

Document Transmittal Form

To: NRC WASHINGTON
DOCUMENT CONTROL DESK
WASHINGTON, DC 20555

ID: EPIP059

Date: 20000914

Please update your controlled set of documents with the following list of documents:

Document ID	Revision	Status	Quantity	Format	RecNo
PRC EPIP-TOC-COMMON 000	7	A	1	H	80144
PRC NC.EP-EP.ZZ-0201 000	1	A	1	H	80199
PRC NC.EP-EP.ZZ-0203 000	1	A	1	H	80248
PRC NC.EP-EP.ZZ-0302 000	2	A	1	H	80346
PRC NC.EP-EP.ZZ-0303 000	1	A	1	H	80395
PRC NC.EP-EP.ZZ-0304 000	2	A	1	H	80444
PRC SC.EP-EP.ZZ-0301 000	1	A	1	H	80297

This acknowledgement receipt must be returned within 5 working days to:

Document Management:
PSEG Nuclear
BOX 236
Hancocks's Bridge, NJ 08038

MC N04

Your signature below verifies that:

(1) the above documents have been filed and superseded documents have been removed and destroyed or clearly marked as obsolete.

(2) the mailing address and copy holder information are correct or corrections have been identified on this transmittal.

Place checkmark here to remove from controlled distribution

Signature: _____

Date: _____

A045

PSEG NUCLEAR
 ONSITE IMPLEMENTING PROCEDURES
 September, 14 2000

PSE&G
 CONTROL
 COPY # EPIP059

CHANGE PAGES FOR
 REVISION #07

The Table of Contents forms a general guide to the current revision of each section of the Onsite EIPs. The changes that are made in this TOC Revision #07 are shown below. Please check that your revision packet is complete and remove the outdated material listed below:

ADD			REMOVE		
Page	Description	Rev.	Page	Description	Rev.
ALL	TOC	07	ALL	TOC	06
All	NC.EP-EP.ZZ-0201	01	All	NC.EP-EP.ZZ-0201	00
All	NC.EP-EP.ZZ-0203	01	All	NC.EP-EP.ZZ-0203	00
All	SC.EP-EP.ZZ-0301	01	All	SC.EP-EP.ZZ-0301	00
All	NC.EP-EP.ZZ-0302	02	All	NC.EP-EP.ZZ-0302	01
All	NC.EP-EP.ZZ-0303	01	All	NC.EP-EP.ZZ-0303	00
All	NC.EP-EP.ZZ-0304	02	All	NC.EP-EP.ZZ-0304	01

Please note:

Different color tabs are being provided with this distribution. The green tabs are for the SC.EP-EP (Salem) procedures, the blue tabs are being provided for the HC.EP-EP (Hope Creek) procedures. Please remove the old tabs and replace with new color tabs. Ensure the Salem procedures are with the green tab and the Hope Creek procedures are with the blue tab.

GREEN TABS

EPIP 204S
 SC.EP-EP.ZZ-0205
 SC.EP-EP.ZZ-0301

BLUE TABS

EPIP 204H
 HC.EP-EP.ZZ-0205
 HC.EP-EP.ZZ-0301

PSEG NUCLEAR LLC
EMERGENCY PLAN ONSITE IMPLEMENTING PROCEDURES
TABLE OF CONTENTS
September 14, 2000

PSE&G
CONTROL
COPY # EPIP059

STATION PROCEDURES

		<u>Revision</u> <u>Number</u>	<u>Number</u> <u>Pages</u>	<u>Effective</u> <u>Date</u>
NC.EP-EP.ZZ-0101(Q)	ACTIONS REQUIRED AT UNAFFECTED STATION	00	12	02/29/2000
NC.EP-EP.ZZ-0102(Q)	EMERGENCY COORDINATOR RESPONSE	02	19	06/29/2000
NC.EP-EP.ZZ-0201(Q)	TSC - INTEGRATED ENGINEERING RESPONSE	01	24	09/14/2000
NC.EP-EP.ZZ-0202(Q)	OPERATIONS SUPPORT CENTER (OSC) ACTIVATION AND OPERATIONS	00	29	02/29/2000
NC.EP-EP.ZZ-0203(Q)	ADMINISTRATIVE SUPPORT/ COMMUNICATION TEAM RESPONSE - TSC	01	14	09/14/2000
EPIP 204H	EMERGENCY RESPONSE CALLOUT/PERSONNEL RECALL	48	31	8/9/2000
EPIP 204S	EMERGENCY RESPONSE CALLOUT/PERSONNEL RECALL	48	31	8/9/2000
HC.EP-EP.ZZ-0205(Q)	TSC - POST ACCIDENT CORE DAMAGE ASSESSMENT	01	39	04/10/2000
SC.EP-EP.ZZ-0205(Q)	TSC - POST ACCIDENT CORE DAMAGE ASSESSMENT	00	80	02/29/2000
HC.EP-EP.ZZ-0301(Q)	SHIFT RADIATION PROTECTION TECHNICIAN RESPONSE	01	21	03/29/2000

PSEG NUCLEAR LLC
EMERGENCY PLAN ONSITE IMPLEMENTING PROCEDURES
TABLE OF CONTENTS
September 14, 2000

		<u>Revision Number</u>	<u>Number Pages</u>	<u>Effective Date</u>
SC.EP-EP.ZZ-0301 (Q)	SHIFT RADIATION PROTECTION TECHNICIAN RESPONSE	01	34	09/14/2000
NC.EP-EP.ZZ-0302 (Q)	RADIOLOGICAL ASSESSMENT COORDINATOR RESPONSE	02	19	09/14/2000
NC.EP-EP.ZZ-0303 (Q)	CONTROL POINT - RADIATION PROTECTION RESPONSE	01	25	09/14/2000
NC.EP-EP.ZZ-0304 (Q)	OPERATIONS SUPPORT CENTER (OSC) RADIATION PROTECTION RESPONSE	02	20	09/14/2000
NC.EP-EP.ZZ-0305 (Q)	POTASSIUM IODIDE (KI) ADMINISTRATION	00	10	02/29/2000
NC.EP-EP.ZZ-0306 (Q)	EMERGENCY AIR SAMPLING	00	12	02/29/2000
NC.EP-EP.ZZ-0307 (Q)	PLANT VENT SAMPLING	00	13	02/29/2000
NC.EP-EP.ZZ-0308 (Q)	PERSONNEL/VEHICLE SURVEY AND DECONTAMINATION	00	16	02/29/2000
NC.EP-EP.ZZ-0309 (Q)	DOSE ASSESSMENT	00	78	02/29/2000
NC.EP-EP.ZZ-0310 (Q)	RADIATION PROTECTION SUPERVISOR - OFFSITE AND FIELD MONITORING TEAM RESPONSE	01	65	03/29/2000
NC.EP-EP.ZZ-0311 (Q)	CONTROL POINT - CHEMISTRY RESPONSE	00	18	02/29/2000
NC.EP-EP.ZZ-0312 (Q)	CHEMISTRY SUPERVISOR - CP/TSC RESPONSE	01	26	03/29/2000

CONTROL

TSC - INTEGRATED ENGINEERING RESPONSE

COPY # EPIPO59

USE CATEGORY: II

REVISION SUMMARY:

Biennial Review Yes X No

All revisions are editorial in nature.

Attachment 9 - Added to start monitoring Spent Fuel Pool temperature at 125° F
- Changed the reference from EPIP 1013 to NC-EP.WB-ZZ-0001(Z) - EP Phone # directory.

