Job Performance Measure
Worksheet

Facility: _____Pilgrim_____   Task No: _____356-01-07-004_____

Task Title: Perform a Short Form Heat Balance___   JPM No: _____Admin 1_____

K/A Reference: ___293007 K1.13 2.3/2.9_____   Position: _____RO/SRO_____

Examinee: _____   NRC Examiner: _____

Date: _____

Method of testing:

Simulated Performance_____   Actual Performance: _____✓_____

Classroom_____   Simulator____✓____   Plant_____

Read to the Examinee:

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

Initial Conditions: Plant conditions are as follows:

- The plant is at 100% power.
- Plant conditions are stable.
- The plant process computer is out of service.

Task Standard: Attachment 4 of PNPS 2.1.10 is completed with no errors. The system procedure shall be followed without failure of critical tasks. Critical steps must be performed in order. Other steps may be performed out of sequence.

Required Materials: Steam Tables

General References: PNPS 2.1.10, Rev. 21

Initiating Cue: "[Operator's name], Perform a Short Form Heat Balance using Attachment 4 of PNPS 2.1.10.

Time Critical Task: NO

Validation Time: 5 minutes

PERFORMANCE INFORMATION
(Critical steps denoted with a check mark)

_____ **Performance Step 1:** Operator reviews the applicable sections of the procedure.

Standard: Operator reviews the applicable sections of the procedure.

Comment: IF Operator: Restore to 100% power IC (IC-14).

_____ **Performance Step 2:** Operator fills out date/time and performed by on Attachment 4.

Standard: Date/time and performed by recorded on Attachment 4.

Comment:

_____ **Performance Step 3:** Find and record reading for Feedwater Flow A from FI-640-24A on Panel C905.

Standard: FI-640-24A reading recorded.

Comment: Approximately 4 Mlb/hr.

_____ **Performance Step 4:** Find and record reading for Feedwater Flow B from FI-640-24B on Panel C905.

Standard: FI-640-24B reading recorded.

Comment: Approximately 4 Mlb/hr.

PERFORMANCE INFORMATION
(Critical steps denoted with a check mark)

_____ **Performance Step 5:** Find and record reading for Feedwater Temperature A from TR-3496A on Panel C1.

Standard: TR-3496A reading recorded (red pen).

Comment: Approximately 365°F.

_____ **Performance Step 6:** Find and record reading for Feedwater Temperature B from TR-3496B on Panel C1.

Standard: TR-3496B reading recorded (blue pen).

Comment: Approximately 365°F.

_____ **Performance Step 7:** Calculate Total Feedwater flow by adding the A and B Feedwater Flows.

Standard: Total Feedwater flow calculated.

Comment: Approximately 8 Mlb/hr.

_____ **Performance Step 8:** Average the A and B Feedwater Temperatures loops together.

Standard: Average Feedwater temperature calculated.

Comment: Approximately 365°F.

_____ **Performance Step 9:** Using steam tables, determine Feedwater enthalpy.

Standard: Feedwater enthalpy is recorded.

Comment: h_f 365°F ≈ 337.6 BTU/lb

__✓__ **Performance Step 10:** Determine Core Thermal Power by subtracting Feedwater enthalpy from 1189.6 and dividing by 3.413, multiply by Total feedwater flow and add 9.02.

Standard: Core Thermal Power is calculated [2018 MWth (+/- 50 mw)].

Comment:

Terminating Cue: When the candidate has completed the core thermal power calculation, the examiner shall inform him/her that the task is complete.

VERIFICATION OF COMPLETION

JPM No.: _____

Examinee's Name:_____

Examiner's Name:_____

Date performed:_____

Number of attempts:_____

Time to complete:_____

Question Documentation:

Question: _____

_____

_____

Response: _____

_____

_____

Result: **SAT** or **UNSAT**

Examiner's signature and date:_____   _____

Job Performance Measure
Quality Checklist

Every JPM should:

1. ___✓___   Be supported by facility licensee's job task analysis.

