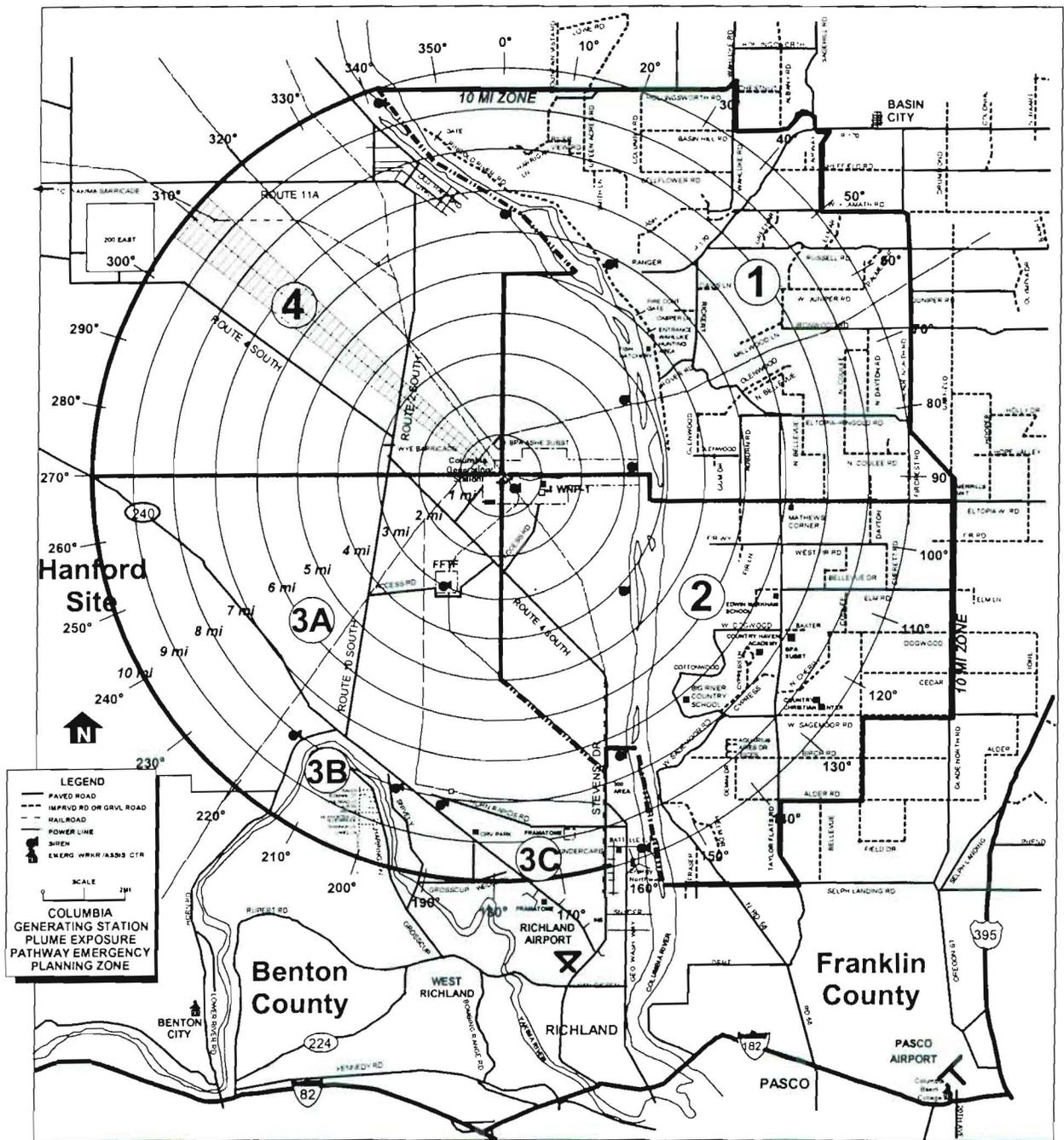
Fract. is the fraction of the core inventory released.

NOT FOR DISTRIBUTION -- FOR INTERNAL USE ONLY!!

Computed By: _____

Reviewed By: _____

10-MILE EMERGENCY PLANNING ZONE (EPZ)



950141
Jan 2005

Columbia Generating Station (QEDPS v. 3.0) Run: 06/24/2008 07:26:10
 Plume centerline dose values (mrem) are listed below.