Revised EP manager's title to Manager - EP & IT

Reference to the NBU Emergency Plan has been changed to the PSEG Emergency Plan

Attachment titles were changed to agree with the TOC.

IMPLEMENTATION REQUIREMENTS

Effective DATE 9/14/00

APPROVED:

James J. Miller (R. Becke) for D. MILLER
Manager - EP & IT

07/31/2000
Date

TSC – INTEGRATED ENGINEERING RESPONSE

TABLE OF CONTENTS

<u>Section</u>	<u>Title</u>	<u>Page</u>
1.0	PURPOSE.....	2
2.0	PREREQUISITES	2
2.1	Prerequisites To Be Followed Prior To Implementing This Procedure	2
3.0	PRECAUTIONS AND LIMITATIONS	2
3.1	Precautions and Limitations To Be Followed Prior To Implementing This Procedure:.....	2
4.0	EQUIPMENT REQUIRED	2
5.0	PROCEDURE	3
5.1	The Technical Support Supervisor (TSS) Should Perform The Following:	3
6.0	RECORDS	3
7.0	REFERENCES.....	3
7.1	References	3
7.2	Cross-References.....	3

ATTACHMENTS

ATTACHMENT 1	TECHNICAL SUPPORT SUPERVISOR CHECKLIST	4
ATTACHMENT 2	TURNOVER LOG - TECHNICAL SUPPORT SUPERVISOR (TSS)	7
ATTACHMENT 3	TSC ENGINEERING TASK ASSIGNMENT LOG	8
ATTACHMENT 4	TSC TECHNICAL SUPPORT TRACKING FORM.....	9
ATTACHMENT 5	POST ACCIDENT LOW PRESSURE INJECTION MONITORING (SALEM ONLY).....	10
ATTACHMENT 6	ADVERSE CONTAINMENT MONITORING (SALEM ONLY).....	15
ATTACHMENT 7	DIESEL GENERATOR LOAD MONITORING (SALEM ONLY).....	16
ATTACHMENT 8	MAINTENANCE OF FUEL OIL TO SALEM EDG (SALEM ONLY)	17
ATTACHMENT 9	TECHNICAL SUPPORT TEAM LEADER CHECKLIST	19
ATTACHMENT 10	TURNOVER LOG - TECHNICAL SUPPORT TEAM LEADER	22
ATTACHMENT 11	CORE THERMAL HYDRAULICS ENGINEER CHECKLIST	23
ATTACHMENT 12	NUCLEAR FUELS ENGINEER CHECKLIST.....	24

1.0 **PURPOSE**

This procedure provides guidance to emergency response personnel for administration of TSC Integrated Engineering Response during an emergency at Hope Creek or Salem Nuclear Generating Stations.

2.0 **PREREQUISITES**

2.1 **Prerequisites To Be Followed Prior To Implementing This Procedure**

2.1.1 ___ Implement this procedure at:

- The discretion of Technical Support Supervisor (TSS), Technical Support Team Leader (TSTL), or Technical Support Team Member (TSTM).
- Upon staffing of your Emergency Response Facility.

3.0 **PRECAUTIONS AND LIMITATIONS**

3.1 **Precautions and Limitations To Be Followed Prior To Implementing This Procedure:**

3.1.1 It is recommended that initials be used in the place keeping sign-offs, instead of checkmarks.

3.1.2 Personnel who implement this procedure shall be trained and qualified IAW the Emergency Plan.

4.0 **EQUIPMENT REQUIRED**

As provided in the Emergency Response Facility.

5.0 **PROCEDURE**

NOTE:
 The OS or EDO may require Engineering support prior to TSC activation.
 Precautionary **MANNING** of the TSC with key engineering support personnel
 does **NOT** require **ACTIVATION** of the TSC.

Initials

5.1 **The Technical Support Supervisor (TSS) Should Perform The Following:**

5.1.1 ___ DIRECT the TSTL to Implement Attachment 9,
 TSTL Checklist. _____

5.1.2 ___ IMPLEMENT Attachment 1, TSS Checklist. _____

6.0 **RECORDS**

Forward all completed procedures, forms and attachments to the Manager –EP & IT.

7.0 **REFERENCES**

7.1 **References**

7.1.1 ___ PSEG Nuclear Emergency Plan

7.1.2 ___ EP 96-02 post-OBE spent fuel pool rack gap evaluation

7.1.3 ___ EP 99-01 Monitor the spent fuel pool temperature

7.1.4 ___ EP 96-01 Monitoring Salem diesel generator fuel oil

7.2 **Cross-References**

None

ATTACHMENT 1
Page 1 of 3

TECHNICAL SUPPORT SUPERVISOR CHECKLIST

The Technical Support Supervisor (TSS) shall:

NOTE

Should the EDO/ERM be unable to fulfill the duties of Emergency Coordinator (EC) for any reason (e.g., sudden illness, accident, etc.) the Technical Support Supervisor (TSS) or Site Support Manager (SSM) may assume the duties and responsibilities of EC until another qualified EDO/ERM arrives at the facility. The TSS or SSM position must be filled by another individual.

NOTE

SALEM – Refer to page 3 of this attachment for additional actions required at Salem Station

- | | <u>Initials</u> |
|--|-----------------|
| 1. ASSUME Command and Control of the TSC facility until relieved by the EDO. | _____
TSS |
| 2. ASSUME Supervision of the Technical Support Team. | _____
TSS |
| 3. INITIATE and maintain a chronological log of your activities. | _____
TSS |
| 4. ESTABLISH communications with the Control Room(Ops Advisor) and obtain as a minimum the following information on a routine basis: | |
| A. Overall plant status to include: | |
| 1. Fission Product Boundary Integrity | |
| 2. Major equipment availability | |
| 3. Electrical system line up and power sources | |
| 4. Radiation Monitoring system parameters (SPDS, RM-11) | |
| 5. Implementation of Emergency, Abnormal, or Integrated Operating Procedures | |
| | _____
TSS |

ATTACHMENT 1
Page 2 of 3

TECHNICAL SUPPORT SUPERVISOR CHECKLIST

Initials

5. NOTIFY the EDO when staffing is adequate to perform the technical support functions. Request the Admin. Support Supervisor to callout additional personnel as required.

TSS

6. PROVIDE assistance to the Emergency Duty Officer (EDO) in plant status and direction, Event Classification, Protective Action Recommendations (PARs) and any other activities as required.

TSS

7. COMPLETE the Task Assignments using Attachment 4, TSC Technical Support Tracking Form, and provide to the TSTL for implementation.

TSS

8. REVIEW all completed Attachment 4, TSC Technical Support Tracking Forms. Forward to the EDO for review.

TSS

9. REVIEW as appropriate, procedures being implemented by the Control Room and periodically brief the EDO and the TSTL on:

- Support that may be required by the OS.
- Any projected problems or areas of concern.
- Overall direction in which the Control Room is proceeding.
- Status of the Control Room implementation of EOP, AOP, and IOPs.
- Status of engineering recommendations provided to the OS.

TSS

10. IF a radiological release is imminent or in progress, THEN place the TSC Emergency Ventilation System in service in the pressurized mode:

TSS

HOPE CREEK

SALEM

Place the TSC Mode Control Switch (HC-9764) to PRESS (local Panel 10N211 at Central Alarm Station).

Direct a TSTM to place the TSC Ventilation System in Emergency Operation, IAW SC.OP-SO.TSC-0051 Section 5.3, Operation During High Radiation Conditions.