2. ___✓___   Be operationally important (meets NRC K/A Catalog threshold criterion of 2.5 (3 for requalification exams) or as determined by the facility and agreed to by the NRC).

3. ___✓___   Be designed as either SRO only, RO/SRO or AO/RO/SRO.

4.   Include the following, as applicable:

     a. ___✓___   Initial conditions

     b. ___✓___   Initiating cues

     c. ___✓___   References and tools, including associated procedures

     d. ___✓___   Validated time limits (average time allowed for completion) and specific designation of those JPMs that are deemed to be time-critical by the facility operations department

     e. ___✓___   Specific performance criteria that include:

         (1) ___✓___   Expected actions with exact control and indication nomenclature and criteria (switch position, meter reading), even if these criteria are not specified in the procedural step

         (2) ___✓___   System response and other cues that are complete and correct so that the examiner can properly cue the examinee, if asked

         (3) ___✓___   Statements describing important observations that should be made by the examinee

         (4) ___✓___   Criteria for successful completion of the task

         (5) ___✓___   Identification of those steps that are considered critical

         (6) ___✓___   Restrictions on the sequence of steps

Information Provided to Candidate

Initial Conditions: Plant conditions are as follows:

- The plant is at 100% power.
- Plant conditions are stable.
- The plant process computer is out of service.

Initiating Cue: "[Operator's name], Perform a Short Form Heat Balance using Attachment 4 of PNPS 2.1.10.

Security (Awareness and Familiarity)
Admin 2 Question #1:

What are the required actions if a credible bomb threat has been reported to the Control Room by the station security force?

ANSWER:

Enter PNPS 5.3.14, Security Incidents

Immediate Operator Actions: (.20 pts.)

[1]   Notify the SAS or CAS operator
[2]   Ensure the Operations Shift Supervisor (OSS) is aware of any incident.

Subsequent Operator Actions: (.20 pts.)

[1]   Refer to EPIP-100 to determine whether an Emergency Action Level (EAL) is exceeded.

      EAL Unusual Event, 7.1.3.1   (.20 pts.)
      Refers to Section 4.2 of 5.3.14 (.20 pts.)
      Refers to Section 4.3 of 5.3.14 (.20 pts.)

OPEN REFERENCE:

Reference: PNPS 5.3.14, Rev. 11, Security Incidents
              Section 3.0, Immediate Operator Actions
              Section 4.0, Subsequent Operator Actions
              EPIP-100 Emergency Classification and Notification, Rev. 12

K/A: 2.4.28 2.3/3.3

Security (Awareness and Familiarity)
Admin 2 Question #2:

A System Engineer needs to be called in due to a problem with the plant. When called, he states that he has consumed two (2) drinks in the last hour.

What requirements must be met if/when the System Engineer reports to the plant?

ANSWER:

- Candidate refers to PNPS 1.3.61-1, Fitness for Duty Determination Due to Unscheduled Work Shifts (0.2 pts.)

- Section 5.1, Call-In of Personnel for Unscheduled Work Shift (0.2 pts)

- Perform Attachment 1

- [1] Call in another person if possible. (0.2 pts)

  [2] If this is not possible, the individual will be consulted as to the time and amount of alcohol consumed and whether or not he/she feels fit to drive. (0.2 pts.)

  [3] If individual indicates he/she is able to drive, then a Medial or Security person, who shall be trained and/or certified to administer the test, will administer a breathalyzer test upon arrival at Pilgrim Station. (0.2 pts.)

