

Watts Bar Nuclear Plant
3-OT-JPMADA 1-7a

**Hand Calculation of Boric Acid and Primary Water
Integrator Setting for Manual Makeup to the VCT**

Watts Bar Nuclear Plant

3-OT-JPMADA 1-7a

NUCLEAR TRAINING REVISION/USAGE LOG

Rev. #	Description of Changes	Date	Pages Affected	Reviewed By
0	Initial issue, generated for NRC Initial License Exam		All	D. Hughes

Watts Bar Nuclear Plant

3-OT-JPMADA 1-7a

Task: Hand Calculation of Boric Acid and Primary Water Integrator Setting for Manual Makeup to the VCT

Alternate Path: None

Facility JPM #: 3-OT-JPMADA 1-7a Rev 0

K/A Rating(s):

2.1.20 Ability to interpret and execute procedure steps. (IMPORTANCE RO 4.6 SRO 4.6)
2.1.37 Knowledge of procedures, guidelines, or limitations associated with reactivity
| management. (IMPORTANCE RO 4.3 SRO 4.6)
2.1.43 Ability to use procedures to determine the effects on reactivity of plant changes, |
such as reactor coolant system temperature, secondary plant, fuel depletion, etc. -
(IMPORTANCE RO 4.1 SRO 4.3)

TASK STANDARDS: Correctly perform Hand Calculation of Boric Acid and Primary Water Integrator Setting for Manual Makeup to the VCT

Preferred Evaluation Location:

Preferred Evaluation Method:

Simulator X In-Plant

Perform X Simulate

References: 1-SOI-62.02 Rev 0047 TI-59 Rev 0006

Task Number: RO-062-SOI-62-017, APPLICABLE FOR: RO/SRO

10CFR55.45: 1, 5

Validation Time: 15 min. **Time Critical:** No

Candidate: _____ **NAME** _____ **SSN/EIN** _____ **Time Start:** _____
Time Finish: _____

Performance Rating: SAT UNSAT **Performance Time**

Examiner: _____ **NAME** _____ **SIGNATURE** _____ **DATE** _____

COMMENTS

Watts Bar Nuclear Plant 3-OT-JPMADA 1-7a

SIMULATOR OPERATOR INSTRUCTIONS:

If JPM conducted in Simulator, reset to any EOL 100% IC

Tools/Equipment/Procedures Needed:

Copy of latest revision of 1-SOI-62.02 and TI-59

Calculator

Access to controlled copies of plant procedures

READ TO OPERATOR

DIRECTION TO TRAINEE:

I will explain the initial conditions, and state the administrative task to be performed. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

INITIAL CONDITIONS:

- The unit is in Mode 1 at 100% power.
- Current RCS C_B is 222 ppm.
- Current inservice BAT C_B is 6350 ppm
- Current B-10 Depletion value is 12 ppm.
- Currently the VCT is at 23%
- The Desired VCT Level is 40%
- You are an extra operator.

INITIATING CUES:

- Due to a suspected problem with REACTINW, the Unit SRO has directed you to perform a hand calculation of the Boric Acid and Primary Water integrator setting for a manual makeup to the VCT, in accordance with SOI-62.02
- Report the results of the surveillance to the Unit SRO.

START TIME: _____

<p><u>STEP 1:</u></p> <p><u>STANDARD:</u></p> <p><u>COMMENTS:</u></p> <p>EXAMINER'S CUE:</p>	<p>Obtain the necessary procedure.</p> <p>Performer obtains copy of latest revision of 1-SOI-62.02. and finds section 6.5 Manual Makeup</p> <p>NOTE: Provide copy of SOI 62.02 to candidate.</p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 2:</u></p> <p><u>STANDARD:</u></p> <p><u>COMMENTS:</u></p>	<p>6.5 Manual Makeup</p> <p>[1] PERFORM Appendix C, Calculation Of Boric Acid And Primary</p> <p>Performer turns to SOI 62.02 Appendix C</p>	<p>___ SAT</p> <p>___ UNSAT</p>

<p><u>STEP 3:</u></p> <p><u>STANDARD:</u></p> <p><u>COMMENTS:</u></p>	<p>Appendix C NOTE 1</p> <p>Use page 1 of this appendix when using "VCT MAKEUP CALCULATION" program in REACTINW, otherwise use pages 2 and 3 when performing Hand Calculations.</p> <p>Performer refers to initiating cues and realizes that "REACTINW" is suspect and goes to page 2 of Appendix C</p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 4:</u></p> <p><u>STANDARD</u></p> <p><u>COMMENTS:</u></p>	<p>2.0 HAND CALCULATION</p> <p>[1] OBTAIN the following data for use in the HAND CALCULATION: [1.1] Current RCS Boric Acid Concentration. <u> 222 </u> PPM [1.2] Current BAT Boric Acid Concentration. <u> 6350 </u> PPM [1.3] B-10 Depletion Value from Reactivity Management Briefing Sheet <u> 12 </u> PPM [1.4] Current VCT Level <u> 23 </u> % [1.5] Desired VCT Level <u> 40 </u> %</p> <p>Correctly obtains information from initiating cues.</p>	<p>___ SAT</p> <p>___ UNSAT</p>

<u>STEP 5:</u>	<p>2] CALCULATE BAT Boric Acid Concentration Ratio (BACR):</p> <p>6820 ppm ÷ Step 1.0[1.2] ppm = _____ (ENTER 1.0 for BACR following a reactor shutdown or for a conservative calculation). _____</p>	<p><u>Critical Step</u></p> <p>___ SAT</p>
<u>STANDARD:</u>	<p>Performer performs the following calculation: 6820 ppm ÷ 6350 ppm = <u>1.074</u></p>	<p>___ UNSAT</p>
<u>COMMENTS:</u>		
<u>STEP 6:</u>	<p>[3] CALCULATE B-10 corrected boron concentration:</p> $\frac{\text{STEP 1.0[1.1]} - \text{STEP 1.0[1.3]}}{\text{B-10 corrected boron}} = \text{PPM}$ <p>:</p>	<p><u>Critical Step</u></p> <p>___ SAT</p>
<u>STANDARD:</u>	<p>Performer performs the following calculation: 222ppm - 12ppm = <u>210ppm.</u></p>	<p>___ UNSAT</p>
<u>COMMENTS:</u>		

<u>STEP 7:</u>	<p>[4] CALCULATE total VCT addition volume needed for desired level.</p> $\left[\frac{\text{Step 1.0}[1.5]}{\text{Total Volume}} \% - \frac{\text{Step 1.0}[1.4]}{\text{Total Volume}} \% \right] \times 19.3 \text{ Gals/\%} = \underline{\hspace{2cm}} \text{ GALS}$ <p>(Round to nearest whole number)</p>	<u>Critical Step</u> ___ SAT
<u>STANDARD:</u>	<p>Performer performs the following calculation:</p> $\left[\underline{40} \% - \underline{23} \% \right] \times 19.3 \text{ Gals/\%} = \underline{328.1} \text{ GALS}$	___ UNSAT
<u>COMMENTS:</u>		
<u>STEP 8:</u>	<p>2.0 HAND CALCULATION (continued)</p> <p>NOTE Corrected Boric Acid Flow Rate in Step 2.0[5] should be obtained from TI-59, Appendix C for the B-10 corrected boron value calculated in Step 2.0[3].</p> $\begin{array}{ccccc} [5] & & & & \\ \underline{\hspace{2cm}} \text{ GPM} & \times & \underline{\hspace{2cm}} & = & \underline{\hspace{2cm}} \text{ GPM} \\ \text{Corrected Boric Acid Flow Rate} & & \text{BACR from Step 2.0[2]} & & [\text{x}] \text{ BA to Blender} \end{array}$	<u>Critical Step</u> ___ SAT ___ UNSAT
<u>STANDARD:</u>	<p>Performer performs the following calculation:</p> $\begin{array}{ccccc} \underline{2.2} \text{ GPM} & \times & \underline{1.074} & = & \underline{2.36} \text{ GPM} \\ \text{Corrected Boric Acid Flow Rate} & & \text{BACR from Step 2.0[2]} & & [\text{x}] \text{ BA to Blender} \end{array}$	
<u>COMMENTS:</u>		

<p><u>STEP 9:</u></p>	<p>[6]</p> $\frac{\text{Step 2.0[5] [X]} \text{ GPM}}{\text{PW to Blender Flow}} + \frac{70 \text{ GPM}}{\text{Total Flow Rate}} = \frac{\text{Total Flow Rate}}{\text{Total Flow Rate}} \text{ GPM}$	<p><u>Critical Step</u></p> <p>___ SAT</p>
<p><u>STANDARD:</u></p>	<p>Performer performs the following calculation:</p> $\frac{2.36 \text{ GPM}}{\text{Step 2.0[5] [X]}} + \frac{70 \text{ GPM}}{\text{PW to Blender Flow}} = \frac{72.36 \text{ GPM}}{\text{Total Flow Rate}}$	<p>___ UNSAT</p>
<p><u>COMMENTS:</u></p>		
<p><u>STEP 10:</u></p>	<p>[7]</p> $\frac{\text{Step 2.0[5] [X]} \text{ GPM}}{\text{Step 2.0[6] Total Flow Rate}} \div \frac{\text{Step 2.0[6] Total Flow Rate}}{\text{[Y] BA Fraction}} = \frac{\text{Total Flow Rate}}{\text{Total Flow Rate}} \text{ GPM}$	<p><u>Critical Step</u></p> <p>___ SAT</p>
<p><u>STANDARD:</u></p>	<p>Performer performs the following calculation:</p> $\frac{2.36 \text{ GPM}}{\text{Step 2.0[5] [X]}} \div \frac{72.36 \text{ GPM}}{\text{Step 2.0[6] Total Flow Rate}} = \frac{0.0326 \text{ GPM}}{\text{[Y] BA Fraction}}$	<p>___ UNSAT</p>
<p><u>COMMENTS:</u></p>		