Distance (miles)	0.6	1.2	2.0	5.0	7.0	10.0
TEDE (mrem)	25.2	16.6	13.2	7.5	5.6	4.0
Thyroid CDE	387.9	253.9	201.5	113.5	85.4	61.2

Plume boundary on map is 10% of centerline value.

NOTE: ***** indicates a value greater than 100,000 mrem

Worker Adj. Factor	19.4	17.3	16.5	15.2	14.9	14.8
--------------------	------	------	------	------	------	------

APPROVED FOR RELEASE BY:

(Emergency Director)



ENERGY NORTHWEST

INSTRUCTIONAL COVER SHEET

PROGRAM TITLE LICENSED OPERATOR TRAINING

COURSE TITLE JOB PERFORMANCE MEASURE

LESSON TITLE RECLASSIFY A SECURITY EVENT (SAE) (TC) (ADMIN)

LESSON LENGTH .5 HRS MAXIMUM STUDENTS 1

INSTRUCTIONAL MATERIALS INCLUDED

Lesson Plan PQD Code _____ Rev. No. _____

Simulator Guide PQD Code _____ Rev. No. _____

JPM PQD Code LO001569 Rev. No. 1

Exam PQD Code _____ Rev. No. _____

DIVISION TITLE Nuclear Training

DEPARTMENT Operations Training

PREPARED BY Ron Hayden DATE 06/20/06

REVISED BY Ron Hayden DATE 05/28/08

TECHNICAL REVIEW BY _____ DATE _____

INSTRUCTIONAL REVIEW BY _____ DATE _____

APPROVED BY _____ DATE _____

Operations Training Manager

Verify materials current IAW SWP-TQS-01 prior to use

MINOR REVISION RECORD

Minor Rev Number	Description of Revision	Affected Pages	Entered By	Effective Date	Manager Approval

JPM SETUP

Simulator ICs; Malfunctions; Triggers; Overrides:

N/A

Special Setup Instructions:

Have a blank CNF form, a copy of PPM 13.1.1 EAL Chart, and PPM 13.1.1A available.

JPM Instructions:

Verify Current Procedure against JPM and ensure procedure critical steps match if procedure is different revision than listed in JPM. If critical steps have changed, the JPM should be revised.

The evaluator and student shall use current procedure. The evaluator should mark off steps as they are completed, note comments, and transfer the comments to the “Results of JPM” page.

Tools/Equipment: None

Safety Items: None

Task Number: SRO-0529

Validation Time: 15 minutes

Prerequisite Training: None

Time Critical: 30 minutes

PPM Reference: 13.1.1 Rev. 36; PPM 13.1.1A Rev. 19

Location: Any

NUREG 1123 Ref: 2.4.28 2.3 / 3.3

Performance Method: Perform

JPM CHECKLIST

PROCEDURE VALIDATION	Regarding procedure copies for evaluator and student, if the procedure revision is different from that listed on the JPM, verify that the critical task steps are the same. Evaluator copy may be used for marking step completion, and comments.
INITIAL CONDITIONS:	The plant is operating at 100% power. One hour ago, the FBI notified security and plant management that a mid-western terrorist group has threatened to interfere with the operation of Columbia Generating Station. The FBI considers this a credible threat. An Unusual Event was declared 50 minutes ago.
INITIATING CUE:	<p>Five minutes ago, security called and notified you that an explosive device has been discovered in the 'A' Service Water Pump House. The device is of sufficient size that if it should detonate, SW-P-1A would be destroyed. All personnel have been evacuated from the area.</p> <p>Meteorological data:</p> <ul style="list-style-type: none"> • Stability class E • Wind direction is from 245° • Wind speed 4 mph • No precipitation <p>You are the Emergency Director. Determine if an EAL change is required. The electronic CNF form is not available. Complete a paper CNF form if necessary and present the completed form to the examiner. If a CNF is not required, initial the line where indicated on the attached sheet and present that sheet to the examiner.</p> <p style="text-align: center;">THIS IS A TIME CRITICAL JPM AND YOUR TIME STARTS NOW</p>
<p>Candidate is allowed 15 minutes to determine if a change in classification is needed and 15 minutes to complete the CNF form for a total of 30 minutes.</p>	