ATTACHMENT 1
Page 3 of 3
TECHNICAL SUPPORT SUPERVISOR CHECKLIST

Initials

11. IF smoke or toxic gases are detected in the TSC air supply, THEN place the TSC Emergency Ventilation System in service in the recirculation mode:

TSS

HOPE CREEK

SALEM

Place the TSC Mode Control Switch (HS-9764) to RECIRC (local Panel 10N211 at Central Alarm Station).

Direct a TSTM to place the TSC Ventilation System in Emergency Operations IAW SC.OP-SO.TSC-0051 Section 5.4, Operation During Chemical Release.

12. WHEN the TSC Emergency Filtration System is no longer required, THEN request operations to return the TSC ventilation to normal alignment IAW:

TSS

HOPE CREEK

SALEM

HC.OP-SO.GR-0001(Z)

SC.OP-SO.TSC-0051

13. ESTABLISH communications with the Site Support Manager (SSM) at the EOF and provide periodic updates on the plant status.

TSS

14. IF vendor assistance is required, THEN direct the TSTL to contact the Technical Support Manager at the EOF and request they provide the necessary support.

TSS

15. COMPLETE Attachment 2, Turnover Log - TSS Checklist when being relieved.

TSS

16. AT the conclusion of the event, THEN insure that the TSC area is returned to ready status and all paperwork related to the event is collected and forwarded to the Emergency Preparedness Manager.

TSS

SALEM ONLY

1. IF R44A or R44B Dose Rate is $\geq 1.0E+04$ R/Hr, THEN Implement Adverse Containment Monitoring in accordance with Attachment 6 of this procedure.

TSS

2. WHEN the plant is placed in the "Recirculation Mode"(i.e., RHR suction is aligned to the containment sump) THEN direct the TSTL to implement Attachment 5 of this procedure, Post Accident Low Pressure Injection Monitoring.

TSS

ATTACHMENT 2
Page 1 of 1

TURNOVER LOG - TECHNICAL SUPPORT SUPERVISOR (TSS)

Date: ____ / ____ / ____

1. [UE] [A] [SAE] [GE] was declared @ _____ hrs. on ____ / ____ / ____

Due to: _____

2. The present classification, [A] [SAE] [GE] was declared @ _____ was declared
 _____ hrs. on ____ / ____ / ____

3. The Emergency Coordinator (EC) is _____
 in the [EOF] [TSC] _____ name

4. The Oncoming and Offgoing TSS should:

- | | Initials |
|--|-------------|
| | On / Off |
| A. DISCUSS current conditions. Include any problems encountered or anticipated, and any ongoing, or expected actions. | ____ / ____ |
| B. REVIEW all applicable documentation including procedures, logs, etc., ensuring they are completed, correct and signed. | ____ / ____ |
| C. DISCUSS the TSC's priorities, personnel requirements and any support or material needs. | ____ / ____ |
| D. DISCUSS any Radiological, Safety, or Environmental concerns. | ____ / ____ |
| E. INSURE that technical support assignments are completed or reassigned as necessary. | ____ / ____ |
| F. NOTIFY the TSTL and the EDO of the change in command of the TSS. Update plant status and priorities as applicable. | ____ / ____ |
| G. As soon as possible, the oncoming TSS shall hold a briefing with the oncoming TSTL and TSTM's to insure a smooth transition between the oncoming and off going TSC personnel. | ____ / ____ |

 Oncoming TSS signature Time Offgoing TSS signature

ATTACHMENT 3

Page 1 of 1

TSC ENGINEERING TASK ASSIGNMENT LOG

DATE: _____

PAGE _____ OF _____

TASK #	TASK ASSIGNMENT TITLE (BRIEF DESCRIPTION)	ASSIGNED TO (NAME)	COMMENTS / REMARKS/ PROBLEMS	CHECK APPROPRATE STATUS
				<input type="checkbox"/> HOLD <input type="checkbox"/> FORWARD <input type="checkbox"/> IN PROGRESS <input type="checkbox"/> COMPLETE
				<input type="checkbox"/> HOLD <input type="checkbox"/> FORWARD <input type="checkbox"/> IN PROGRESS <input type="checkbox"/> COMPLETE
				<input type="checkbox"/> HOLD <input type="checkbox"/> FORWARD <input type="checkbox"/> IN PROGRESS <input type="checkbox"/> COMPLETE
				<input type="checkbox"/> HOLD <input type="checkbox"/> FORWARD <input type="checkbox"/> IN PROGRESS <input type="checkbox"/> COMPLETE
				<input type="checkbox"/> HOLD <input type="checkbox"/> FORWARD <input type="checkbox"/> IN PROGRESS <input type="checkbox"/> COMPLETE
				<input type="checkbox"/> HOLD <input type="checkbox"/> FORWARD <input type="checkbox"/> IN PROGRESS <input type="checkbox"/> COMPLETE

ATTACHMENT 3

NC-EP-EP-ZZ-0201(Q)

NOTE: TSTL – maintain this rooster as a formal document of engineering Assignments and keeping others informed of activities in progress.

ATTACHMENT 4
Page 1 of 1
TSC TECHNICAL SUPPORT TRACKING FORM

<u>TASK ASSIGNMENT:</u> (DESCRIPTION, BRIEF)					<u>TASK #</u>
<u>REQUESTED BY:</u> (CIRCLE ONE) TSTL/SSM	<u>ASSIGNED TO:</u>	<u>TIME/DATE:</u>			
<u>ENGINEERING RESPONSE/RECOMMENDATION:</u>					
<u>REVIEW:</u> TIME: INITIALS:	TSTL*	TSS	EDO	OS**	<u>DISPOSITION</u> <input type="checkbox"/> Implement <input type="checkbox"/> Hold <input type="checkbox"/> Reject

* RETAIN A COPY OF THIS DOCUMENT FOR FUTURE REFERENCE

**ALL CORRECTIVE ACTIONS IMPLEMENTED IN THE PLANT MUST BE APPROVED BY THE OS.

ATTACHMENT 5
Page 1 of 5

POST ACCIDENT LOW PRESSURE INJECTION MONITORING (SALEM ONLY)

1. Action Level

RHR lined up for suction from the Containment Sump in a post accident situation.

2. Action Statements

THE TECHNICAL SUPPORT TEAM LEADER SHALL:

- | | <u>Initials</u> |
|---|-----------------|
| 2.1 Request the OS to have the ECCS Pump Performance Analysis Log (Attachment 5, page 2), completed hourly and provided (FAXED) to the TSTL for review. | <u>TSTL</u> |
| 2.2 Evaluate data (see pump curves in Attachment 5) and inform TSS of any unsatisfactory pump performance and any recommended corrective actions. | <u>TSTL</u> |

SALEM UNIT # _____
 ECCS PUMP PERFORMANCE ANALYSIS LOG

NOTE: CIRCLE ALL UNSATISFACTORY INDICATIONS AND NOTIFY THE TSS/EDO.