<p><u>STEP 11:</u></p> <p><u>STANDARD:</u></p> <p><u>COMMENTS:</u></p>	<div style="text-align: right;">[8]</div> $\frac{\text{Step 2.0[7] [Y]}}{\text{Step 2.0[4] Total Volume}} \times \text{GALS} = \frac{\text{Boric Acid Batch Counter Setting}}{\text{GALS}}$ <p>Performer performs the following calculation:</p> $\frac{0.0326}{\text{Step 2.0[7] [Y]}} \times \frac{328.1}{\text{Step 2.0[4] Total Volume}} \text{ GALS} = \frac{10.7}{\text{Boric Acid Batch Counter Setting}} \text{ GALS}$ <p><i>Performer can round BA counter up to 11 GALS</i></p>	<p align="center"><u>Critical Step</u></p> <p align="center">___ SAT</p> <p align="center">___ UNSAT</p>
<p><u>STEP 12:</u></p> <p><u>STANDARD:</u></p> <p><u>COMMENTS:</u></p>	<div style="text-align: right;">[9]</div> $\frac{70}{\text{Primary H}_2\text{O}} \text{ GPM} \div \frac{\text{Step 2.0[6] Total Flow Rate}}{\text{GPM}} = \frac{\text{[Z] PW Fraction}}{\text{GPM}}$ <p>Performer performs the following calculation:</p> $\frac{70}{\text{Primary H}_2\text{O}} \text{ GPM} \div \frac{72.36}{\text{Step 2.0[6] Total Flow Rate}} \text{ GPM} = \frac{0.967}{\text{[Z] PW Fraction}}$	<p align="center"><u>Critical Step</u></p> <p align="center">___ SAT</p> <p align="center">___ UNSAT</p>

<p><u>STEP 13:</u></p> <p><u>STANDARD:</u></p> <p><u>COMMENTS:</u></p>	<p>[10]</p> <p>_____ X _____ GALS = _____ GALS</p> <p>Step 2.0[9] [Z] Step 2.0[4] Primary Water Total Volume Batch Counter Setting</p> <p>Performer performs the following calculation:</p> <p>_____ X _____ GALS = _____ GALS</p> <p>Step 2.0[9] [Z] Step 2.0[4] Primary Water Batch Total Volume Counter Setting</p> <p><i>Performer can round PW counter down to 317 GALS</i></p>	<p><u>Critical Step</u></p> <p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 14:</u></p> <p><u>STANDARD:</u></p> <p><u>COMMENTS:</u></p>	<p>[11] ENSURE independently verified by SRO.</p> <p>Performer reports that the task is completed and gives calculation to the SRO</p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p>Examiner cue:</p>	<p>Acknowledge report, notify performer that the task is complete. End task</p>	

TIME STOP: _____

CANDIDATE CUE SHEET
(TO BE RETURNED TO EXAMINER UPON COMPLETION OF TASK)

DIRECTION TO TRAINEE:

I will explain the initial conditions, and state the administrative task to be performed. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

INITIAL CONDITIONS:

- The unit is in Mode 1 at 100% power.
- Current RCS C_B is 222 ppm.
- Current inservice BAT C_B is 6350 ppm
- Current B-10 Depletion value is 12 ppm.
- Currently the VCT is at 23%
- The Desired VCT Level is 40%
- You are an extra operator.

INITIATING CUES:

- Due to a suspected problem with REACTINW, the Unit SRO has directed you to perform a hand calculation of the Boric Acid and Primary Water integrator setting for a manual makeup to the VCT, in accordance with SOI-62.02
- Report the results of the surveillance to the Unit SRO.

Watts Bar Nuclear Plant
3-OT-JPMADA 1-7b

**SRO Verification of Hand Calculation of Boric Acid and
Primary Water Integrator Setting for Manual Makeup to the
VCT**

Watts Bar Nuclear Plant

3-OT-JPMADA 1-7b

NUCLEAR TRAINING REVISION/USAGE LOG				
Rev. #	Description of Changes	Date	Pages Affected	Reviewed By
0	Initial issue, generated for NRC Initial License Exam		All	D. Hughes

Task: SRO Verification of Hand Calculation of Boric Acid and Primary Water Integrator Setting for Manual Makeup to the VCT

Facility JPM #: 3-OT-JPMADA 1-7b Rev 0

2.1.20 Ability to interpret and execute procedure steps. (IMPORTANCE RO 4.6 SRO 4.6)

2.1.37 Knowledge of procedures, guidelines, or limitations associated with reactivity management. (IMPORTANCE RO 4.3 SRO 4.6)

2.1.43 Ability to use procedures to determine the effects on reactivity of plant changes, such as reactor coolant system temperature, secondary plant, fuel depletion, etc. (IMPORTANCE RO 4.1 SRO 4.3)

Preferred Evaluation Location:

Simulator _____ In-Plant _____

Perform X Simulate

References: 1-SOI-62.02 Rev 0047 TI-59 Rev 0006

Task Number: SRO-113-SSP-12-013, **APPLICABLE FOR:** SRO

10CFR55.45: 1, 5

Validation Time: 15 min. **Time Critical: No**

Candidate: _____
NAME

SSN/EIN

Time Start: _____

Time Finish: _____

Performance Rating: SAT ____ UNSAT ____

Performance Time _____

Examiner: _____
NAME

SIGNATURE

DATE _____

COMMENTS

Watts Bar Nuclear Plant 3-OT-JPMADA 1-7b

SIMULATOR OPERATOR INSTRUCTIONS:

If JPM conducted in Simulator, reset to any EOL 100% IC

Tools/Equipment/Procedures Needed:

Copy of latest revision of 1-SOI-62.02 and TI-59
Calculator
Access to controlled copies of plant procedures

READ TO OPERATOR

DIRECTION TO TRAINEE:

I will explain the initial conditions, and state the administrative task to be performed. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

INITIAL CONDITIONS:

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- Current inservice BAT C_B is 6350 ppm
- Current B-10 Depletion value is 12 ppm.
- Currently the VCT is at 23%
- The Desired VCT Level is 40%

INITIATING CUES:

- Due to a suspected problem with REACTINW, an RO was directed to perform a hand calculation of the Boric Acid and Primary Water integrator setting for a manual makeup to the VCT, in accordance with SOI-62.02.
- The RO has reported the results of the surveillance to you, the Unit SRO.
- You are task with conducting a verification of the calculation.

START TIME: _____

<u>STEP 1:</u>	Obtain the necessary procedure.	
<u>STANDARD:</u>	Performer obtains copy of latest revision of 1-SOI-62.02.	___ SAT
<u>COMMENTS:</u>		___ UNSAT
EXAMINER'S CUE:	NOTE: <i>Provide copy of completed SOI 62.02 Appendix C to candidate.</i>	

<u>STEP 2:</u>	<p>2.0 HAND CALCULATION</p> <p>[1] OBTAIN the following data for use in the HAND CALCULATION:</p> <p>[1.1] Current RCS Boric Acid Concentration. <u>222</u> PPM</p> <p>[1.2] Current BAT Boric Acid Concentration. <u>6350</u> PPM</p> <p>[1.3] B-10 Depletion Value from Reactivity Management Briefing Sheet <u>12</u> PPM</p> <p>[1.4] Current VCT Level <u>23</u> %</p> <p>[1.5] Desired VCT Level <u>40</u> %</p>	<p>___ SAT</p> <p>___ UNSAT</p>
<u>STANDARD</u>	SRO Verifies the above information is correct:	
<u>COMMENTS:</u>		

<p><u>STEP 3:</u></p> <p><u>STANDARD:</u></p> <p><u>COMMENTS:</u></p>	<p>2] CALCULATE BAT Boric Acid Concentration Ratio (BACR):</p> <p>6820 ppm ÷ Step 1.0[1.2] ppm = _____ (ENTER 1.0 for BACR following a reactor shutdown or for a conservative calculation). _____</p> <p>Performer performed the following calculation: 6820 ppm ÷ 6350 ppm = <u>1.074</u></p> <p>SRO Verifies the above information is correct:</p>	<p><u>Critical Step</u></p> <p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 4:</u></p> <p><u>STANDARD:</u></p> <p><u>COMMENTS:</u></p>	<p>[3] CALCULATE B-10 corrected boron concentration:</p> $\frac{\text{STEP 1.0[1.1]} - \text{STEP 1.0[1.3]}}{\text{B-10 corrected boron}} = \underline{\hspace{2cm}} \text{ PPM}$ <p>:</p> <p>Performer performed the following calculation: 222ppm - 12ppm = <u>210ppm.</u></p> <p>SRO Verifies the above information is correct:</p>	<p><u>Critical Step</u></p> <p>___ SAT</p> <p>___ UNSAT</p>

<p><u>STEP 5:</u></p>	<p>[4] CALCULATE total VCT addition volume needed for desired level.</p> <p>[_____ % - _____ %] X 19.3 Gals/% = _____ GALS Step 1.0[1.5] Step 1.0[1.4] Total Volume (Round to nearest whole number)</p>	<p><u>Critical Step</u></p> <p>____ SAT</p>
<p><u>STANDARD:</u></p>	<p>Performer performed the following calculation:</p> <p>[<u> 40 </u> % - <u> 23 </u> %] X 19.3 Gals/% = <u> 328.1 </u> GALS</p> <p>SRO Verifies the above information is correct:</p>	<p>____ UNSAT</p>
<p><u>COMMENTS:</u></p>		

<div>STEP 6:</div> <div>STANDARD:</div> <div>COMMENTS:</div>	<div>2.0 HAND CALCULATION (continued)</div> <div>NOTE</div> <div>Corrected Boric Acid Flow Rate in Step 2.0[5] should be obtained from TI-59, Appendix C for the B-10 corrected boron value calculated in Step 2.0[3].</div> <div>[5]</div> <div> <div>_____ GPM</div> <div>Corrected Boric Acid Flow Rate</div> </div> <div>X</div> <div> <div>_____</div> <div>BACR from Step 2.0[2]</div> </div> <div>=</div> <div> <div>_____ GPM</div> <div>[X] BA to Blender</div> </div> <div>Performer performed the following calculation:</div> <div> <div>_____ 2.2 GPM</div> <div>Corrected Boric Acid Flow Rate</div> </div> <div>X</div> <div> <div>_____ 1.074</div> <div>BACR from Step 2.0[2]</div> </div> <div>=</div> <div> <div>_____ 2.36 GPM</div> <div>[X] BA to Blender</div> </div> <div>SRO Verifies the above information is correct:</div>	<div>Critical Step</div> <div>___ SAT</div> <div>___ UNSAT</div>
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<p><u>STEP 7:</u></p> <p><u>STANDARD:</u></p> <p><u>COMMENTS:</u></p>	<div>[6]</div> $\frac{\text{Step 2.0[5] [X]} \text{ GPM}}{} + \frac{70 \text{ GPM}}{\text{PW to Blender Flow}} = \frac{\text{Total Flow Rate} \text{ GPM}}{} $ <p>Performer performed the following calculation:</p> $\frac{2.36 \text{ GPM}}{\text{Step 2.0[5] [X]}} + \frac{70 \text{ GPM}}{\text{PW to Blender Flow}} = \frac{72.36 \text{ GPM}}{\text{Total Flow Rate}}$ <p>SRO Verifies the above information is correct:</p>	<p><u>Critical Step</u></p> <p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 8:</u></p> <p><u>STANDARD:</u></p> <p><u>COMMENTS:</u></p>	<div>[7]</div> $\frac{\text{Step 2.0[5] [X]} \text{ GPM}}{} \div \frac{\text{Step 2.0[6] Total Flow Rate} \text{ GPM}}{} = \frac{\text{[Y] BA Fraction} \text{ GPM}}{} $ <p>Performer performed the following calculation:</p> $\frac{2.36 \text{ GPM}}{\text{Step 2.0[5] [X]}} \div \frac{72.36 \text{ GPM}}{\text{Step 2.0[6] Total Flow Rate}} = \frac{0.0326 \text{ GPM}}{\text{[Y] BA Fraction}}$ <p>SRO Verifies the above information is correct:</p>	<p><u>Critical Step</u></p> <p>___ SAT</p> <p>___ UNSAT</p>