* Items are Critical Steps

Comments	Element	Standard	Sat/Unsat
RECORD START TIME: _____			
	Complete the CNF Form	CNF Form is completed as follows:	
		Block 1 – checks Emergency or Drill	S / U
		Block 2 – Fills in ‘2’	S / U
		Block 3 – Fills in his/her name and a phone number	S / U
		Checks block 4.b (Reclassification) and fills in current Date and Time	S / U *
		Checks block 5.c (Site Area Emergency)	S / U *
		Block 6 left blank	S / U
		Block 7: Enters... Wind Speed = 4 Wind Direction: from = 245° Precipitation = ‘No’ block checked Stability Class = E	S / U S / U S / U S / U
		Block 8 checks ‘No Release’	S / U
		Block 9 checks ‘N/A’	S / U
		Block 10 checks ‘N/A’	S / U
		Block 11 checks ‘No’	S / U
		Block 12: EAL # 9.1.S.1 or 9.1.S.2 Description – Similar to ‘Bomb in SW pump house’	S / U * S / U *
		Block 13: Checks a, b or c	S / U
Termination Criteria: Student presents the completed CNF to the examiner.			
RECORD TERMINATION TIME: _____			

STUDENT JPM INFORMATION CARD

Initial Conditions:

The plant is operating at 100% power. One hour ago, the FBI notified security and plant management that a mid-eastern terrorist group has threatened to interfere with the operation of Columbia Generating Station. The FBI considers this as a credible threat. An Unusual Event was declared 50 minutes ago.

Cue:

Five minutes ago, security called and notified you that an explosive device has been discovered in the 'A' Service Water Pump House. The device is of sufficient size that, if it should detonate, SW-P-1A would be destroyed. All personnel have been evacuated from the area.

Meteorological data:

- Stability class is E
- Wind direction is from 245°
- Wind speed is 4 mph
- No precipitation

You are the Emergency Director. Determine if an EAL change is required.

The electronic CNF form is not available. Complete a paper CNF form if necessary and present the completed form to the examiner.

If a CNF is not required, initial the line where indicated on the attached sheet and present that sheet to the examiner.

**THIS IS A TIME CRITICAL JPM
AND YOUR TIME STARTS NOW**

Based on the event presented, I have determined that an upgrade from the Unusual Event is required and I have completed a CNF Form.

Initials

Based on the event presented, I have determined that an upgrade from the Unusual Event is not required.

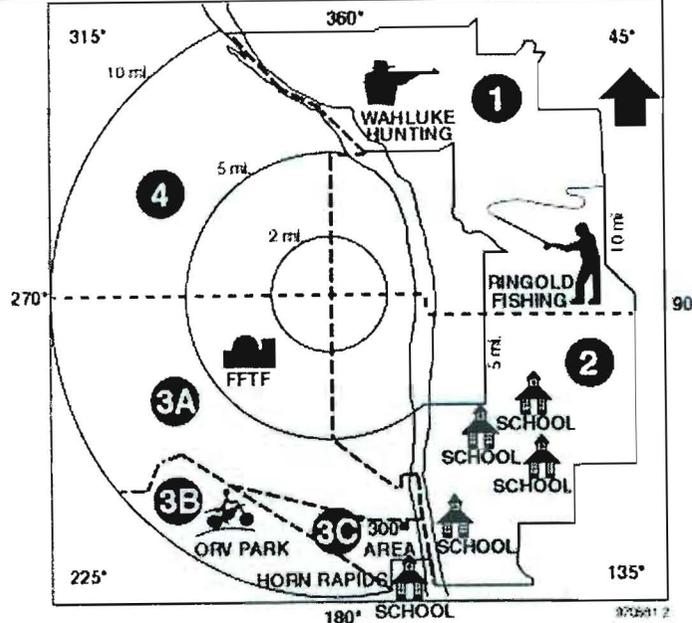
Initials

**COLUMBIA GENERATING STATION
CLASSIFICATION NOTIFICATION FORM (CNF)**

1 TYPE OF EVENT: a. Emergency *or* b. Drill **(2) NO.:** _____

3 NOTIFICATION PROVIDED BY EMERGENCY DIRECTOR: **4**
Name (Print) My Name
Phone No.: (509) My Phone #

Classification/Status	Date	Time
a. <input type="checkbox"/> Initial Classification		
b. <input checked="" type="checkbox"/> Reclassification	<u>Today</u>	<u>Now</u>
c. <input type="checkbox"/> Termination		
d. <input type="checkbox"/> PAR Changes/Additions		
e. <input type="checkbox"/> Information		