DATE: _____

INSTRUMENT NO.	INDICATIONS (HOURLY)			TIME						
	PARAMETER	MIN	MAX							
LA 2445	CONT SUMP LEVEL (%)	41	86							
PA 5511	CONT. PRESSURE (PSIG)	-3	+47							
PI 942	BIT PRESSURE (PSIG)	440 (1 PUMP)	2500 (2 PUMPS)							
IA 5310	#1 CH. PUMP AMPS	49	84							
IA 5311	#2 CH. PUMP AMPS	49	84							
FI 917	CH. PUMP FLOW (TOTAL) (GPM)	0 (1 PUMP)	780 - 830 (2 PUMPS)							
FI 128b	SEAL INJECTION FLOW (GPM)	0	78							
PI 923	#1 SI PUMP DISH PRESS	770	1500							
PI 919	#2 SI PUMP DISH PRESS	770	1500							
IA 5432	#1 SI PUMP AMPS	28	56							
IA 5433	#2 SI PUMP AMPS	28	56							
FI 922	#1 SI PUMP FLOW (GPM) (COLD LEG)	0 (CL)	650 (CL)							
FI 918	#2 SI PUMP FLOW (GPM) (COLD LEG)	0 (CL)	650 (CL)							
PI 635	#1 RHR PUMP DISH PRESS	130	190							
PI 647	#2 RHR PUMP DISH PRESS	130	190							
IA 5001	#1 RHR PUMP AMPS	28	55							
IA 5002	#2 RHR PUMP AMPS	28	55							
FI 946	#1 RHR PUMP FLOW (GPM)	0	5000							
FI 947	#2 RHR PUMP FLOW (GPM)	0	5000							

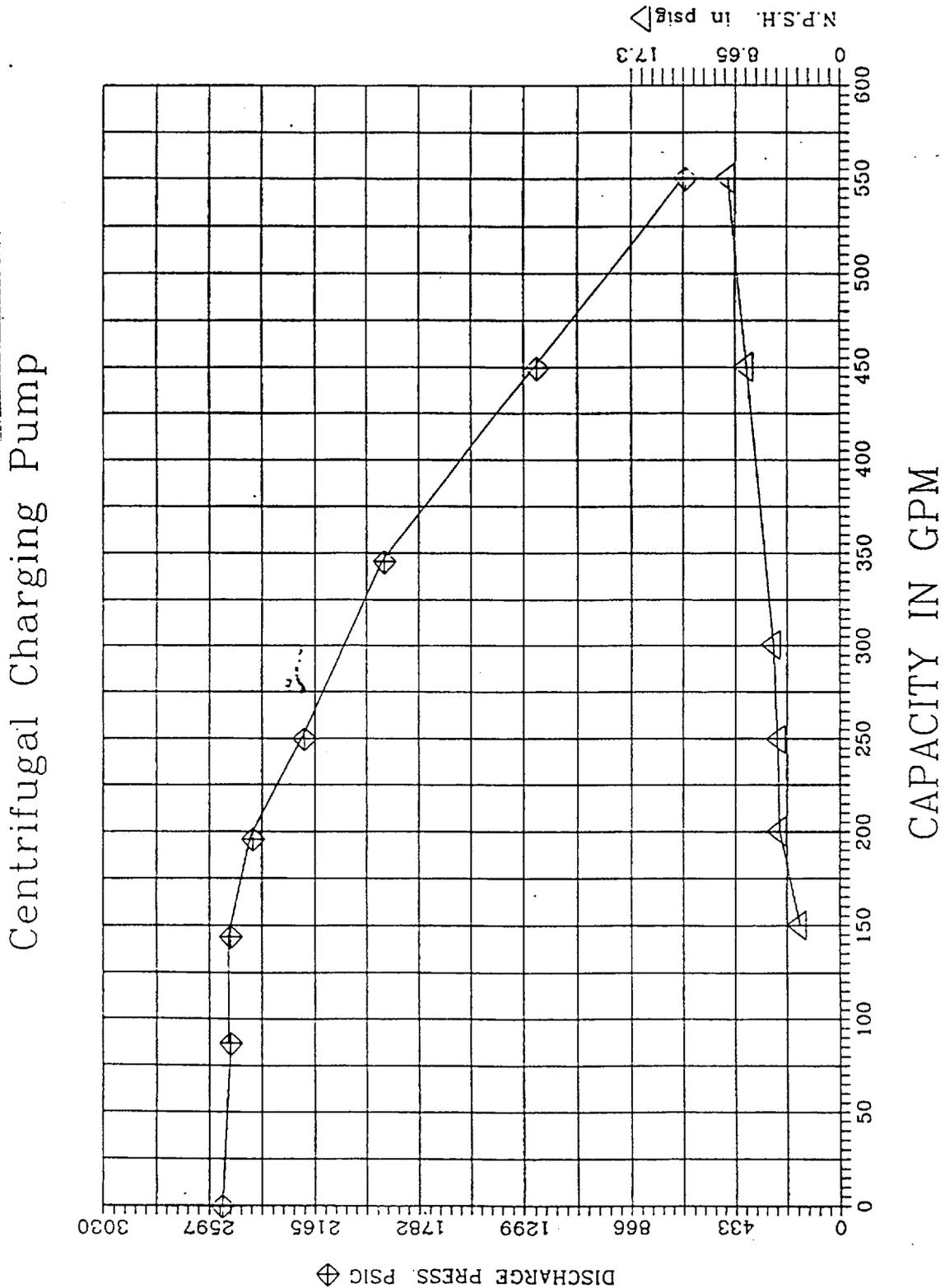
- NOTES:
1. REFERE TO ATTACHED PUMP CURVES FOR CAPACITY VS TOTAL HEAD.
 2. VALIDATE ABNORMAL INDICATIONS BY CORRELATING ALL AVAILABLE DATA.
 3. X-OUT - INDICATIONS FOR NON-RUNNING PUMPS.
 4. CONTROL ROOM STAFF SHOULD TRANSMIT THIS DATA HOURLY TO THE TSS IN THE TSC.

POST ACCIDENT LOW PRESSURE INJECTION MONITORING (SALEM ONLY)