<u>STEP 9:</u>	[8]	<u>Critical Step</u>
	$\frac{\text{Step 2.0[7] [Y]}}{\text{Step 2.0[4] Total Volume}} \times \text{GALS} = \frac{\text{Boric Acid Batch Counter Setting}}{\text{GALS}}$	<div style="border-bottom: 1px solid black; height: 20px; width: 100%;"></div> <div style="border-bottom: 1px solid black; height: 20px; width: 100%;"></div>
<u>STANDARD:</u>	<p>Performer performe the following calculation:</p> $\frac{0.0326}{\text{Step 2.0[7] [Y]}} \times \frac{210}{\text{Step 2.0[4] Total Volume}} \text{ GALS} = \frac{6.84}{\text{Boric Acid Batch Counter Setting}} \text{ GALS}$ <p>SRO determines that the RO incorrectly obtained data from Step 2.0[3] (used 210). Should have used Step 2.0[4] which was 328.1.</p> <p>SRO calculates the correct value as follows:</p> $\frac{0.0326}{\text{Step 2.0[7] [Y]}} \times \frac{328.1}{\text{Step 2.0[4] Total Volume}} \text{ GALS} = \frac{10.7}{\text{Boric Acid Batch Counter Setting}} \text{ GALS}$ <p><i>SRO may round the BA up to 11 gals</i></p>	<div style="border-bottom: 1px solid black; height: 20px; width: 100%;"></div> <div style="border-bottom: 1px solid black; height: 20px; width: 100%;"></div>
<u>COMMENTS:</u>		

<p><u>STEP 10:</u></p> <p><u>STANDARD:</u></p> <p><u>COMMENTS:</u></p>	<p>[9]</p> $\frac{70 \text{ GPM}}{\text{Primary H}_2\text{O}} \div \frac{\text{Step 2.0[6] Total Flow Rate} \text{ GPM}}{=} = \frac{\text{[Z] PW Fraction}}{}$ <p>Performer performs the following calculation:</p> $\frac{70 \text{ GPM}}{\text{Primary H}_2\text{O}} \div \frac{72.36 \text{ GPM}}{\text{Step 2.0[6] Total Flow Rate}} = \frac{0.967}{\text{[Z] PW Fraction}}$ <p>SRO Verifies the above information is correct:</p>	<p><u>Critical Step</u></p> <p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 11:</u></p> <p><u>STANDARD:</u></p> <p><u>COMMENTS:</u></p>	<p>[10]</p> $\frac{\text{Step 2.0[9] [Z]} \times \text{Step 2.0[4] Total Volume} \text{ GALS}}{=} = \frac{\text{Primary Water Batch Counter Setting} \text{ GALS}}{}$ <p>Performer performs the following calculation:</p> $\frac{0.967 \text{ Step 2.0[9] [Z]} \times 328.1 \text{ Step 2.0[4] Total Volume} \text{ GALS}}{=} = \frac{317.27 \text{ Primary Water Batch Counter Setting} \text{ GALS}}{}$ <p>SRO Verifies the above information is correct:</p> <p>SRO may round PW down to 317 gals</p>	<p><u>Critical Step</u></p> <p>___ SAT</p> <p>___ UNSAT</p>

<p><u>STEP 12:</u></p> <p><u>STANDARD:</u></p> <p><u>COMMENTS:</u></p>	<p>[11] ENSURE independently verified by SRO.</p> <p>Performer gives calculation back to the RO</p>	<p>___SAT</p> <p>___UNSAT</p>
<p>Examiner cue:</p>	<p>Acknowledge report, notify performer that the task is complete. End task</p>	<p>-</p>

TIME STOP: _____

CANDIDATE CUE SHEET
(TO BE RETURNED TO EXAMINER UPON COMPLETION OF TASK)

DIRECTION TO TRAINEE:

I will explain the initial conditions, and state the administrative task to be performed. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

INITIAL CONDITIONS:

- The unit is in Mode 1 at 100% power.
- Current RCS C_B is 222 ppm.
- Current inservice BAT C_B is 6350 ppm
- Current B-10 Depletion value is 12 ppm.
- Currently the VCT is at 23%
- The Desired VCT Level is 40%

INITIATING CUES:

- Due to a suspected problem with REACTINW, an RO was directed to perform a hand calculation of the Boric Acid and Primary Water integrator setting for a manual makeup to the VCT, in accordance with SOI-62.02.
- The RO has reported the results of the surveillance to you, the Unit SRO.
- You are task with conducting a verification of the calculation.

Watts Bar Nuclear Plant 3-OT-JPMADA 1-8

Evaluate Overtime Guidelines

Watts Bar Nuclear Plant

3-OT-JPMADA 1-8

NUCLEAR TRAINING REVISION/USAGE LOG				
Rev. #	Description of Changes	Date	Pages Affected	Reviewed By
0	Initial issue, generated for NRC Initial License Exam	03/21/08	All	D. Hughes

Watts Bar Nuclear Plant

3-OT-JPMADA 1-8

Task: Evaluate Overtime Guidelines

Alternate Path: None

Facility JPM #: 3-OT-JPMADA 1-8 Rev 0

K/A Rating(s):

2.1.5 Ability to use procedures related to shift staffing, such as minimum crew | complement, overtime limitations, etc. (IMPORTANCE RO 2.9/ SRO 3.9)

TASK STANDARDS: Determine maximum hours that can be worked per request. Determine that a 12 hour shift cannot be worked on the day requested.

Preferred Evaluation Location:

Simulator X In-Plant

Preferred Evaluation Method:

Perform X Simulate

References: SPP 1.5 Rev 0005

Task Number: RO-119-OPDP-10.1-001, APPLICABLE FOR: RO/SRO

10CFR55.45: 11

Validation Time: 15 min. **Time Critical:** No

Candidate: _____ **Time Start:** _____
NAME SSN/EIN **Time Finish:** _____

Performance Rating: SAT UNSAT **Performance Time**

Examiner: _____ / _____
NAME SIGNATURE DATE

COMMENTS

Watts Bar Nuclear Plant

3-OT-JPMADA 1-8

SPECIAL INSTRUCTIONS TO EVALUATOR:

- a. Hand time (cue) sheet to candidate

READ TO OPERATOR

Directions to Trainee:

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM. I will provide initiating cues and reports on other actions when directed by you. When you complete the task successfully, the objective for this job performance measure will be satisfied. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

INITIAL CONDITIONS:

1. The ATC for the 0700-1900 shift has called in sick.
2. You are the only operator currently available , and You have been requested to work 12 hours tomorrow, 5/15/2008, from 0700-1900.

INITIATING CUES:

Determine the number of hours you could work, if any, starting at 0700 on 5/15/2008 without violating overtime guidelines. If required

Job Performance Checklist:

STEP/STANDARD		SAT/UNSAT
<p><u>Evaluator Note:</u></p> <p>STEP 1.</p> <p>STANDARD:</p> <p><u>Evaluator Note:</u></p> <p>Comments:</p>	<p><i>If the performer locates a copy of SPP=1.5, Overtime Restrictions (Regulatory), give the performer a copy.</i></p> <p>Determine the number of hours that can be worked starting at 0700 on 5/15/08 without violating any overtime guidelines.</p> <p>May only work 6 hours of the 0700 – 1900 shift on 5/15/208. The Performer identifies that the requirements per SPP-1.5 of working more than 72 hours in 7 days will be violated if authorization per SPP- 1.5 is not approved prior to 1300 on 5/15/2008.</p> <p><i>This step has 2 critical components. Both of which must be satisfied to pass JPM:</i></p> <ul style="list-style-type: none"> <i>May only work 6 hours of the 0700 – 1900 shift without violating overtime restrictions.</i> <i>The Performer identifies that the requirements per SPP-1.5 of working more than 72 hours in 7 days will be violated if authorization per SPP- 1.5 is not approved prior to 1300 on 5/15/2008.</i> <p><i>If the performer only identifies the 6 hour restriction, then acknowledge report, and inform them to complete the appropriate paperwork as if they were to report to work at 0700. Inform them that they are the only person available.</i></p>	<p>Critical Step</p> <p>___ SAT</p> <p>___ UNSAT</p>

Job Performance Checklist:

STEP/STANDARD		SAT/UNSAT
<p><u>STEP 2.</u></p> <p><u>STANDARD:</u></p> <p><u>Evaluator Note:</u></p> <p><u>Comments:</u></p>	<p>Locates SPP-1.5, Overtime Restrictions, and fills out the following on Page 8 of the report:</p> <ul style="list-style-type: none"> • Name • SSN • Organization • Date • # Hours • Time limit will be exceeded <p># Hours and Time that the limit will be exceeded (6 hours – 1300 the limit will be exceeded)</p> <p><i>If the performer ask for a copy of SPP=1.5, Overtime Restrictions (Regulatory), give the performer a copy.</i></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 3.</u></p> <p><u>STANDARD:</u></p> <p><u>Comments:</u></p>	<p>Specifies Reasons for cause of overtime.</p> <p>Writes a reasonable reason on the form.</p>	<p>___ SAT</p> <p>___ UNSAT</p>

Job Performance Checklist:

STEP/STANDARD		SAT/UNSAT
<u>STEP 4.</u>	Specifies requirements for exception and work to be performed.	Critical Step
<u>STANDARD:</u>	Determines requirements per SPP-1.5 Page 8 item 2 and checks the 72 hours in 7 days block on Appendix A.	___ SAT
<u>Evaluator Note:</u>	<p><i>This step is the second of the 2 critical components for this JPM (which may have been performed in step one of this JPM) :</i></p> <ul style="list-style-type: none"> <i>The Performer identifies that the requirements per SPP-1.5 of working more than 72 hours in 7 days will be violated if authorization per SPP- 1.5 is not approved prior to 1300 on 5/15/2008.</i> 	___ UNSAT
<u>Evaluator Que:</u>	Shift Clerk will complete the remainder of SPP-1.5	
<u>Comments:</u>		

End of JPM

CANDIDATE COPY
TO BE RETURNED TO EXAMINER UPON COMPLETION OF ANSWER

Initial Conditions:

You are a Reactor Operator that has worked the following schedule:

Date	Hours	Status	Notes
5/7/08	0700-1715	Normal Day Off	Call out to cover 10 hours of a 12 hour shift (15 minute turnover)
5/8/08	1500-1915	Normal Day Off	Call out to cover 4 hour shift (15 minute turnover)
5/9/08	0700-1700	Normal Day Off	Attended Simulator and Classroom JIT Training
5/10/08	0700-1915	Normal Work Day	15 minute turnover
5/11/08	0700-1915	Normal Work Day	15 minute turnover
5/12/08	0700-1915	Normal Work Day	15 minute turnover
5/13/08	0700-1915	Normal Work Day	15 minute turnover
5/14/08	1100-1900	Normal Day Off	Attended Simulator and Classroom JIT Training

The OAC for the 0700-1900 shift has called in sick.