OPEN REFERENCE:

Reference: PNPS 1.3.61-1, Rev. 3, Fitness for Duty Determination Due to Unscheduled Work Shifts

K/A: 2.1.5 2.3/3.4

Job Performance Measure
Worksheet

Facility:_____Pilgrim_____   Task No:_____341-03-02-021_____

Task Title: Determine RBCCW Pump Operability__   JPM No:_____Admin 3_____
            Using Flow Rate Surveillance Test Data

K/A Reference:____2.2.12____3.0/3.4_____   Position:_____RO/SRO_____

Examinee:_____   NRC Examiner:_____

Date:_____

Method of testing:

Simulated Performance_____   Actual Performance:_____✓_____

Classroom_____   Simulator____✓_____   Plant_____

Read to the Examinee:

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

Initial Conditions: Plant conditions are as follows:
- Procedure PNPS 8.5.3.1, "RBCCW Pump Operability And Flow Rate Tests" is in progress for Quarterly Pump Test on 'A' RBCCW pump.
- Data has been taken on the pump and is recorded in the working copy of the procedure.

Task Standard: Using data taken during a surveillance for the Quarterly Pump Test on 'A' RBCCW pump, determine that the shutoff head for the 'A' RBCCW pump is outside the acceptance criteria and declare the pump inoperable. The system procedure shall be followed without failure of critical tasks. Critical steps must be performed in order. Other steps may be performed out of sequence.

Required Materials: Calculator

General References: PNPS 8.5.3.1, Rev. 34

Initiating Cue: "[Operator's name], complete Attachment 1A of PNPS 8.5.3.1 for the Quarterly Pump Test using data taken on the 'A' RBCCW pump.

Time Critical Task: No

Validation Time: 10 minutes

PERFORMANCE INFORMATION
(Critical steps denoted with a check mark)

_____ **Performance Step 1:** Operator reviews the applicable sections of the procedure.

Standard: Operator reviews the applicable sections of the procedure.

Comment:

_____ **Performance Step 2:** Complete the RBCCW Pump A (P-202A) Inservice Pump Testing Data Sheet documentation (Sheet 6) as follows:

Calculate and record the total head (TH) at shutoff in equivalent feet of water for RBCCW Pump A (P-202A).

Standard: Using data already recorded calculates TH = 111.99 (+/- .2) and records it in Attachment 1A step [4] (a) [measured value].

Comment:

_____ **Performance Step 3:** Record information from [measured value] and [calculation] steps within this attachment on the Inservice Pump Testing Data Sheet.

Standard: Information recorded on the Inservice Pump Testing Data Sheet corresponds to Attachment 1 of the JPM.

Comment: Attachment 1 is a completed Inservice Data Sheet with the values required to be entered in **BOLD**.

PERFORMANCE INFORMATION
(Critical steps denoted with a check mark)

✓ **Performance Step 4:** Determines that the calculated Total Head at Shutoff puts the pump in the "Required Action" range and declares the 'A' RBCCW pump inoperable. (Per Section 10 [3] of PNPS 8.5.3.1.

Standard: 'A' RBCCW pump is declared inoperable.

Comment:

Terminating Cue: When the candidate has determined that the 'A' RBCCW pump is inoperable, the examiner shall inform him/her that the task is complete.

ATTACHMENT 1A
Sheet 6 of 6

INSERVICE PUMP TESTING DATA SHEET (P-202A)

TEST PARAMETER	REFERENCE VALUE		ACCEPTABLE RANGE	ALERT RANGE		REQUIRED ACTION RANGE		MEASURED VALUE	
				LOW	HIGH	LOW	HIGH		
SPEED (RPM)	NA		NA	NA	NA	NA	NA	NA	
STOP SUCTION	≥ 20 psig		≥ 20 psig	NA	NA	NA	NA	21 psig	
RUNNING SUCTION (psig)	38.5		NA	NA	NA	NA	NA	39.5 psig	
DISCHARGE PRESSURE AT SHUTOFF (psig)	92.5		NA	NA	NA	NA	NA	88.0 psig	
TOTAL HEAD (TH) AT SHUTOFF FT OF WATER	124.7		116.0 to 130.9	112.2 to < 116.0	> 130.9 to 137.2	< 112.2	> 137.2	111.99	
VIB. DISPLACEMENT (mils)	(H) 0.07	(V) 0.13	0 to 1 mil	NA	> 1 to 1.5 mils	NA	> 1.5 mils	(H) .08	(V) .12
VIB. VELOCITY (in./sec)	(H) 0.023	(V) 0.025	≤ 0.314	NA	NA	NA	NA	(H) .024	(V) .029