ATTACHMENT 5 (cont.)
 Page 2 of 5

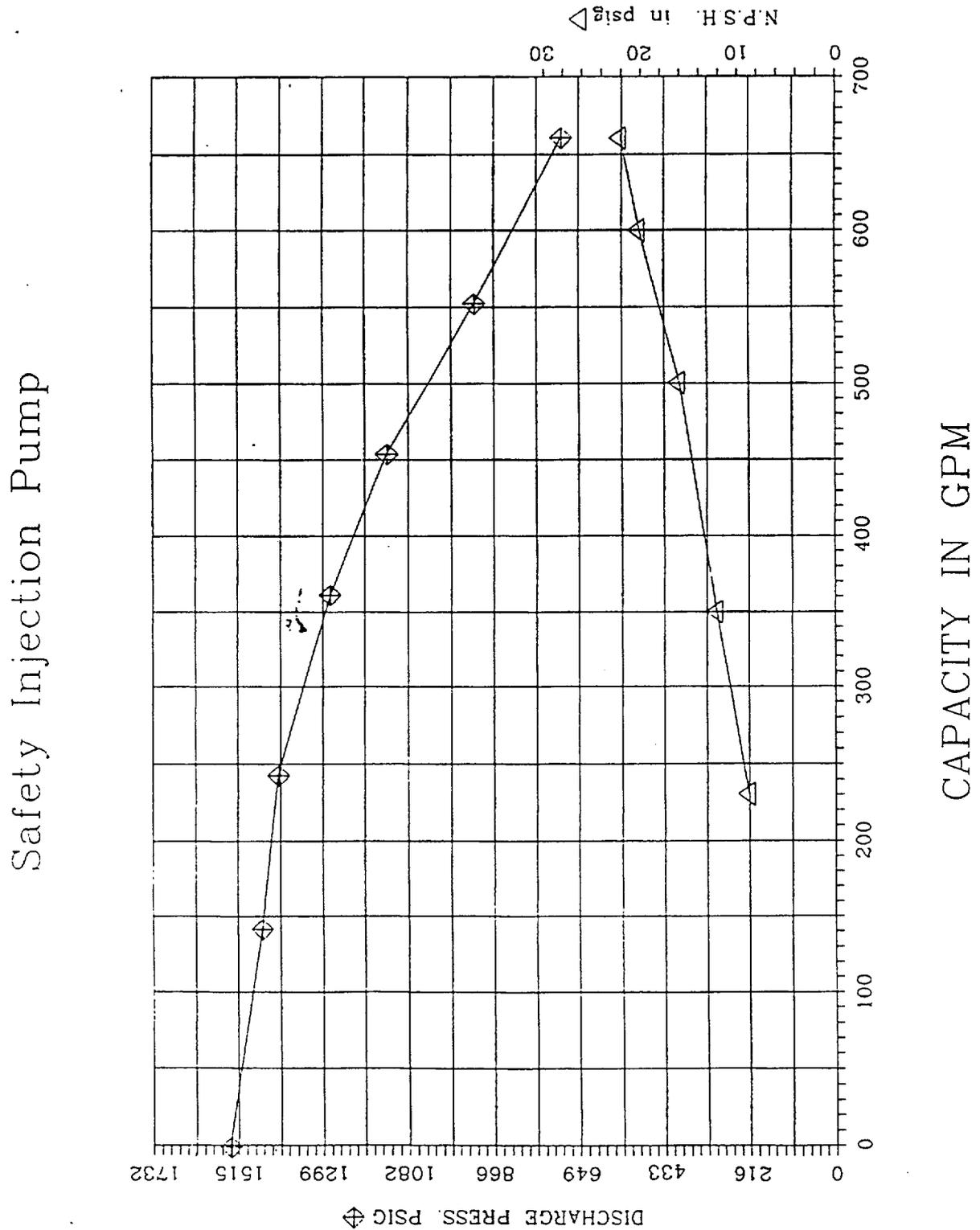
ATTACHMENT 5 (cont.)
Page 3 of 5

POST ACCIDENT LOW PRESSURE INJECTION MONITORING (SALEM ONLY)



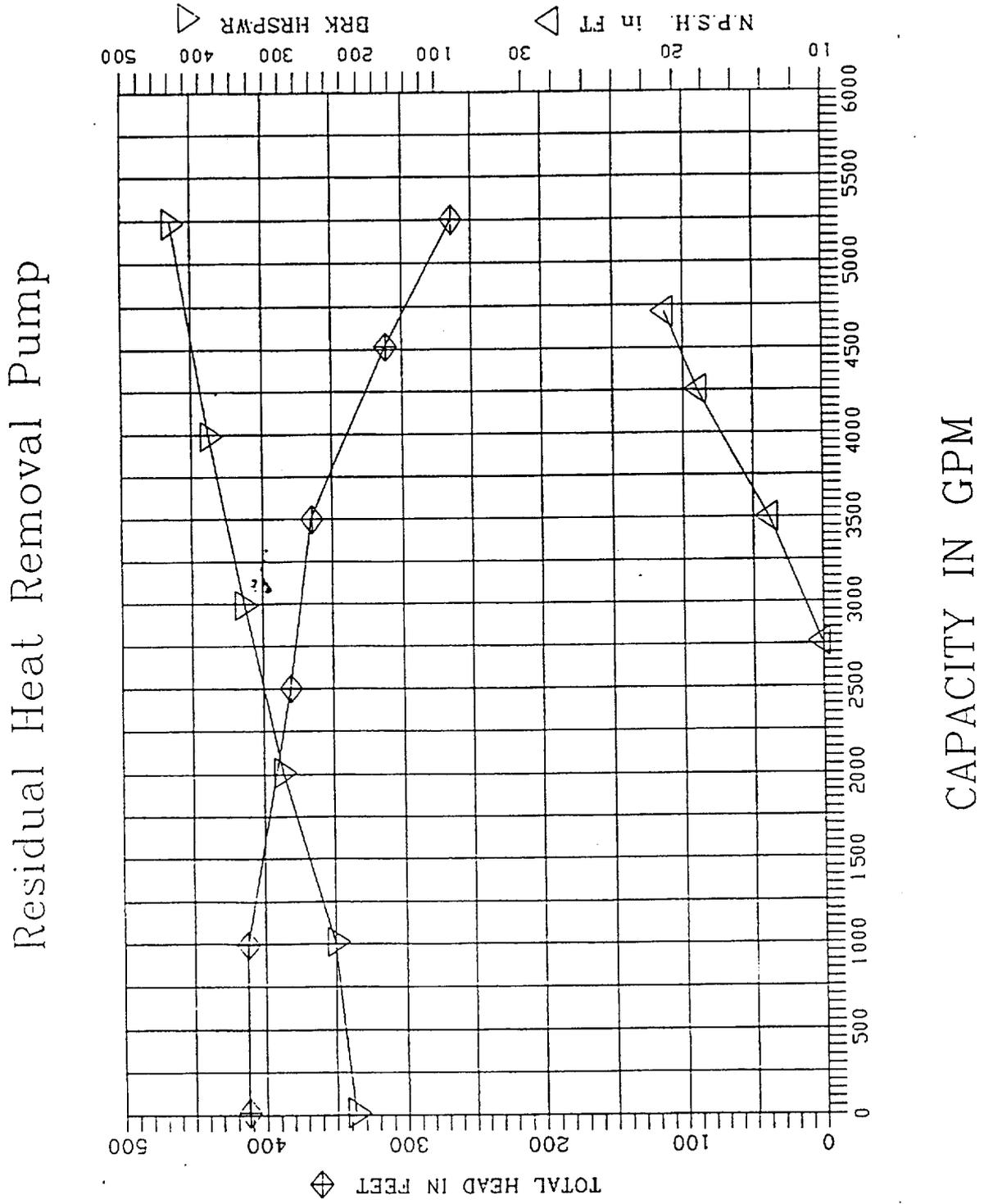
ATTACHMENT 5 (cont.)
Page 4 of 5

POST ACCIDENT LOW PRESSURE INJECTION MONITORING (SALEM ONLY)



ATTACHMENT 5 (cont.)
Page 5 of 5

POST ACCIDENT LOW PRESSURE INJECTION MONITORING (SALEM ONLY)



ATTACHMENT 6

Page 1 of 1

ADVERSE CONTAINMENT MONITORING (SALEM ONLY)

TECHNICAL SUPPORT SUPERVISOR (TSS) SHALL:

1. Monitor (at least once every 30 minutes) the Integrated Dose and Dose Rate in the containment as indicated on Radiation Monitor Locations Display on SPDS and perform the following:

Initial/Time

- a. IF the Dose Rate, as indicated by R44A or R44B, is greater than or equal to 1E5 R/HR (>100,000 R/HR) AND the Integrated Dose as indicated by R44A or R44B is less than 1E6 R, (<1,000,000 R),

THEN

Contact the STA with the above information and inform that Adverse Containment Condition due to high radiation DOES NOT exist and he/she should refer to EOP-CFST-1 for actions required.

_____/_____
TSS Time

- b. IF the Integrated Dose as indicated by R44A or R44B is greater than or equal to 1E6 R (>1,000,000 R),

THEN

Contact STA and notify of the Integrated Dose value and that Adverse Containment Conditions due to high radiation DO exist and he/she should refer to EOP-CFST-1 for action required.