You are the only operator currently available , and you have been requested to work 12 hours tomorrow, 5/15/2008 from 0700-1900.

INITIATING CUES:

Determine the number of hours you could work, if any, starting at 0700 on 5/15/2008 without violating overtime guidelines.

Watts Bar Nuclear Plant 3-OT-JPMADA 2-3

Hand Calculation of RCS Inventory Balance

Watts Bar Nuclear Plant

3-OT-JPMADA 2-3

NUCLEAR TRAINING REVISION/USAGE LOG				
Rev. #	Description of Changes	Date	Pages Affected	Reviewed By
0	Initial issue, generated for NRC Initial License Exam		All	D. Hughes

Watts Bar Nuclear Plant

3-OT-JPMADA 2-3

Task: Hand Calculation of RCS Inventory Balance.

Alternate Path: None

Facility JPM #: 3-OT-JPMADA 2-3 Rev 0

K/A Rating(s):

2.2.12 Knowledge of surveillance procedures. | (IMPORTANCE RO 3.7 SRO 4.1)

TASK STANDARDS: Correctly perform Hand Calculation of RCS Inventory Balance

Preferred Evaluation Location:

Preferred Evaluation Method:

Simulator X In-Plant

Perform X Simulate

References: 1-SI-68-32 Rev 0012 TI-4 Part II Rev 0012

Task Number: RO-068-SI-68-32-001, APPLICABLE FOR: RO/SRO

10CFR55.45: 11

Validation Time: 35 min. **Time Critical:** No

Candidate: _____ **NAME** _____ **SSN/EIN** _____ **Time Start:** _____
Time Finish: _____

Performance Rating: SAT UNSAT **Performance Time**

Examiner: _____ **NAME** _____ **SIGNATURE** _____ **DATE** _____

COMMENTS

Watts Bar Nuclear Plant

3-OT-JPMADA 2-3

SIMULATOR OPERATOR INSTRUCTIONS:

none

Tools/Equipment/Procedures Needed:

Marked up copy of latest revision of 1-SI-68-32 (see next page for data to put in 1-SI-68-32)
Copy of TI-4 Part II.
Steam Tables
Calculator
Access to controlled copies of plant procedures

READ TO OPERATOR

DIRECTION TO TRAINEE:

I will explain the initial conditions, and state the administrative task to be performed. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

INITIAL CONDITIONS:

- The unit is in Mode 1 at 100% power.
- The Plant Computer program RCSWIB is unreliable.
- 1-SI-68-32 Appendix A has been completed through step 4 (2nd Data Set has been taken)
- You are an extra operator.

INITIATING CUES:

- Due to a suspected problem with RCSWIB, the Unit SRO has directed you to perform a manual calculation of RCS inventory balance.
- Report the results of the surveillance to the Unit SRO.

Watts Bar Nuclear Plant

3-OT-JPMADA 2-3

Mark-Up instructions for 1-SI-68-32

- Starting in section 4.1 initial/N/A steps as required. Fill in the following data at step 6:

[6] RECORD the most recent Steam Generator Leakage obtained from Chemistry in the appropriate column below , and CALCULATE Total SG Leakage (in gpm) as follows: ⇒ 0 gpd

- Continue to initial steps and/or fill in Handswitch/valve positions for all steps in sections 4.2, 4.3, and 6.0 (up to step 6.18). Ensure steps 6.5 thru 6.18 are marked N/A, since Appendix "A" will be performed.
- Appendix "A" initial steps 1 thru 4.
- Appendix "B" fill in the following data,(N/A all remaining data points):

Parameter	Panel	Initial Data Set	2nd Data Set
Time	N/A	0800	0912
VCT LEVEL	L0112A	31.5%	30.2%
PRESSURIZER PRESSURE	PO480A	2235.3 psig	2235.3 psig
PRESSURIZER LEVEL	L0482A	60.24%	59.55%
RCS TEMPERATURE	T0460A	586.3 °F	586.3 °F
REACTOR POWER	1-NI-41	100%	100%
PRT LEVEL	LO485A	72.6%	72.6%
RCDT LEVEL	1LI-77-1 0-PNL-276-L2	23%	23%
DATA SET RECORDED BY	N/A	<i>Initials</i>	<i>Initials</i>

START TIME: _____

EXAMINER'S CUE:	Provide a marked up copy of 1-SI-68-32 to candidate.	
<u>STEP 1:</u> <u>STANDARD:</u> <u>COMMENTS:</u>	CALCULATE RCS leakage per Appendix C. ⁴ Performer turns to 1-SI-68-32 Appendix C	____ SAT ____ UNSAT

		<u>Critical Step</u>									
<p><u>STEP 3:</u></p> <p><u>STANDARD:</u></p> <p><u>COMMENTS:</u></p>	<p>[1] CALCULATE elapsed time (ΔT) as follows: $\Delta T = \text{FINAL TIME} - \text{INITIAL TIME}$</p> <p>$\Delta T =$ ____ - ____</p> <p>$\Delta T = \text{min }$ ____</p> <p>Performer determines that ΔT is 72 minutes</p>	<p>____ SAT</p> <p>____ UNSAT</p>									
<p><u>STEP 4:</u></p> <p><u>STANDARD</u></p> <p><u>COMMENTS:</u></p>	<p>[2] CONVERT INITIAL and FINAL PZR PRESSURE units of measure to psia as follows:</p> <table border="1" style="margin: 10px auto; width: 80%; border-collapse: collapse;"> <thead> <tr> <th style="padding: 5px;">PARAMETER</th> <th style="padding: 5px;">INITIAL</th> <th style="padding: 5px;">FINAL</th> </tr> </thead> <tbody> <tr> <td style="padding: 5px; vertical-align: top;">PZR PRESS</td> <td style="padding: 5px; vertical-align: top;">= ____ psig + 14.7</td> <td style="padding: 5px; vertical-align: top;">= ____ psig + 14.7</td> </tr> <tr> <td></td> <td style="padding: 5px; vertical-align: top;">= ____ psia</td> <td style="padding: 5px; vertical-align: top;">= ____ psia</td> </tr> </tbody> </table> <p>Performer correctly calculates Initial PZR Pressure and final PZR Pressure to be 2250 psia</p>	PARAMETER	INITIAL	FINAL	PZR PRESS	= ____ psig + 14.7	= ____ psig + 14.7		= ____ psia	= ____ psia	<p>____ SAT</p> <p>____ UNSAT</p>
PARAMETER	INITIAL	FINAL									
PZR PRESS	= ____ psig + 14.7	= ____ psig + 14.7									
	= ____ psia	= ____ psia									

<u>STEP 5:</u>	<p>3] CALCULATE VCT Leakage as follows:</p> $\text{VCT Leakage} = \frac{(\text{INITIAL VCT LEVEL} - \text{FINAL VCT LEVEL}) \times 19.27 \text{ gal/\%}}{\Delta T (\text{Step [1]})}$ $\text{VCT Leakage} = \frac{(31.5\% - 30.2\%) \times 19.27 \text{ gal/\%}}{72 \text{ min}}$	<u>Critical Step</u>
<u>STANDARD:</u>	<p>Performer performs the following calculation:</p> <p>VCT Leakage = 0.3479 gpm</p>	<p>___SAT</p> <p>___UNSAT</p>
<u>COMMENTS:</u>		

STEP 6:

- [4] **CALCULATE** Pressurizer (PZR) Leakage as follows:
 [a] **RECORD** INITIAL and FINAL PZR PRESSURE in table below using values calculated in Step [2].
 [b] **RECORD** INITIAL and FINAL PZR LEVEL in table below using values recorded in Appendix B.
 [c] **DETERMINE** and **RECORD** INITIAL and FINAL PZR V_f (volume of water) and V_g (volume of steam) at INITIAL and FINAL PZR PRESS (Step [2]) using ASME Steam Tables (Table 2, Properties of Saturated Steam and Saturated Water).