PERFORMED BY: (Signature) _____ DATE _____ TIME _____

IST REVIEW BY: (Signature) _____ DATE _____ TIME _____

CALCULATIONS:

  TOTAL HEAD

  TH = [DISCH PRESS at shutoff – running suction pressure] x 2.309

  TH = [(_____88.0_____) psig – (_____39.5_____) psig] x 2.309

  TH = _____111.99_____ ft

NOTES: Reference Values: PNPS 8.5.3.1 on 1/8/98 (Hydraulic)
            PNPS 8.I.11.19 on 11/29/97 (Vibration)

TEST EQUIPMENT:

TEST PARAMETER	INST NO.	CAL. DATE	CAL. DUE DATE
DISCHARGE PRESS M&TE GAUGE	_PIA-123_	_10/23/00_	_11/23/00_
DISCHARGE PRESS M&TE GAUGE	_PIA-124_	_10/20/00_	_11/20/00_
VIBRATION	_VIB-123_	_10/12/00_	_1/12/01_

VERIFICATION OF COMPLETION

JPM No.: _____

Examinee's Name:_____

Examiner's Name:_____

Date performed:_____

Number of attempts:_____

Time to complete:_____

Question Documentation:

Question: _____

_____

_____

Response: _____

_____

_____

Result: **SAT** or **UNSAT**

Examiner's signature and date:_____   _____

Job Performance Measure
Quality Checklist

Every JPM should:

1. ✓   Be supported by facility licensee's job task analysis.

2. ✓   Be operationally important (meets NRC K/A Catalog threshold criterion of 2.5 (3 for requalification exams) or as determined by the facility and agreed to by the NRC).

3. ✓   Be designed as either SRO only, RO/SRO or AO/RO/SRO.

4.   Include the following, as applicable:

     a. ✓   Initial conditions

     b. ✓   Initiating cues

     c. ✓   References and tools, including associated procedures

     d. ✓   Validated time limits (average time allowed for completion) and specific designation of those JPMs that are deemed to be time-critical by the facility operations department

     e. ✓   Specific performance criteria that include:

         (1) ✓   Expected actions with exact control and indication nomenclature and criteria (switch position, meter reading), even if these criteria are not specified in the procedural step

         (2) ✓   System response and other cues that are complete and correct so that the examiner can properly cue the examinee, if asked

         (3) ✓   Statements describing important observations that should be made by the examinee

         (4) ✓   Criteria for successful completion of the task

         (5) ✓   Identification of those steps that are considered critical

         (6) ✓   Restrictions on the sequence of steps

Initial Conditions: Plant conditions are as follows:
- Procedure PNPS 8.5.3.1, "RBCCW Pump Operability And Flow Rate Tests" is in progress for Quarterly Pump Test on 'A' RBCCW pump.
- Data has been taken on the pump and is recorded in the working copy of the procedure.

Initiating Cue: "[Operator's name], complete Attachment 1A of PNPS 8.5.3.1 for the Quarterly Pump Test using data taken on the 'A' RBCCW pump.

Radiation Work Permits
Admin Question #1:

Using the attached survey, identify the radiological postings required at the entrance to the 'A' RHR Valve Room, if any.
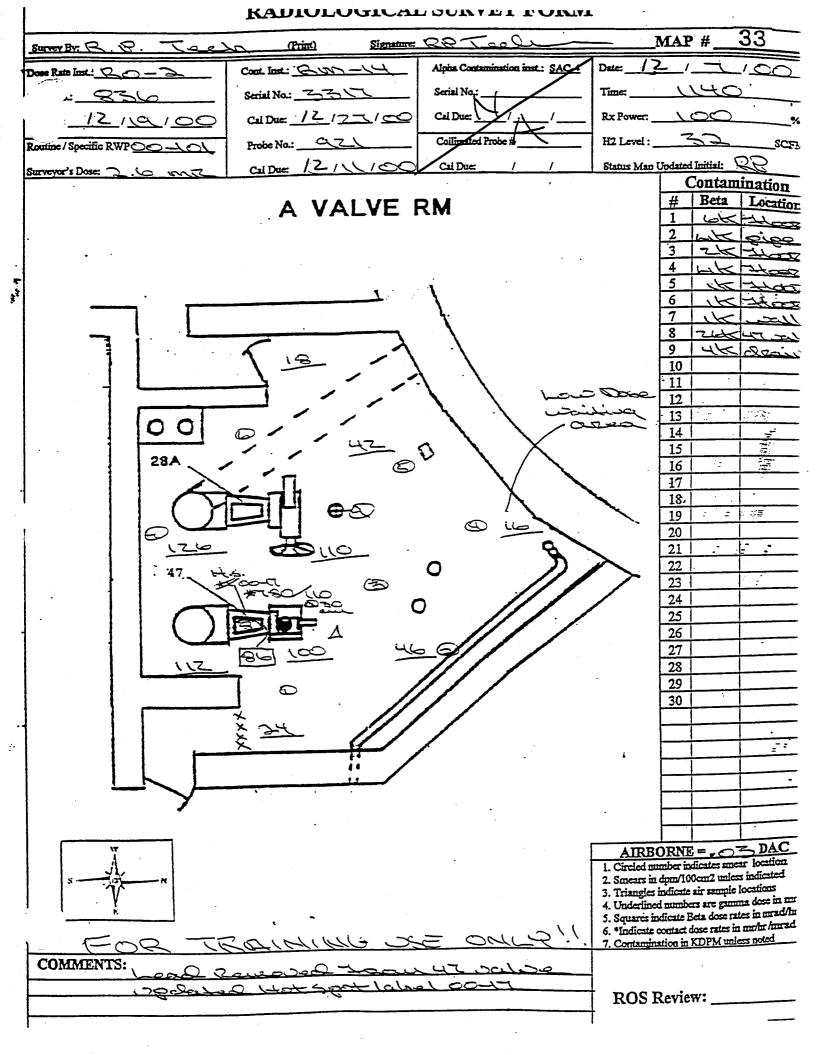

Answer:

Caution (or Danger), High Radiation Area (0.33)
Caution, Contaminated Area (0.33)
RWP Required For Entry (0.33)

Open Reference

Reference: PNPS 6.1-025 Rev. 8 Section 3.0 Definition of Contaminated Area and High Radiation Area, Section 8.2 and 8.8

K/A: 2.3.10 2.9/3.3

RADIOLOGICAL SURVEY FORM

MAP # 33

Survey By: R. P. Tech (Print)	Signature: RP Tech

Dose Rate Inst.: RO-2	Cont. Inst.: RM-14	Alpha Contamination inst.: SAC
~ 836	Serial No.: 3317	Serial No.:
12/19/00	Cal Due: 12/23/00	Cal Due: / /
Routine / Specific RWP 00-101	Probe No.: 921	Collimated Probe #
Surveyor's Dose: 2.6 mr	Cal Due: 12/11/00	Cal Due: / /

Date: 12/7/00		
Time: 1140		
Rx Power: 100 %		
H2 Level: 32 SCFH		
Status Map Updated Initial: RR		

A VALVE RM

Contamination

#	Beta	Location
1	6K	floor
2	6K	pipe
3	2K	floor
4	6K	floor
5	1K	floor
6	1K	floor
7	1K	wall
8	2K x 4?	floor
9	4K	drain
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		
23		
24		
25		
26		
27		
28		
29		
30		

Low Dose
waiting
area

28A

47

AIRBORNE = .03 DAC
1. Circled number indicates smear location
2. Smears in dpm/100cm2 unless indicated
3. Triangles indicate air sample locations
4. Underlined numbers are gamma dose in mr
5. Squares indicate Beta dose rates in mrad/hr
6. *Indicate contact dose rates in mr/hr /mrad
7. Contamination in KDPM unless noted

FOR TRAINING USE ONLY!!!