_____/_____
TSS Time

ATTACHMENT 7
Page 1 of 1

DIESEL GENERATOR LOAD MONITORING (SALEM ONLY)

1. EVALUATED loading of any and all running Emergency Diesel Generators against the "Excessive Load Chart" below:

EXCESSIVE LOAD CHART

<i>TIME LIMIT</i>	<i>MAX KW RATING</i>	<i>ASSUMED PF</i>	<i>MAX KVAR RATING</i>	<i>MAX KVA RATING</i>
1/2 HOUR	3100	.8	2325	3875
2 HOURS	2860	.8	2145	3575
2000 HOURS	2750	.8	2063	3438
CONTINUOUS	2600	.8	1950	3250

2. IF the MAXIMUM LOAD RATING IN KW, KVAR, or KVA is exceeded, recommend to the TSS, using a TSC Technical Support Tracking Form (Attachment 4) of this procedure, that unnecessary loads be secured until the load is less than maximum rating.
3. EVALUATE the cumulative loading effects by performing the following calculation:

$$N1/8000 + N2/2000 + N3/730 + N4/.5 = X(\text{effect factor})$$

Where: (run time in hours)

$N1 = \text{Run time} \geq \text{the continuous rating}$
 $N2 = \text{Run time} \geq 2000 \text{ hour rating}$
 $N3 = \text{Run time} \geq 2 \text{ hour rating}$
 $N4 = \text{Run Time} \geq 1/2 \text{ hour rating}$
4. IF the effect factor (X above) is approaching or above 1.0, THEN recommend to the TSS, using TSC Technical Support Tracking Form (Attachment 4) of this procedure, that unnecessary loads be secured. Emergency Diesel Inspection or Overhaul should be considered per manufacture guidance.
5. DISCONTINUE this attachment if no Emergency diesel generators are powering a vital bus.

ATTACHMENT 8
Page 1 of 2

MAINTENANCE OF FUEL OIL TO SALEM EDG(SALEM ONLY)

EP96-001

Initials

1. REVIEW available MAJOR EQUIPMENT AND ELECTRICAL STATUS sheets ELECTRICAL STATUS section and determine current Emergency Diesel Generator (EDG) use. _____
TSTL

2. EVALUATE plant conditions and determine if EDG operations will be required for > 4 hours. _____
TSTL

3. IF EDG operations ARE NOT required for > 4 hours, THEN notify the TSTL that EDG fuel oil maintenance is not required at this time. Continuously monitor plant conditions for changes that may require re-evaluation of step 2 above. _____
TSTL

4. IF EDG operations ARE required for > 4 hours, THEN provide the TSTL with an "TSC Technical Support Tracking Form" requesting the OS to direct the OSC Coordinator to perform the following actions: _____
TSTL
 - A. DETERMINE the status of the 20,000 Barrel Fuel Oil Storage Tank (FOST) and associated transfer piping used to fill the Diesel Fuel Oil Storage Tanks (DFOSTs).

 - B. IF plant conditions preclude Operations Dept. routine checks of DFOST levels at the prescribed frequency (e.g. radiological or higher priority concerns), THEN assemble and dispatch a team to evaluate DFOST inventory.

 - C. IF normal fuel oil transfer capability DOES exist, THEN maintain DFOSTs level greater than Tech Spec limits IAW Operations Dept. Normal Operating Procedures.

 - D. IF normal fuel oil transfer capability DOES NOT exist, THEN request the TSM (NETS 5007) to develop an action plan for alternative EDG fueling methods per TSC Technical Support Tracking Form (Attachment 4) and inform the OS that you have requested EOF Technical Support.

ATTACHMENT 8 (cont.)
Page 2 of 2

MAINTENANCE OF FUEL OIL TO SALEM EDG(SALEM ONLY)

NOTE

Maplewood Lab should be contacted to provide onsite support for fuel oil sampling.

Initials

5. WHEN requested to develop an action plan for alternative EDG fueling methods to the DFOSTs,
THEN implement the following actions:

TSTL

- B. COORDINATE with the EOF Purchasing Support to procure and deliver fuel oil, see note below, from an offsite source and fill the DFOST from the Emergency fill Connection.

NOTE

The following diesel fuel oil suppliers and transport companies have current enforceable contracts with PSE&G for emergency fuel oil supply:

<u>Fuel suppliers</u>	<u>Fuel transport companies if supplier cannot transport</u>
Amerada Hess Corp.	Dana transport Inc.
Coastal Oil NY	Marshall Service Inc.
Ross Fogg Oil Corp	S. J. Transportation Inc.

- C. IF needed as a backup to action "A" above, THEN assemble temporary hoses and pumps to transfer fuel oil from the FOST to the DFOST Emergency Fill Connection.

6. COMPLETE and forward the selected action plan for alternative EDG fueling methods on a "TSC Technical Support Tracking Form."

TSTL

ATTACHMENT 9
Page 1 of 3

TECHNICAL SUPPORT TEAM LEADER CHECKLIST

NOTE

SALEM – Refer to page 3 of this attachment for additional actions required at Salem Station

- | | <u>Initials</u> |
|--|-----------------|
| 1. REPORT to the TSS and obtain a briefing. | _____
TSTL |
| 2. INITIATE and maintain a chronological log of your activities. | _____
TSTL |
| 3. BRIEF team members on the plant and emergency status. | _____
TSTL |
| 4. DIRECT Core Thermal Hydraulics Engineer to implement Attachment 11 and Nuclear Fuels Engineer to implement Attachment 12 of this procedure. | _____
TSTL |
| 5. DIRECT TSTM(s) to verify SPDS and CRIDS availability. | _____
TSTL |
| 6. DIRECT a TSTM to monitor plant activities on the OSC Radio Monitor. | _____
TSTL |
| 7. WHEN staffing is adequate to perform the technical support functions, THEN inform the TSS. Request the Administrative Support Supervisor to callout additional personnel as required. | _____
TSTL |
| 8. ASSIGN TSTM(s) specific tasks using TSC Technical Support Tracking Form (Attachment 4) of this procedure. | _____
TSTL |
| 9. DOCUMENT all assigned tasks using Attachment 3, TSC Engineering Task Assignment Log of this procedure. | _____
TSTL |

ATTACHMENT 9
Page 2 of 3

TECHNICAL SUPPORT TEAM LEADER CHECKLIST

Initials

10. ENSURE the engineer's OPERATIONAL STATUS BOARD is updated every 15 minutes:

TSTL

HOPE CREEK

SALEM

- a. Obtain the operational information by requesting the TSC Communicators to provide the information from VAX LA 120 printer, Menu Option #2 or from the Control Room Communicators.
OR
- b. Obtain the information from CRIDS PAGE DISPLAY #232.

- a. Obtaining the information from SPDS UNIT MASTER MENU OPTION #9 (Press Shift #9 on the Unit Master Menu)
OR
- b. Request the TSC Communicators to obtain the information from the Control Room Communicators

11. ENSURE the engineer's MAJOR EQUIPMENT & ELECTRICAL STATUS BOARD is updated once per event or upon any significant change in plant status.

TSTL

12. ESTABLISH communications with the Technical Support Manager (TSM) at the EOF. Provide an update on engineering activities and request engineering support, if required.

TSTL

13. REVIEW and forward all Attachment 4, TSC Technical Support Tracking Forms to the TSS. (Retain a copy for formal documentation).

TSTL

14. COMPLETE Attachment 10, Turnover Log - Technical Support Team Leader, when being relieved.

TSTL

15. AT the conclusion of the event, THEN insure that the team's area is returned to ready status and that all paperwork related to the event is turned over to the TSS.