STEP	PARAM	INITIAL	FINAL
[a]	PZR PRESS	___ psia	___ psia
[b]	PZR LEVEL	___ %	___ %
[c]	PZR V_f	___ ft^3/lbm	___ ft^3/lbm
	PZR V_g	___ ft^3/lbm	___ ft^3/lbm

Critical Step

___ SAT

___ UNSAT

STANDARD:

Performer determines that:

PZR V_f is between 0.026 ft^3/lbm and 0.027 ft^3/lbm
 (calculated value 0.02698 ft^3/lbm)

PZR V_g is between 0.156 ft^3/lbm and 0.158 ft^3/lbm
 (calculated value 0.157025 ft^3/lbm)

COMMENTS:

		<u>Critical Step</u>
<u>STEP 7:</u>	<p>[4] CALCULATE Pressurizer (PZR) Leakage as follows:4 (Continued)</p> <p>[d] CALCULATE INITIAL PZR VOLUME as follows:</p> <p>INITIAL = $(\frac{\text{PZR LVL} + 100 - \text{PZR LVL}}{V_f} \times 16.73 \text{ ft}^3/\% \times 7.4805 \text{ gal/ft}^3 \times 0.01605 \text{ ft}^3/\text{lbm}$ PZR $\frac{V_f}{V_g}$ VOLUME</p> <p>INITIAL = $(\frac{60.24 + 100 - 60.24}{V_f} \times 2 \text{ gal ft}^3/\% \text{ lbm}$ PZR $\frac{V_f}{V_g}$ VOLUME</p>	<p>___SAT</p> <p>___UNSAT</p>
<u>STANDARD:</u>	<p>Performer performs the following calculation and determines that:</p> <p>Initial Pzr Volume is 4971.946 gal</p>	
<u>COMMENTS:</u>		

STEP 8:

[4] CALCULATE Pressurizer (PZR) Leakage as follows:4
(Continued)

[e] CALCULATE INITIAL PZR VOLUME as follows:

$$\text{FINAL PZR VOLUME} = \left(\frac{\text{PZR LVL} + 100}{V_f} - \frac{\text{PZR LVL}}{V_g} \right) \times 16.73 \text{ ft}^3/\% \times 7.4805 \text{ gal/ft}^3 \times 0.01605 \text{ ft}^3/\text{lbm}$$

$$\text{FINAL PZR VOLUME} = \left(\frac{59.55 + 100}{V_f} - \frac{59.55}{V_g} \right) \times 2 \text{ gal ft}^3/\% \text{ lbm}$$

Critical Step

___SAT

___UNSAT

STANDARD:

Performer performs the following calculation and determines that:

Initial Pzr Volume is 4929.5856 gal

COMMENTS:

<u>STEP 9:</u>	<p>[4] CALCULATE Pressurizer (PZR) Leakage as follows:4 (Continued)_</p> <p>[F] CALCULATE PZR Leakage as follows:</p> <p style="text-align: center;">(Step [d]) (Step [e]) PZR Leakage = INITIAL - FINAL </p>
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STEP 11:		Critical Step
	<p>[6] CALCULATE Total RCS Leakage as follows:</p> <p style="text-align: center;">(Step [3]) (Step [4]) (Step [5] or 0)</p> <p>Total RCS Leakage = VCT Leakage + PZR Leakage + Temp Corr</p> <p>Total RCS Leakage = ____ gpm + ____ gpm + ____ gpm</p> <p>Total RCS Leakage = _____ gpm</p>	<p>____ SAT</p> <p>____ UNSAT</p>
STANDARD:	<p>Performer performs the following calculation:</p> <p>.3479 gpm + .588 gpm + 0 gpm = 0.9359 gpm</p>	
COMMENTS:		

STEP 12:

[7] **CALCULATE** Leakage to Pressurizer Relief Tank (PRT)
as follows:

[a] **CONVERT** INITIAL and FINAL PRT LEVEL from
percent (%) to gallons using TI-4, Part II, and

RECORD the converted PRT LEVELS in Step [b].

[b] **CALCULATE** Leakage to PRT using the following
equation:

$$\text{Leakage To PRT} = \frac{\text{FINAL PRT LVL} - \text{INITIAL PRT LVL}}{\Delta T \text{ (Step [1])}}$$

$$\text{Leakage To PRT} = \frac{(\text{ gal } - \text{ gal })}{\text{ min }}$$

$$\text{Leakage To PRT} = \text{ gpm}$$

___ SAT

___ UNSAT

STANDARD:

Performer determines that since the PRT level did not
change the Leakage to the PRT is 0 gpm.

COMMENTS:

STEP 13:

[8] **CALCULATE** Leakage to Reactor Coolant Drain Tank (RCDT) as follows:

[a] **CONVERT** INITIAL and FINAL RCDT LEVEL from percent (%) to gallons using TI-4, Part II, and

RECORD the converted RCDT LEVELS in Step [b].

[b] **CALCULATE** Leakage to RCDT using the following equation:

$$\text{Leakage To RCDT} = \frac{\text{FINAL RCDT LVL} - \text{INITIAL RCDT LVL}}{\Delta T (\text{Step [1]})}$$

$$\text{Leakage To RCDT} = \frac{(\text{ gal } - \text{ gal })}{\text{ min }}$$

$$\text{Leakage To RCDT} = \text{ gpm}$$

___ SAT

___ UNSAT

STANDARD:

Performer determines that since the RCDT level did not change the Leakage to the RCDT is 0 gpm.

COMMENTS:

		<u>Critical Step</u>
<u>STEP 14:</u>	<p>[9] CALCULATE Identified Leakage as follows:</p> <div style="text-align: right; margin-right: 100px;">(Section 4.1 Step [6])</div> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">(Step [7]) Leakage To PRT</div> <div style="text-align: center;">(Step [8]) Leakage to RCDT</div> <div style="text-align: center;">+ Total SG Leakage</div> </div> <p>Identified = ___ gpm + ___ gpm + ___ gpm Leakage</p> <p>Identified = _____ gpm (Acc Crit: ≤ 10 gpm)</p>	<p>___ SAT</p> <p>___ UNSAT</p>
<u>STANDARD:</u>	Performer determines that Identified Leakage is 0 gpm.	
<u>COMMENTS:</u>		

		<u>Critical Step</u>
<u>STEP 15:</u>	<p>[10] CALCULATE Unidentified Leakage as follows:</p> <p style="text-align: center;">(Step [6]) (Step [9])</p> <p>Unidentified = Total RCS Leakage - Identified Leakage Leakage</p> <p>Unidentified = _____ gpm - _____ gpm Leakage</p> <p>Unidentified = _____ gpm (Acc Crit: ≤ 1 gpm)</p>	<p>____SAT</p> <p>____UNSAT</p>
<u>STANDARD:</u>	<p>Performer performs the following calculation:</p> <p>0.9359 gpm + 0 gpm = 0.9359 gpm</p>	
<u>COMMENTS:</u>		

<u>STEP 16:</u>	ENSURE independently verified.	___SAT
<u>STANDARD:</u>	Performer reports that the task is completed and gives calculation to the SRO for independent verification.	
<u>COMMENTS:</u>		___UNSAT
Examiner cue:	Acknowledge report, notify performer that the task is complete. End task	

TIME STOP: _____

CANDIDATE CUE SHEET
(TO BE RETURNED TO EXAMINER UPON COMPLETION OF TASK)

DIRECTION TO TRAINEE:

I will explain the initial conditions, and state the administrative task to be performed. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

INITIAL CONDITIONS:

- The unit is in Mode 1 at 100% power.
- The Plant Computer program RCSWIB is unreliable.
- 1-SI-68-32 Appendix A has been completed through step 4 (2nd Data Set has been taken)
- You are an extra operator.

INITIATING CUES:

- Due to a suspected problem with RCSWIB, the Unit SRO has directed you to perform a manual calculation of RCS inventory balance.
- Report the results of the surveillance to the Unit SRO.

WATTS BAR NUCLEAR PLANT

3-OT-JPMADA.3-1

TASK TITLE: DETERMINE IF PERSONNEL WILL EXCEED ADMINISTRATIVE DOSE LIMITS
WHILE PERFORMING TASK

WATTS BAR NUCLEAR PLANT

3-OT-JPMADA.3-1

NUCLEAR TRAINING REVISION/USAGE LOG

Rev #	Date	Description of changes	Pages Affected	Reviewed By
0		Initial Issue, NRC JPM exam question. Does not need to be word processed.	All	H.J. Voiles
1	03/04/08	Added the option for another route to the task area. Corrected K/A references to comply with revision 2 supplement 1 of NUREG 1122	All	D.L.Hughes

REGION II
INITIAL LICENSE EXAMINATION
ADMINISTRATIVE JOB PERFORMANCE MEASURE

Task: DETERMINE IF PERSONNEL WILL EXCEED ADMINISTRATIVE DOSE LIMITS WHILE PERFORMING TASK

Alternate Path: N/A

Facility JPM #: 3-OT-JPMADA3-1

K/A Rating(s): 2.3.7 [3.5/3.6]

Task Standard: Ability to comply with radiation work permit requirements during normal or abnormal conditions.

Preferred Evaluation Location:

Simulator _____ In-Plant _____

Preferred Evaluation Method:

Perform X Simulate _____

References: SPP 5.1 Rev 0006 Radiological Controls

Task Number:: AUO-119-SSP-5.01-001 APPLICABLE FOR: AUO/RO/SRO

10CFR55.45: 10

Validation Time: 15 min. **Time Critical:** No

=====

Applicant: _____	NAME	SSN	Time Start: _____
			Time Finish: _____

Performance Rating: SAT _____ UNSAT _____ **Performance Time** _____

Examiner: _____

NAME	SIGNATURE	DATE
------	-----------	------

=====

COMMENTS

Tools/Equipment/Procedures Needed:

Calculator

NOTE TO EVALUATOR: Hand out the Applicant Data Sheet along with the Applicant's Cue Sheet.

READ TO OPERATOR**DIRECTION TO TRAINEE:**

I will explain the initial conditions, and state the administrative task to be performed. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

INITIAL CONDITIONS:

The unit had experienced a valid safety injection signal.

The unit had also experienced a loss of both Unit 1 shutdown boards and RCP Seal Injection and thermal barrier cooling have been isolated per ECA-0.0 Appendix "A".

Shutdown Board 1A has been re-energized and control room dispatches you to locally start 1A TBBP and throttle open the discharge valve.

A survey map is available for elevation 737 of the auxiliary building, showing dose rates and travel times to reach the TBBP Discharge valve that you will throttle open.

Three NAUO's are available for assignment to perform this task. All 3 NAUOs have a current NRC FORM-4 documenting current year and previous years exposures.

RADCON personnel are currently unavailable to provide assistance.