COMMENTS: Lead removed from 47 valve
isolated Hot Spot label 00-17

ROS Review: _____

Radiation Work Permits
Admin Question #2:

Under what conditions may a General RWP be used for access to a High Radiation Area?

Answer:

Operator Rounds (operator assigned to Radwaste inclusive) or inspections (0.5)

Radiation Protection entries and surveys (0.5)

Open Reference

Reference: 6.1-031 Rev. 7 Page 8

K/A: 2.3.10 2.9/3.3

Job Performance Measure
Worksheet

Facility: Pilgrim   Task No: 015-05-05-003

Task Title: Perform Dose Assessment Using   JPM No: ADMIN 5
             DAPAR Software, V2.0

K/A Reference: 295038   4.2/4.4 EK1.02   Position: RO/SRO

Examinee: _____   NRC Examiner: _____

Date: _____

Method of testing:

Simulated Performance _____   Actual Performance_____✓_____

Classroom _____   Simulator____✓____   Plant_____

Read to the Examinee:

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

Initial Conditions:
- A General Emergency has been declared following a LOCA.
- The reactor has been shut down for 2 hours.
- Time and date is what it is and it is a sunny day.
- The release path is through the main stack.

Task Standard: Protective Action Recommendations shall be completed without assistance using the DAPAR software. The dose assessment shall be accomplished in accordance with EP-IP-300. There shall be no failure of critical elements. Critical steps must be performed in order. Other steps may be performed out of sequence.

Required Materials: None

Note: As part of the setup for the JPM, enter the data on Attachment 1 into the simulator.

General References: PNPS EP-IP-300, Rev. 3

Initiating Cue: "[Operator's name], perform an offsite dose assessment using the DAPAR computer software in accordance with EP-IP-300. Utilize the available Met tower and Main Stack high range effluent monitor data from panel C-170 to perform your dose assessment, and ignore all other simulator conditions. Obtain a printout of the dose assessment and inform me when you have determined if any subareas are required to be evacuated based on the dose assessment".

Time Critical Task: No
Validation Time: 10 Minutes

1

PERFORMANCE INFORMATION
(Critical steps denoted with a check mark)

_____ **Performance Step 1:** Operator reviews the applicable sections of the procedure.

Standard: Section 5.0 of EP-IP-300 reviewed.

Comment:

_____ **Performance Step 2:** Operator verifies the monitor is on, or turns on the monitor.

Standard: Power light on the monitor is illuminated.

Comment:

_____ **Performance Step 3:** Operator verifies the printer is connected to the computer and is turned on, or connects the printer to the computer and turns on the printer.

Standard: Power on light on the printer is illuminated and printer is connected to the computer.

Comment:

_____ **Performance Step 4:** Operator verifies a mouse is connected to the computer, or connects a mouse or other pointing device to the computer.

Standard: Mouse is connected to the computer.

Comment:

_____ **Performance Step 5:** Operator verifies the keyboard is connected to the computer, or connects the keyboard to the computer.

Standard: Keyboard is connected to the computer.

Comment:

_____ **Performance Step 6:** Operator verifies no floppy disks are inserted into the A drive, or removes any floppy disks in the A drive.

Standard: No floppy disks are in the A drive.

Comment:

__✓__ **Performance Step 7:** Operator turns the computer on, if it is not already on, pushes Control, Alt., and Delete (if required), double clicks on the mouse on the DAPAR V2.0 icon.

Standard: Computer is on. User logon window appears, DAPAR is started.

Comment:

__✓__ **Performance Step 8:** Operator selects 'Quick Assessment' option.

Standard: Quick Assessment screen appears.