5 a. UNUSUAL EVENT
No offsite protective actions recommended

5 b. ALERT
No offsite protective actions recommended

5 c. **SITE AREA EMERGENCY**
Automatic Protective Action Recommendations
EVACUATE:

- Columbia River
- Ringold Fishing Area
- Horn Rapids Recreation Area/ORV Park
- Wahluke Hunting Area
- Schools in EPZ

ENERGY NORTHWEST ACTIONS

- Site Evacuation

5 d. **GENERAL EMERGENCY**
Automatic Protective Action Recommendations
EVACUATE:

- Columbia River
- Ringold Fishing Area
- Horn Rapids Recreation Area/ORV Park
- Wahluke Hunting Area
- Schools in EPZ

ENERGY NORTHWEST ACTIONS

- Site Evacuation

7 Meteorological Data:
Wind Speed (mph) 4
Wind Direction: from 245°
Precipitation: Yes No
Stability Classification E

Select the following additional PARs

8 Offsite Release Information:
 No Release Release Start Time _____
9 Airborne Water N/A
10 Release Terminated Stop Time _____ N/A

6 **NOTE:** The minimum PAR for General Emergency is Evacuate All Sections 0-2 Miles and 10 Miles Downwind and shelter remaining sections.

- All Sections (0-2 Miles) Evacuate
- Evacuate (2-10 Miles)
 Section 1 Section 2 Section 3 Section 4 (A,B,C)
- Shelter Remaining Sections (2-10 Miles)
 Section 1 Section 2 Section 3 Section 4 (A,B,C)
- Basis for PARs Radiological Plant
- Specific PARs _____

11 State criteria met for administering KI (Information only)
 No
 Yes 250 mrem/hr thyroid 1.4×10^{-7} $\mu\text{Ci/cc}$ 1-131

12 EAL # 9-1.5.1 or 9-1.5.2

12 DESCRIPTION OF INCIDENT OR ADDITIONAL INFORMATION: (Please provide enough detail for understanding)
Bomb in the SW pump house

13 Prognosis of Situation: a. Unknown *or* b. Stable *or* c. Escalating *or* d. Improving

14 EMERGENCY DIRECTOR Approval Signature for release of the CNF:

Signature: _____

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY																																																						
9 Hazards 9.1 Security Threats	<p>Confirmed security event which indicates a potential degradation in the level of safety of the plant</p> <p>9.1.U.1</p> <table border="1"> <tr> <td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>def</td> </tr> </table> <p>A validated notification from NRC providing information of an aircraft threat</p> <p>9.1.U.2</p> <table border="1"> <tr> <td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>def</td> </tr> </table> <p>Security events as determined from the Safeguards Contingency Plan</p> <p>9.1.U.3</p> <table border="1"> <tr> <td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>def</td> </tr> </table> <p>Credible notification of a security threat to Columbia Generating Station</p>	1	2	3	4	5	def	1	2	3	4	5	def	1	2	3	4	5	def	<p>Security event in a Plant Protected Area</p> <p>9.1.A.1</p> <table border="1"> <tr> <td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>def</td> </tr> </table> <p>Security events as determined from the Safeguards Contingency Plan</p> <p>Notification of an airborne attack threat</p> <p>9.1.A.2</p> <table border="1"> <tr> <td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>def</td> </tr> </table> <p>A validated notification from NRC of an airliner attack threat less than 30 minutes away</p> <p>Notification of hostile action within the OCA</p> <p>9.1.A.3</p> <table border="1"> <tr> <td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>def</td> </tr> </table> <p>A notification from the site security force that an armed attack, explosive attack, airliner impact or other HOSTILE ACTION is occurring or has occurred within the OCA</p>	1	2	3	4	5	def	1	2	3	4	5	def	1	2	3	4	5	def	<p>Security event in a Plant Vital Area</p> <p>9.1.S.1</p> <table border="1"> <tr> <td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>def</td> </tr> </table> <p>Security events as determined from the Safeguards Contingency Plan</p> <p>Site Attack</p> <p>9.1.S.2</p> <table border="1"> <tr> <td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>def</td> </tr> </table> <p>A notification from the site security force that an armed attack, explosive attack, airliner impact, or other HOSTILE ACTION is occurring or has occurred within the Protected Area</p>	1	2	3	4	5	def	1	2	3	4	5	def	<p>Security event resulting in loss of physical control of the facility</p> <p>9.1.G.1</p> <table border="1"> <tr> <td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>def</td> </tr> </table> <p>A hostile force has taken control of plant equipment such that plant personnel are unable to operate equipment required to maintain safety functions</p>	1	2	3	4	5	def
1	2	3	4	5	def																																																					
1	2	3	4	5	def																																																					
1	2	3	4	5	def																																																					
1	2	3	4	5	def																																																					
1	2	3	4	5	def																																																					
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1	2	3	4	5	def																																																					
1	2	3	4	5	def																																																					