INITIATING CUES:

You have been directed to determine the NAUO (s) that could perform task without exceeding NORMAL administrative limits (EPIP 15 Emergency Exposure Guidelines is not to be considered):

- NAUO #1 has TEDE of 631 mRem
- NAUO #2 has TEDE of 603 mRem
- NAUO #3 has TEDE of 613 mRem

START TIME: _____

NOTE TO EVALUATOR: The following steps may be performed out of order.	
<p>STEP 1: Calculate Exposure during pump start and throttle valve operation.</p> <p>STANDARD: $(1.2 \text{ R/hr})(1000\text{MR/R})(1\text{HR}/60\text{Min})(10 \text{ Min}) = 200 \text{ MR}$</p> <p>EVALUATOR Q&E: If the operator locates the current revision of SPP 5.1 Radiological Controls, a copy may be given to him/her.</p> <p>COMMENTS:</p>	<p>Critical Task</p> <p>___ SAT</p> <p>___ UNSAT</p>
<p>STEP 2: Calculate the exposure getting to task area and return.</p> <p>STANDARD: Dose received for 2 way travel for survey area "B" : $(2.7 \text{ R/hr})(1000\text{MR/R})(1\text{HR}/60\text{Min})(4 \text{ Min}) = 180 \text{ MR}$</p> <p>Dose received for 2 way travel for survey area "C" : $(4.0 \text{ R/hr})(1000\text{MR/R})(1\text{HR}/60\text{Min})(3 \text{ Min}) = 200 \text{ MR}$</p> <p><i>Determines that Route "B" is the route to take.</i></p> <p>COMMENTS:</p>	<p>___ SAT</p> <p>___ UNSAT</p>

<p>STEP 3: Calculate total dose for job.</p> <p>STANDARD: Dose received for 2 way travel for survey area "B" are added to dose received in Survey Area "A":</p> <ol style="list-style-type: none"> 1) Two way Survey Area B = 180 MR 2) Dose in Survey Area A = 200 MR 3) Total Dose = 200 MR + 180 MR = 380 MR <p>COMMENTS:</p>	<p>Critical Task</p> <p>___ SAT</p> <p>___ UNSAT</p>
<p>STEP 5: Determine total dose that would be received for all NAUO.s involved.</p> <p>STANDARD: Performer Determines dose that would be received by NAUO's.</p> <ol style="list-style-type: none"> 1) NAUO #1: 631 mrem + 380 mrem = 1011 mrem 2) NAUO #2: 603 mrem + 380 mrem = 983 mrem 3) NAUO #3: 613 mrem + 380 mrem = 993 mrem <p>COMMENTS:</p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p>STEP 5: Determines which NAUO can perform tasks without exceeding Administrative limits.</p> <p>STANDARD: Performer determines NAUOs #2 and #3 are the <u>only</u> NAUOs that could perform task.</p> <p>COMMENTS:</p> <p style="text-align: center;">END OF TASK</p>	<p>Critical Task</p> <p>___ SAT</p> <p>___ UNSAT</p>

TIME STOP: _____

**APPLICANT CUE SHEET
(TO BE RETURNED TO EXAMINER UPON COMPLETION OF TASK)**

DIRECTION TO TRAINEE:

I will explain the initial conditions, and state the administrative task to be performed. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

INITIAL CONDITIONS:

The unit had experienced a valid safety injection signal.

The unit had also experienced a loss of both Unit 1 shutdown boards and RCP Seal Injection and thermal barrier cooling have been isolated per ECA-0.0 Appendix "A".

Shutdown Board 1A has been re-energized and control room dispatches you to locally start 1A TBBP and throttle open the discharge valve.

A survey map is available for elevation 737 of the auxiliary building, showing dose rates and travel times to reach the TBBP Discharge valve that you will throttle open.

Three NAUO's are available for assignment to perform this task. All 3 NAUOs have a current NRC FORM-4 documenting current year and previous years exposures.

RADCON personnel are currently unavailable to provide assistance.

INITIATING CUES:

You have been directed to determine the NAUO (s) that could perform task without exceeding NORMAL administrative limits (EPIP 15 Emergency Exposure Guideline is not to be considered):

- NAUO #1 has TEDE of 631 mRem
- NAUO #2 has TEDE of 603 mRem
- NAUO #3 has TEDE of 613 mRem

APPLICANT DATA SHEET
(TO BE RETURNED TO EXAMINER UPON COMPLETION OF TASK)

SURVEY DATA:

- TBBP control switches and pump discharge FCV are located in Survey area "A".
 - Estimated time at control switch and discharge valve is 10 minutes.
 - ONE-way travel time to Valve & control switches via route "B" is 2 minutes.
 - ONE-way travel time to Valve & control switches via route "C" is 1 minute 30 seconds.
 - General Area Dose rate for Survey Area "A" is 1.2 R/hr.
 - General Area Dose rate for Survey Area "B" is 2.7 R/hr.
 - General Area Dose rate for Survey Area "C" is 4.0 R/hr.
-
- NAUO #1 has TEDE of 631 mRem
 - NAUO #2 has TEDE of 603 mRem
 - NAUO #3 has TEDE of 613 mRem

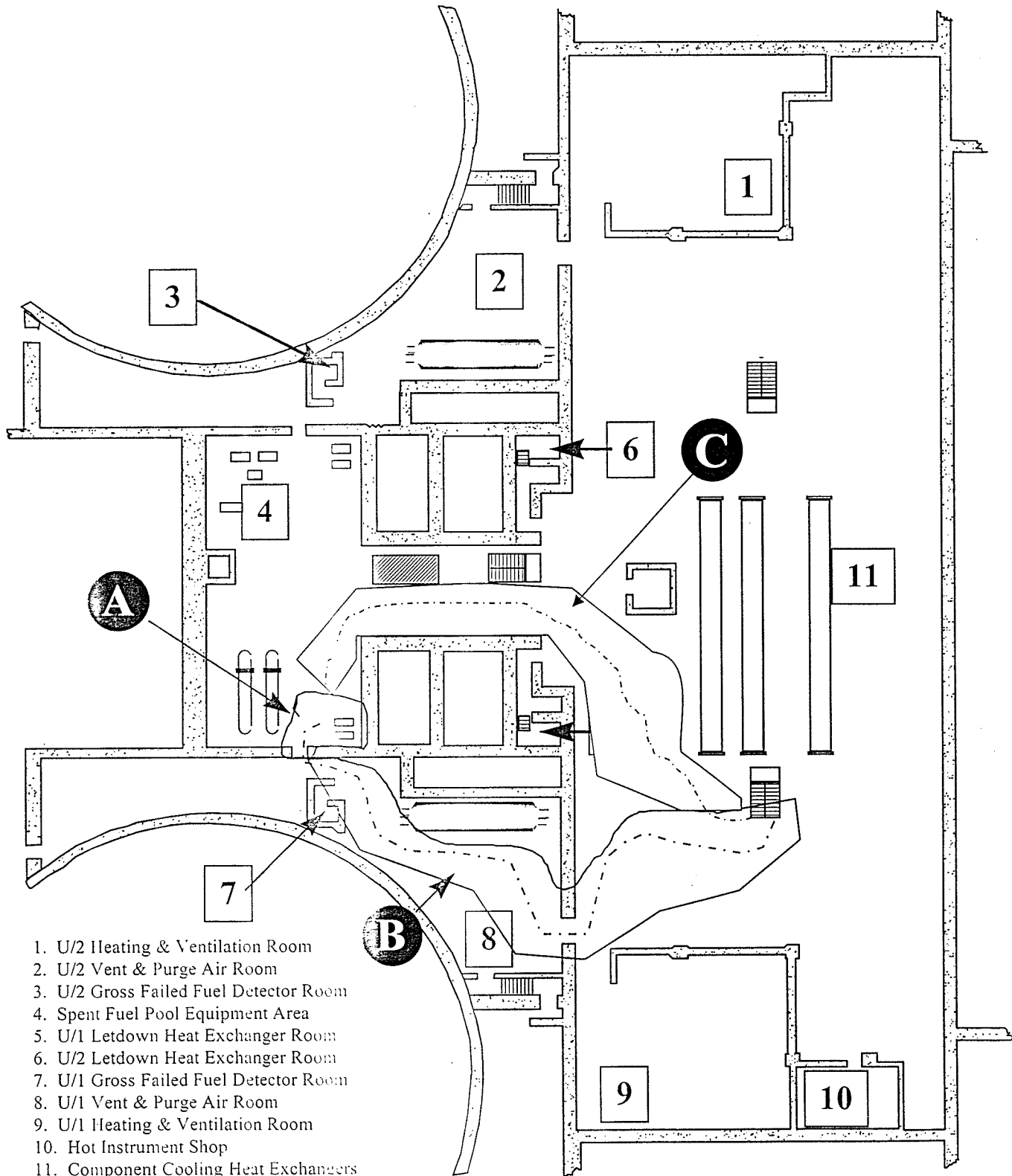
RESULTS:

Indicate below by checking yes or no if the respective NAUO can be allowed to perform task without exceeding administrative dose limits.

	YES	NO
NAUO #1	<input type="checkbox"/>	<input type="checkbox"/>
NAUO #2	<input type="checkbox"/>	<input type="checkbox"/>
NAUO #3	<input type="checkbox"/>	<input type="checkbox"/>

APPLICANT DATA SHEET
(TO BE RETURNED TO EXAMINER UPON COMPLETION OF TASK)

AUXILIARY BLDG ELEV. 737 G/A



WATTS BAR NUCLEAR PLANT

3-OT-JPMS081b

**TASK TITLE: CLASSIFY THE EVENT PER THE REP (LOCA WITH
SIGNIFICANT FUEL FAILURE AND POTENTIAL LOSS OF
CONTAINMENT)**

WATTS BAR NUCLEAR PLANT

3-OT-JPMS081b

NUCLEAR TRAINING REVISION/USAGE LOG

REV #	Date	Description of Changes	Pages Affected	Reviewed By
0	03/05/08	Initial issue, generated for NRC Initial License Exam	ALL	D.L.Hughes

WATTS BAR NUCLEAR PLANT

3-OT-JPMS081b

EVALUATION SHEET

Task: Classify The Event Per The REP (LOCA WITH SIGNIFICANT FUEL FAILURE AND POTENTIAL LOSS OF CONTAINMENT)

Alternate Path: N/A

Facility JPM #: 3-OT-JPMS081b

K/A Rating(s): 2.4.29 Knowledge of the emergency plan. IMPORTANCE RO 3.1 SRO 4.4

Task Standard: The event is classified as an GENERAL EMERGENCY based on "Loss Of Any Two Barriers And A Potential Loss Of Third Barrier" Notifications are made per EPIP-5.

Preferred Evaluation Location:

Simulator X In-Plant

Preferred Evaluation Method:

Perform X Simulate
This JPM will be simulated.

References: EPIP-1 "Emergency Plan Classification Flowpath", Rev. 27; EPIP-5 "GENERAL EMERGENCY", Rev. 34

Task Number: SRO-113-EPIP-001

APPLICABLE FOR: SRO

10CFR55.45: 10, 11, 12

Validation Time: 20 min. **Time Critical:** Yes

Applicant: _____
NAME SSN/EIN Time Start: _____
Time Finish: _____

Performance Rating: SAT _____ UNSAT _____ Performance Time _____

Examiner: _____
NAME SIGNATURE DATE

COMMENTS

WATTS BAR NUCLEAR PLANT

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EVALUATOR INFORMATION SHEET

TASK TITLE: CLASSIFY THE EVENT PER THE REP (LOCA WITH SIGNIFICANT FUEL FAILURE AND POTENTIAL LOSS OF CONTAINMENT)

SIMULATOR SETUP INSTRUCTIONS:

NONE: THIS JPM IS SIMULATED and the simulator will not be used to reflect the conditions.