Comment:

✓   **Performance Step 9:** Operator enters the following information to complete the Quick Assessment screen:

Monitor	(Main Stack)
Range	(High Range)
Monitor Reading	(1000 R/hr.) – C170
Vent Flow Rate	(4000 scfm) appears automatically
Hours After S/D	(2:30) Initial condition
Tower Used	(220') appears automatically
Wind Speed	(10 MPH +/- 5 MPH) – Met tower panel
Wind Direction	(From 160 +/-10) – Met tower panel
Delta T	(2.0°F +/-.5) – Met tower panel
Stability Class	(F) will appear automatically (E) may appear depending on ΔT
Weather Conditions	- Time of Year <u>Off-season</u>
	- Time of Week <u>Midweek</u>
	- Time of Day <u>Midday</u>
	- Conditions <u>Good</u>
Release Duration	(5:45) will automatically appear

Standard: Operator inputs data correctly and DAPAR software accepts the above information until the PARs Command Button is enabled.

Comment:

✓   **Performance Step 10:** Operator clicks on the PARs Command Button.

Standard: Protective Action Recommendation screen appears.

Comment:

✓   **Performance Step 11:** Operator clicks on the print command button.

Standard: Protective Active Recommendations come out of the printer.

Comment:

4

PERFORMANCE INFORMATION
(Critical steps denoted with a check mark)

___✓___ **Performance Step 12:** Operator determines sub-areas 1, 4, 9, 10, 12 require evacuation.

Standard: Sub-areas 1, 4, 9, 10, 12 are recommended for evacuation.

Comment:

Terminating Cue: When the candidate has made his/her recommendation, the examiner will inform the candidate that the task is complete.

ATTACHMENT 1

METEOROLOGICAL AND RADIOLOGICAL DATA FOR DOSE ASSESSMENT

- **RM-1705-18A, Stack Gas MON #1 (RM02) Upscale**

- **RM-1705-18B, Stack Gas MON #2 (RM02) Upscale**

- **RT-1001-608, Main Stack Gas (RM02) to a value of 1000R/Hr**

- **Tower Used**   **I/O: 220'**

- **Wind Speed**   **I/O: 10 MPH**

- **Wind Direction**   **I/O: 160° at 220'**

- **MT1 Temp Recorder Point 1 (Delta 'T')**   **I/O: 2.0°F**

- **MT1 Temp Recorder Point 2**   **I/O: 78°F**

VERIFICATION OF COMPLETION

JPM No.: _____

Examinee's Name:_____

Examiner's Name:_____

Date performed:_____

Number of attempts:_____

Time to complete:_____

Question Documentation:

Question: _____

_____

_____

Response: _____

_____

_____

Result: **SAT** or **UNSAT**

Examiner's signature and date: _____ _____

Job Performance Measure
Quality Checklist

Every JPM should:

1. ___✓___   Be supported by facility licensee's job task analysis.

2. ___✓___   Be operationally important (meets NRC K/A Catalog threshold criterion of 2.5 (3 for requalification exams) or as determined by the facility and agreed to by the NRC).

3. ___✓___   Be designed as either SRO only, RO/SRO or AO/RO/SRO.

4.   Include the following, as applicable:

     a. ___✓___   Initial conditions

     b. ___✓___   Initiating cues

     c. ___✓___   References and tools, including associated procedures

     d. ___✓___   Validated time limits (average time allowed for completion) and specific designation of those JPMs that are deemed to be time-critical by the facility operations department

     e. ___✓___   Specific performance criteria that include:

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         (3) ___✓___   Statements describing important observations that should be made by the examinee

         (4) ___✓___   Criteria for successful completion of the task

         (5) ___✓___   Identification of those steps that are considered critical

         (6) ___✓___   Restrictions on the sequence of steps

Initial Conditions:
- A General Emergency has been declared following a LOCA.
- The reactor has been shut down for 2 hours.
- Time and date is what it is and it is a sunny day.
- The release path is through the main stack.

Initiating Cue: "[Operator's name], perform an offsite dose assessment using the DAPAR computer software in accordance with EP-IP-300. Utilize the available Met tower and Main Stack high range effluent monitor data from panel C-170 to perform your dose assessment, and ignore all other simulator conditions. Obtain a printout of the dose assessment and inform me when you have determined if any subareas are required to be evacuated based on the dose assessment".