TSTL

ATTACHMENT 9

Page 3 of 3

TECHNICAL SUPPORT TEAM LEADER CHECKLIST

SALEM ONLY

1. IF any Vital Bus is powered from an emergency diesel generator, THEN direct staff member to implement Attachment 7, "DG Load Monitoring", of this procedure. TSTL

2. IF Salem has experienced an Operating Basis Earthquake (OBE), THEN coordinate implementation of the spent fuel rack inspection IAW SC.DE-TS.ZZ-4406(Q), Evaluation of Post-OBE Rack-to-Rack and Rack-to-Wall Gaps. (EP96-002) TSTL

3. MONITOR the Spent Fuel Pool (SPF) Temperature (local indication). (EP99-001) when SPF temperature increases past 125° F
 - a. IF the temperature reaches 149° F., THEN COORDINATE through the EDO to have Operations restore one SFP Cooling Pump and one Heat Exchanger to cool down the SFP IAW S1(2).OP-SO.SF-0002(Q), SPENT FUEL COOLING SYSTEM OPERATION.
 - b. ASSURE this action is taken in sufficient time to prevent exceeding the pool design temperature of 180° F. (It should take approximately 18 hours to reach 180° F.)
 - c. MONITOR the SFP temperature until it returns to < 125° F. TSTL

4. MONITOR the status of Emergency Diesel Generator (EDG) fuel oil availability by implementing Attachment 8, Maintenance of Fuel Oil to Salem Emergency Diesel Generators, as appropriate. (EP96-001) TSTL

5. IF both SI pumps have been running for > 24 hours, Then monitor SI pump room temperatures (P250 and/or local monitoring) at least every 12 hours. If room temperature exceeds 120°F, then complete a TSC Technical Support Tracking Form (Attachment 4) which recommends the following to the OS:
 - a. Stop one of the two running SI pumps.
 - b. Stop the SI pump room cooler fan, if running.
 - c. If room temperature continues to increase above 120°F, then request Site Protection in the OSC to put together temporary ventilation to the SI pump room if the area is accessible. TSTL

6. REQUEST the SPDS Engineer to down load the SPDS memory every 12 hours. The SPDS Engineer's phone numbers are listed in NC.EP-WB.ZZ-0001(Z), EP Phone # Directory. TSTL

ATTACHMENT 10
Page 1 of 1

TURNOVER LOG - TECHNICAL SUPPORT TEAM LEADER

Date: ____ / ____ / ____

1. [UE] [A] [SAE] [GE] was declared @ _____ hrs. on ____ / ____ / ____

Due to: _____

2. The present classification, [A] [SAE] [GE] was declared @ _____ was declared _____ hrs. on ____ / ____ / ____

Due to: _____

3. The Emergency Coordinator (EC) is _____ name in the [EOF] [TSC]

4. The Oncoming and Offgoing TSTL shall:

Initials
On / Off

A. DISCUSS current conditions. Include any problems encountered or anticipated, and any ongoing, or pending technical support assignments. _____ / _____

B. REVIEW all applicable documentation including procedures, logs, etc., ensuring they are completed, correct and signed. _____ / _____

C. DISCUSS the team's priorities, personnel requirements and any support or material needs. _____ / _____

D. DISCUSS any Radiological, Safety, or Environmental concerns. _____ / _____

E. INSURE that technical support assignments are completed or reassigned prior to TSTM(s) being relieved or dismissed. _____ / _____

F. NOTIFY the TSS and the EDO of the change in command of the TSTL. Update plant status and priorities as applicable. _____ / _____

Oncoming TSTL signature time Offgoing TSTL signature

ATTACHMENT 11

Page 1 of 1

CORE THERMAL HYDRAULICS ENGINEER CHECKLIST

The Core Thermal Hydraulics Engineer (CTHE) shall:

- | | <u>Initials</u> |
|--|-----------------|
| 1. REPORT to TSTL upon arrival and receive assignment. | _____
CTHE |
| 2. ANALYZE core thermal hydraulic parameters to determine current conditions of the core. | _____
CTHE |
| 3. DEVELOP recommendations concerning plant operations to maintain safe core conditions. | _____
CTHE |
| 4. PROVIDE support to the Control Room staff on core reactivity conditions such as shutdown margin, boration requirements, control rod movements or patterns, etc. | _____
CTHE |
| 5. Assist the Nuclear Fuels Engineer (NFE) with fuel damage assessments, as requested. | _____
CTHE |
| 6. FORWARD all procedures, forms, etc. to the TSTL when the emergency is terminated. | _____
CTHE |

ATTACHMENT 12

Page 1 of 1

NUCLEAR FUELS ENGINEER CHECKLIST

The Nuclear Fuels Engineer (NFE) shall:

Initials

- 1. REPORT to TSTL upon arrival and receive assignment.
- 2. VERIFY/OBTAIN references to perform fuels engineer functions.
- 3. EVALUATE fuel damage based on core thermal conditions, rad monitoring, and/or specific chemistry sample results:

NFE

NFE

NFE

HOPE CREEK

IAW HC.EP-EP.ZZ-0205,
"TSC – Post Accident Core
Damage Assessment".

SALEM

IAW SC.EP-EP ZZ-0205,
"TSC – Post Accident Core
Damage Assessment".

- 4. COORDINATE fuel damage assessments with the TSC Chemistry Supervisor and inform TSTL of results.
- 5. FORWARD all procedures, forms, etc., to the TSTL when the emergency is terminated.

NFE

NFE

PSEG Internal Use Only

PSEG&G NUCLEAR LLC

NC.EP-EP.ZZ-0203 (Q) Rev. 01

PSEG&G
NUCLEAR EP.ZZ-0203(Q)
CONTROL
COPY # Page 1 of 1
EP12059

ADMINISTRATIVE SUPPORT/COMMUNICATION TEAM RESPONSE - TSC

USE CATEGORY: II

REVISION SUMMARY:

Biennial Review Yes X No

This revision satisfies the requirement for a biennial review.

The changes to this procedure are editorial. Manager CA, EP, & IT has been replaced with Manager EP & IT.

All revisions are editorial in nature.

Attachment 5 revised to add reminder to maintain the facility activation section of the Emergency Status Information Board

Attachment 5 revised to indicate only the volume of the desktop plant page needs to have the volume adjusted.

Attachment 4 revised to add position J04a Admin staff TDR Clerk that was omitted.

Attachment 4 revised to remove Relay supervisor and tech positions. These positions were removed from the ERO during a revision to section 3 of the emergency plan.

Section titles/attachment titles have been revised to agree with the table of contents.

IMPLEMENTATION REQUIREMENTS

Effective DATE 9/14/00

APPROVED:

Regina Lee (R. Lee)
Manager - EP & IT

07/31/2000
Date

ADMINISTRATIVE SUPPORT/COMMUNICATION TEAM RESPONSE - TSC

TABLE OF CONTENTS

<u>Section</u>	<u>Title</u>	<u>Page</u>
	TABLE OF CONTENTS.....	1
1.0	PURPOSE.....	2
2.0	PREREQUISITES	2
	2.1 Prerequisites To Be Followed Prior To Implementing This Procedure.....	2
3.0	PRECAUTIONS AND LIMITATIONS.....	2
	3.1 Emergency Staffing/Relief	2
4.0	EQUIPMENT REQUIRED	2
5.0	PROCEDURE.....	2
	5.1 Administrative Support Supervisor and Emergency Preparedness Advisor (TSC1/TSC2 until arrival of the ADMSS/EPA) Duties	3
6.0	RECORDS.....	3
	6.1 The Administrative Support Supervisor Should Ensure The Following.....	3
7.0	REFERENCES	4
	7.1 References	4
	7.2 Cross References.....	4

ATTACHMENTS

ATTACHMENT 1 - ADMINISTRATIVE SUPPORT SUPERVISOR (ADMSS) CHECKLIST...	5
ATTACHMENT 2 - EMERGENCY PREPAREDNESS ADVISOR (EPA) CHECKLIST	7
ATTACHMENT 3 - EMERGENCY RESPONSE TEAM - TELECOPY LOG.....	9
ATTACHMENT 4 - ONSITE SHIFT RELIEF SCHEDULE MANNING CHART	10
ATTACHMENT 5 - EDO CLERK GUIDELINES.....	14

1.0 PURPOSE

To provide direction for the emergency actions of the Administrative Support Supervisor (ADMSS), Administrative Support Team, Emergency Preparedness Advisor (EPA), and Communications Team in the Technical Support Center (TSC).