REQUIRED MATERIALS:

EPIP-1 and EPIP-5

SAFETY CONSIDERATIONS:

None

Tools/Equipment/Procedures Needed:

Ensure clean copy of EPIP-1 and EPIP-5 in all copies of Emergency Instructions on the Simulator Floor and in the file drawer of Unit Supervisor's desk.

Print out Met Tower Cue Sheets on following 3 pages. The Met Tower cue sheets are to be given to the performer when they are obtaining information from the Integrated Computer System (ICS).

SIMULATOR OPERATOR INSTRUCTIONS:

1. Obtain copy of EPIP-5 to facilitate role plays for contacts made by the performer.
2. Performer must use NRC ring down phone.

EDS METDATA 46M AVG
WIND DIR & SPEED

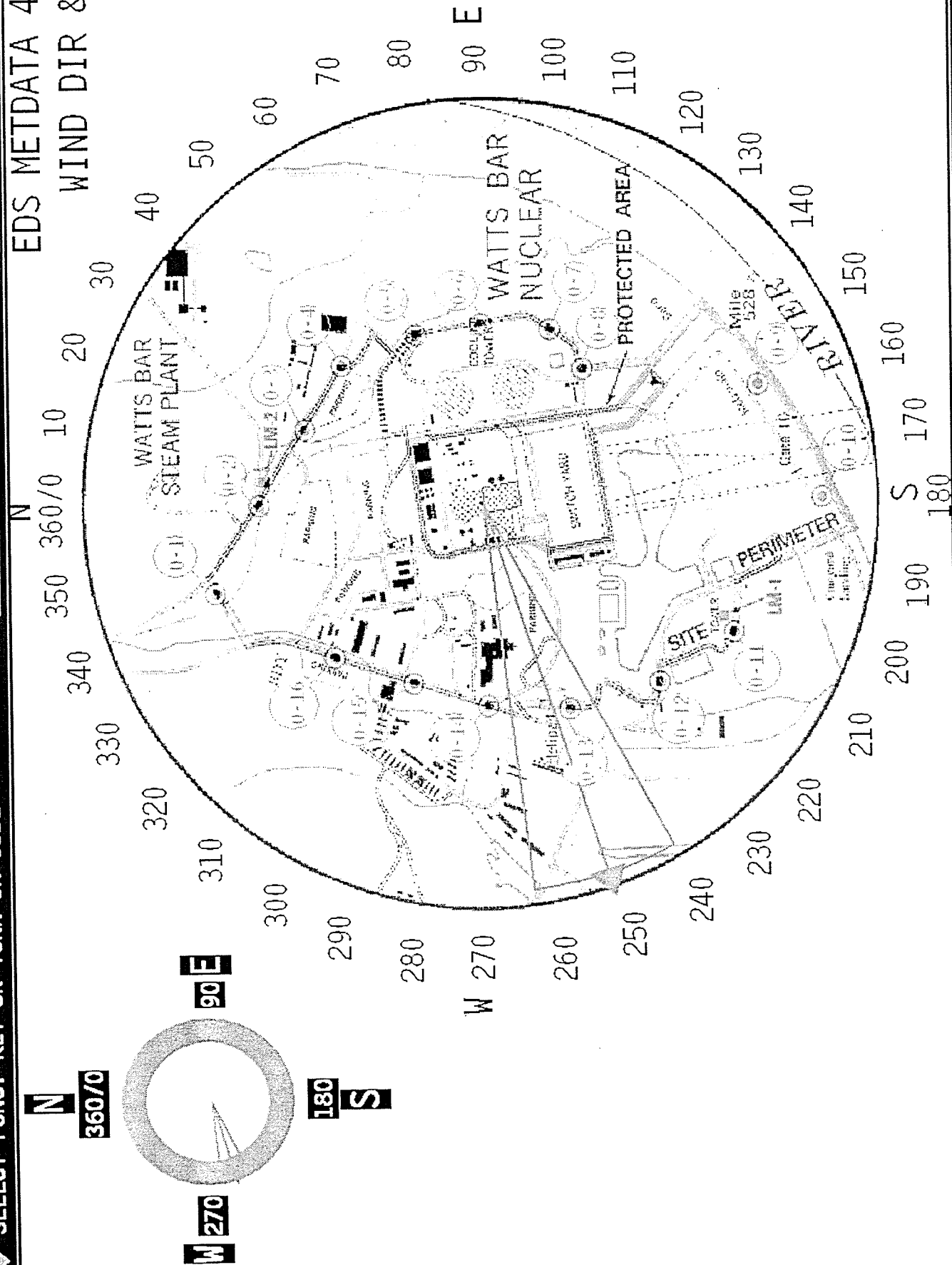
MET46A15

8-4

MI/HR

MET46D15

73

DEGREES
(FROM)

05-MAR-2008 16:30:28

SELECT FUNC. KEY OR TURN-ON CODE DOSE >

SCHPZI A

WBN - DOSE ASSESSMENT

RUN
CALCULATION
PROGRAM

INPUTS:	VALUE	UNITS	QUALITY
MET46A15	4.77	MI/HR	GOOD
MET46D15	72.53	DEG	GOOD
METSTCS2	B		GOOD
RAD025	1.37E+02	uCi/s	BAD
IODINE	-1.00E+04	uCi/s	NCAL

MET
DATA

EFF1

WIND
DIRECTION

RADIATION
REL RATE

PREVIOUS CANCEL F1= CLEAR F2=

MODE 7

DDMM/YY/HH:MM:SS

MRN DEF

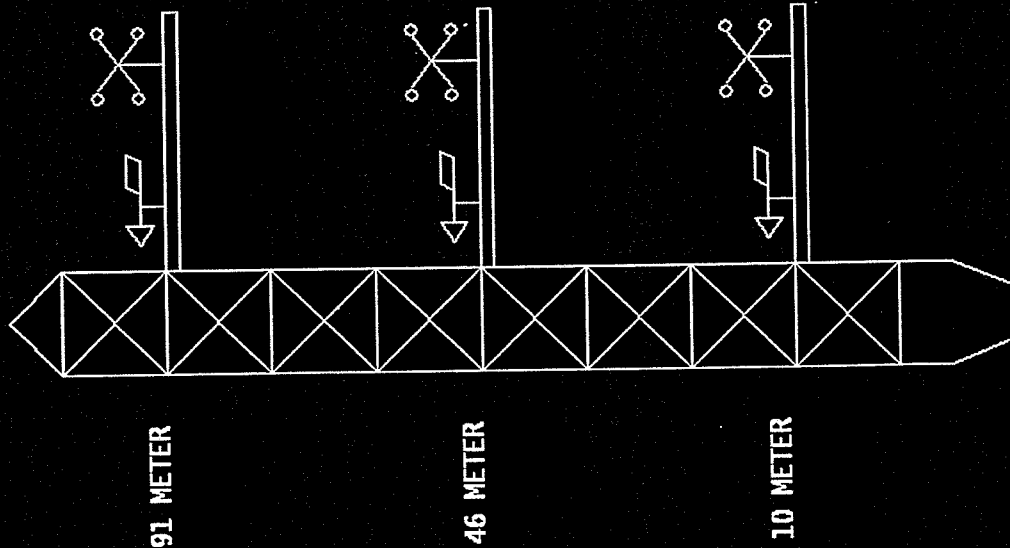
05-MAR-2008 16:51:14

SCHPZ I A

SELECT FUNC. KEY OR TURN-ON CODE METDATA >

METEOROLOGICAL DATA 15 MIN. AVG.

AIR TEMPERATURE:	42.59	DEGF
VEC WIND DIR:	70	DEG
VEC WIND SPEED:	4.9	MI/HR
AVG WIND SPEED:	5.0	MI/HR
HORIZ SIG-THETA:	16	DEG
AIR TEMPERATURE:	43.45	DEGF
VEC WIND DIR:	73	DEG
VEC WIND SPEED:	4.6	MI/HR
AVG WIND SPEED:	4.8	MI/HR
HORIZ SIG-THETA:	17	DEG
AIR TEMPERATURE:	44.56	DEGF
VEC WIND DIR:	80	DEG
VEC WIND SPEED:	4.1	MI/HR
AVG WIND SPEED:	4.4	MI/HR
HORIZ SIG-THETA:	24	DEG
10 METER DEW POINT*:	30.57	DEGF



RAINFALL
LAST HOUR: 0.00 IN

SOLAR
RADIATION*: 0.85 LANGLEY

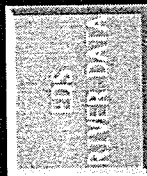
DIFFUSER POND
ELEVATION: 700.99 FEET

RIVER FLOW: 4877 CFS

STABILITY CLASS: B

MET-TOWER LINK IS UP

* = HOURLY AVERAGES



WATTS BAR NUCLEAR PLANT

3-OT-JPMS081b

Ensure clean copy of EPIP-1 and EPIP-5 in all copies of Emergency Instructions on the Simulator Floor and in the file drawer of Unit Supervisor's desk.

READ TO OPERATOR

DIRECTION TO TRAINEE:

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM, including any required communications. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

THE CURRENT SIMULATOR CONDITIONS ARE NOT REPRESENTATIVE OF THIS JPM.

INITIAL CONDITIONS:

- Unit 1 was at 100% RTP when a LOCA occurred.
- An SI occurred due to high containment pressure.
- RCS pressure stabilized at 350 psig saturated conditions.
- The CLAs are injecting.
- The ONLY ECCS pump in service is the 1B-B RHR pump, all other ECCS pumps tripped shortly after the SI.
- Containment pressure is 1.8 psig and stable.
- 1-RM-90-273 & 1-RM-90-274 have risen to 35 rem/hr.
- 1-RM-90-271 & 1-RM-90-272 have risen to 60 rem/hr.
- Containment Hydrogen concentration is 6% as indicated on the H₂ analyzers.
- - The STA reports a RED path condition exists on core cooling.
- You are the SM/SRO

INITIATING CUES:

The Unit Supervisor has informed you of the above conditions.