9 Hazards 9.1 Security Threats

9.1.S.2 Site Area Emergency

NUMARC IC: HS4 - Site Attack

APPLICABILITY:

Operating Conditions	1	2	3	4	5	def
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EMERGENCY ACTION LEVEL:

A notification from the site security force that an armed attack, explosive attack, airliner impact, or other HOSTILE ACTION is occurring or has occurred within the Protected Area

BASES:

This class of security events represents an escalated threat to plant safety above that contained in the Alert IC in that a hostile force has progressed from the Owner Controlled Area to the Protected Area.

Although NPP security officers are well trained and prepared to protect against HOSTILE ACTION, it is appropriate for Offsite Response Organizations to be notified and encouraged to begin preparations for public protective actions (if they do not normally) to be better prepared should it be necessary to consider further actions.

This EAL is intended to address the potential for a very rapid progression of events due to a dedicated attack. It is not intended to address incidents that are accidental or acts of civil disobedience, such as hunters or physical disputes between employees within the OCA. That initiating condition is adequately addressed by other EALs. Terrorist action identified above encompasses various acts including:

- air attack (airliner impacting the protected area)
- land-based attack (HOSTILE FORCE penetrating protected area)
- waterborne attack (HOSTILE FORCE on water penetrating protected area)

Attachment 4.1

NUMBER	REVISION	PAGE
13.1.1A	20	150 of 210

- bombs breaching the protected area

This EAL is intended to address the contingency for a very rapid progression of events due to an airborne terrorist attack such as that experienced on September 11, 2001, and the possibility for additional attacking aircraft. It is not intended to address accidental aircraft impact as that initiating condition is adequately addressed by other EALs. This EAL is not premised solely on the potential for a radiological release. Rather the issue includes the need for assistance due to the possibility for significant and indeterminate damage from additional attack elements.

Although consequence analyses show NPPs to be robust, it is appropriate for Offsite Response Organizations to be notified and to activate in order to be better prepared to respond should protective actions become necessary. Federal agencies are expected to assist in the determination whether the aircraft impact was accidental or an attack. The Federal agency may be NORAD, FBI, FAA, or NRC. However, the declaration should not be unduly delayed awaiting Federal notification. Airliner is meant to be a large aircraft with the potential for causing significant damage to the plant. The NRC Headquarters Operations Officer (HOO) will communicate to the licensee if the threat involves an airliner. The status and size of the plane may be provided by NORAD through the NRC.

This EAL addresses the immediacy of a threat to impact site vital areas within a relatively short time. The fact that the site is under serious attack with minimal time available for additional assistance to arrive requires ORO readiness and preparation for the implementation of protective measures.

Licensees should consider upgrading the classification to a General Emergency based on actual plant status after impact.

REFERENCE(S):

NRC Bulletin 2005-02, Emergency Preparedness and Response Actions for Security Based Events, Attachment 2, HS1, for NUMARC/NESP-007 EAL schemes

NRC RIS 2006-12, Endorsement of NEI Guidance “Enhancements to Emergency Preparedness Programs for Hostile Action”

Attachment 4.1

NUMBER	REVISION	PAGE
13.1.1A	20	151 of 210