The operators are taking actions per the emergency instructions (currently transitioning from E-1 to FR-C.1).

You are to make the initial classification of the event per the REP EIPs and make required notifications.

Portions of this JPM are time critical.

WATTS BAR NUCLEAR PLANT

3-OT-JPMS081b

START TIME: _____

<p><u>STEP 1:</u> Refers to EPIP-1 to determine level of event.</p> <p><u>STANDARD:</u> Performer refers to EPIP-1 and declares a GENERAL EMERGENCY based on "Loss Of Any Two Barriers And A Potential Loss Of Third Barrier" (1.1.1 Loss, 1.2.2 Loss, 1.3.2 Potential Loss) This must be completed within 15 minutes of task assignment.</p> <p>This step is critical to ensure proper activation of TVA resources for event in progress.</p> <p><u>COMMENTS:</u> RECORD time that declaration was made: _____</p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 2:</u> Implements EPIP-5, GENERAL EMERGENCY</p> <p><u>STANDARD:</u> EPIP-5, GENERAL EMERGENCY, is implemented.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

WATTS BAR NUCLEAR PLANT

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<p><u>STEP 3:</u> [1] IF the onsite emergency centers are not staffed, THEN DIRECT Shift Personnel to activate the Emergency Paging System (EPS) to staff the Technical Support Center (TSC) and Operations Support Center (OSC). Shift Personnel should confirm activation and provide the 20 minute printed report to the SM for review.</p> <p>A IF the EPS system fails, call the ODS, ringdown or (5-751-1700) and DIRECT him to activate the EPS.</p> <p>B IF the above methods of activating the EPS fail, THEN DIRECT Shift Personnel to use the Watts Bar Nuclear Plant Emergency Response Call-List to staff the TSC and OSC. (This list is located in the EPS Manual near the terminal.)</p> <p><u>STANDARD:</u> The SRO activates the emergency paging system (EPS) to staff the TSC and Operations Support Center (OSC) or EPS is activated in the control room.</p> <p>This step is critical to ensure proper activation of TVA resources for event in progress.</p> <p>**CUE: After the shift personnel are notified, acknowledge the request to activate the Emergency Paging System.</p> <p><u>COMMENTS:</u></p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
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WATTS BAR NUCLEAR PLANT
3-OT-JPMS081b

<p>STEP 4: [2] IF the TSC has <u>not</u> been activated, THEN</p> <p>a. INITIATE Appendix A and B, Initial Notification FORM for GENERAL EMERGENCY and Protective Action Recommendations.</p> <p>STANDARD: Appendix A is accurately completed with</p> <ol style="list-style-type: none"> 1. This is a Drill 2. Their name, Shift Manager (SED) at WBN Plant. General Emergency declared on UNIT 1 3. EAL Designators: [LOSS 1.1.1 and LOSS 1.2.2, and Potential LOSS 1.3.2] 4. Brief description of incident: [RCS LOCA with a Loss of Subcooled Margin, Loss of Core Cooling and High Hydrogen concentration in Containment] (or something similar) 5. Radiological Conditions [Either Release information not known or Minor releases within federally approval limits] 6. Event Declared: [Time and Date] 7. Wind direction at 46 meters, coming from [73] degrees AND wind speed at 46 meters [4.8] mph. <p><u>Evaluator Cue (1):</u> <i>The Met Tower cue sheets are to be given to the performer when they are obtaining information from the Integrated Computer System (ICS).</i></p> <p><u>Evaluator Cue (2):</u> <i>When release data addressed, state "Release data not available for Appendix B."</i></p> <p>NOTE TO EVALUATOR: <i>Items 2, 3, 6, and 7 above are the critical parts.</i></p> <ul style="list-style-type: none"> • <i>Items 2 & 3 are critical due to correct EALs must be used for General Emergency declaration.</i> • <i>Item 6 is critical and it must be within 15 minutes of the performer stating that they understand their task and the JPM is started.</i> • <i>Item 7 is critical to ensure proper protective actions are recommended.</i> <p><u>COMMENTS:</u></p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
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WATTS BAR NUCLEAR PLANT

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<p><u>STEP 5:</u> <i>Appendix B:</i></p> <p><u>STANDARD:</u> Operator determines from page 15, logic chart in EPIP-5, that appropriate protective action recommendation is RECOMMENDATION 2. This should be identified on the notification form in the next JPM step.</p> <p><u>COMMENTS</u></p>	<p style="text-align: center;"><u>Critical Step</u></p> <p style="text-align: center;">___ SAT</p> <p style="text-align: center;">___ UNSAT</p>		
<p><u>STEP 6:</u> <i>Appendix A completion:</i></p> <p><u>STANDARD:</u> Appendix A is accurately completed with:</p> <p>Item 8:</p> <p style="margin-left: 40px;"><input type="checkbox"/> Recommendation 2 is checked</p> <table border="1" style="margin-left: 40px; width: 60%; border-collapse: collapse;"> <tr> <td style="width: 30%; padding: 2px;">69-110</td> <td style="padding: 2px;">A-1, B-1, C-1, D-1, A-3, D-2, -4, -5</td> </tr> </table> <p style="margin-left: 40px;">is checked</p> <p style="text-align: center;">(Both blocks should be checked)</p> <p><u>COMMENTS</u></p>	69-110	A-1, B-1, C-1, D-1, A-3, D-2, -4, -5	<p style="text-align: center;"><u>Critical Step</u></p> <p style="text-align: center;">___ SAT</p> <p style="text-align: center;">___ UNSAT</p>
69-110	A-1, B-1, C-1, D-1, A-3, D-2, -4, -5		

WATTS BAR NUCLEAR PLANT
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<p>STEP 7: [2.b] NOTIFY the ODS direct by ODS Ring-down or by USING 5-751-1700 or 5-751-2495 and</p> <p>1) PROVIDE the information from Appendix A.</p> <p>2) FAX Appendix A to the ODS. (# pre-programmed or 5-751-8620).</p> <p>STANDARD: <u>The ODS is notified and provided the information on Appendix A. This notification must be made within 10 minutes of event declaration.</u> Appendix A is placed in the fax machine and transmission simulated.</p> <p>EVALUATOR NOTE: DO NOT allow actual call to actual ODS. Ensure call is made to simulator operator</p> <p>**CUE: (Booth Operator) Role play as the ODS and repeat back the report.</p> <p>**CUE: Do NOT allow fax to be actually transmitted.</p> <p>COMMENTS: RECORD time that ODS was notified: _____</p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
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WATTS BAR NUCLEAR PLANT 3-OT-JPMS081b

<p><u>STEP 8:</u> [2.c] IF the ODS CANNOT be contacted within <u>10 minutes</u>, THEN</p> <ol style="list-style-type: none">1) NOTIFY Rhea County, Meigs County, McMinn County, and the Tennessee Emergency Management Agency (TEMA) of the Classification USING the contact information in Appendix E.2) FAX Appendix A to TEMA at 9-1-615-242-9635. <p><u>STANDARD:</u> Performer N/As step since ODS was previously notified.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 9:</u> [2.d] ANNOUNCE to the crew: "A GENERAL EMERGENCY is being declared based on Loss of Two Barriers and Potential Loss Of A Third Barrier. I will be the Site Emergency Director."</p> <p><u>STANDARD:</u> The above announcement is made to the crew. Wording describing the event may vary. Step is critical to alert crew to the declaration of the GENERAL EMERGENCY and provide for tracking personnel.</p> <p>**CUE: After the crew is notified, acknowledge the report.</p> <p><u>COMMENTS:</u></p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>

WATTS BAR NUCLEAR PLANT

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<p>STEP 10: [2.e] TRACK dispatched personnel by name, and PERFORM one of the following:</p> <ul style="list-style-type: none"> • IF OSC is <u>not</u> staffed, THEN INFORM Maintenance Shift Supervisor of names for team tracking. • WHEN OSC is staffed, THEN INFORM OSC manager of names for team tracking. <p>STANDARD: Maintenance Shift Supervisor is notified of names for team tracking.</p> <p>**CUE: (As Crew Member) If asked, State that Control Bldg AUO John Doe was dispatched to evaluate 1B 6.9 KV Shutdown Board.</p> <p>**CUE: (Booth Operator) Role play as the Maintenance Shift Supervisor or OSC manager and repeat back the report.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p>STEP 11: [5] ANNOUNCE to the plant: "ATTENTION ALL SITE PERSONNEL. ATTENTION ALL SITE PERSONNEL. A GENERAL EMERGENCY has been declared based on Loss of two barriers and potential loss of a third barrier. Staff the TSC and OSC. (Repeat)</p> <p>STANDARD: A public address announcement for Plant Emergency Response Personnel to staff the TSC and OSC is made over the plant paging system. Wording describing the event may vary.</p> <p>Step is critical to alert plant to the declaration of the GENERAL EMERGENCY.</p> <p><u>COMMENTS:</u></p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>

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<p><u>STEP 12:</u> [6] INITIATE WBN EPIP-8, Personnel Accountability and Evacuation, Appendix D.</p> <p><u>EVALUATOR CUE:</u> When the performer starts to refer to EPIP-8, inform him/her that another SRO will continue on from here. Notify performer that the task is complete.</p> <p>End of task</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
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TIME STOP: _____

**PERFORMER HANDOUT SHEET
(TO BE RETURNED TO EXAMINER UPON COMPLETION OF TASK)**

DIRECTION TO TRAINEE:

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM, including any required communications. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

THE CURRENT SIMULATOR CONDITIONS ARE NOT REPRESENTATIVE OF THIS JPM.

INITIAL CONDITIONS:

- Unit 1 was at 100% RTP when a LOCA occurred.
- An SI occurred due to high containment pressure.
- RCS pressure stabilized at 350 psig saturated conditions.
- The CLAs are injecting.
- The ONLY ECCS pump in service is the 1B-B RHR pump, all other ECCS pumps tripped shortly after the SI.
- Containment pressure is 1.8 psig and stable.
- 1-RM-90-273 & 1-RM-90-274 have risen to 35 rem/hr.
- 1-RM-90-271 & 1-RM-90-272 have risen to 60 rem/hr.
- Containment Hydrogen concentration is 6% as indicated on the H₂ analyzers.
- The STA reports a RED path condition exists on core cooling.
- You are the SM/SRO

INITIATING CUES:

The Unit Supervisor has informed you of the above conditions.

The operators are taking actions per the emergency instructions (currently transitioning from E-1 to FR-C.1).

You are to make the initial classification of the event per the REP EIPs and make required notifications.

Portions of this JPM are time critical.