2.0 PREREQUISITES**2.1 Prerequisites To Be Followed Prior To Implementing This Procedure**

- 2.1.1 An emergency has been declared at Salem or Hope Creek Nuclear Generating Station and the TSC is required to be staffed or activated.

3.0 PRECAUTIONS AND LIMITATIONS**3.1 Emergency Staffing/Relief:**

- 3.1.1 It is expected that the two duty TSC Communicators will implement this procedure until the arrival of the ADMSS or EPA. Upon arrival, the ADMSS and EPA are expected to continue with implementation of this procedure.
- 3.1.2 The Administrative Support Supervisor (ADMSS) in the Technical Support Center (TSC) should coordinate the assessment and completion of minimum staffing of the Emergency Response Facilities (ERFs) with the Administrative Support Manager (ASM) in the Emergency Operations Facility (EOF).
- 3.1.3 After completion of initial staffing, the ADMSS and ASM should begin to assess and arrange relief staffing in order to continue 24-hour minimum staffing of ERFs.

4.0 EQUIPMENT REQUIRED

As provided in the Emergency Response Facility.

5.0 PROCEDURE**NOTE**

The two duty TSC Communicators are expected to implement this procedure until the arrival of the ADMSS or EPA. Upon arrival, the ADMSS and/or EPA are expected to continue with implementation of this procedure.

5.1 Administrative Support Supervisor and Emergency Preparedness Advisor (TSC1/TSC2 until arrival of the ADMSS/EPA) Duties

- 5.1.1 INITIATE and MAINTAIN a chronological log of activities and events. _____
ADMSS/EPA
- 5.1.2 INFORM Emergency Duty Officer of arrival and when prepared to assume functional duties. _____
ADMSS/EPA
- 5.1.3 DIRECT staff to verify operation of the following:
 - A. Telephone lines _____
ADMSS/EPA
 - B. Telecopiers _____
ADMSS
 - C. Reproduction equipment _____
ADMSS
- 5.1.4 COORDINATE mobilization of additional support personnel with the ASM. _____
ADMSS
- 5.1.5 IMPLEMENT Attachment 1. _____
ADMSS
- 5.1.6 IMPLEMENT Attachment 2 of this procedure. _____
EPA

6.0 RECORDS

6.1 The Administrative Support Supervisor Should Ensure The Following

- 6.1.1 All written communications and documentation produced during an emergency are important for recording actions taken and reconstruction of events and should not be discarded.
- 6.1.2 The ADMSS should ensure that TSC Administrative Support Team captures and controls all material received and generated throughout the emergency including all logbooks and original data forms. Attachment 3, Emergency Response Team - Telecopy Log, should be used for all data sent or received over the emergency telecopier network.
- 6.1.3 All attachments, forms, appendices, and logs are to be retained in accordance with NAP-1 and sent to the Manager –EP & IT, who will ensure all materials are retained.

7.0 **REFERENCES**

7.1 **References**

7.1.1 PSEG Nuclear Emergency Plan

7.2 **Cross-References**

7.2.1 Emergency Response Callout/Personnel Recall EPIP 204H(C)

7.2.2 Emergency Response Callout/Personnel Recall EPIP 204S(C)

ATTACHMENT 1

Page 1 of 2

ADMINISTRATIVE SUPPORT SUPERVISOR (ADMSS) CHECKLIST

1.0 Prior to Activation of the Facility:

ENSURE files and emergency response lockers are unlocked; (keys are maintained in the Red Emergency Key Box mounted on wall).

ADMSS

ASSIST Emergency Response Team members with distribution of workstation supplies.

ADMSS

RUN test copy through copy machine, then, MAKE copies of any data sheets found in Telecopier tray for distribution.

ADMSS

ENSURE data sheets are properly date-stamped and initialed prior to distribution.

ADMSS

RUN telecopier test to insure proper operation of equipment at the direction of Communications Team.

ADMSS

DESIGNATE Administrative Support Team Member to report to the Operations Support Center (OSC) to be the OSC Administrative Clerk if requested by the OSC Coordinator.

ADMSS

DESIGNATE Administrative Support Team member to perform telecopier and copy machine duties (i.e. – receive and stamp incoming forms and make sufficient copies for distribution). Utilize Attachment 3, Emergency Response Team - Telecopy Log, to keep track of all forms received and sent. The sequential log number shall be recorded on Attachment 3 and placed in the upper left corner of each telecopied form.

ADMSS

DESIGNATE Administrative Support Team member to distribute copies to staff and to properly log completed deliveries.

ADMSS

DESIGNATE an Administrative Support Team member to initiate and maintain Emergency Duty Officer's log book and Attachment 5, EDO clerk guidelines.

ADMSS

DESIGNATE another Administrative Support Team member to assist in updating key status boards.

ADMSS

ATTACHMENT 1
Page 2 of 2

2.0 Post Activation of Facility

1. When requested by the EDO to arrange for shift relief, **CONTACT** the Admin Support Manager (ASM) in the EOF and request implementation of "Shift Relief Callout" as per instructions in EPEP 0701. **PROVIDE** the following information:

- Time of shift relief (12 hour rotation)
- Any special access instructions

ADMSS

2. IF automated callout system fails or will not be used, AND EOF requests assistance, **UTILIZE** Attachment 4, Onsite Shift Relief Schedule Manning Chart, as needed.

ADMSS

3. **DISTRIBUTE** copies of forms as appropriate to each area. **PLACE** 1 copy in each basket. The originals should be maintained in sequential order.

ADMSS

4. **MAINTAIN** 5 file copies of each procedure and attachment for use within the facility.

ADMSS

5. **DETERMINE** the needs for food, lodging, equipment, and transportation. **COORDINATE** these needs with the Administrative Support Manager in the EOF when it is activated.

ADMSS

6. **OBTAIN** additional administrative supplies as needed.

ADMSS

7. **COORDINATE** with the Materials Supervisor in the EOF for accessing vendor lists and for providing any needed support for the station emergency response team. The EP Emergency Phone Directory, commercial phone books, and internet are all good information sources.

ADMSS

EVENT TERMINATION/CLOSEOUT

1. **RESTORE** the Facility to its original state.

ADMSS

2. **FORWARD** all completed forms to the Manager EP & IT. **ATTACH** any referenced and completed EPEPs and appendices.

ADMSS

ATTACHMENT 2
Page 1 of 2
EMERGENCY PREPAREDNESS ADVISOR (EPA) CHECKLIST

Prior to Activation of Facility:

Initials

1. **VERIFY** or have TSC Communicators **VERIFY** communication capabilities with other Emergency Response Facilities using NETS, ESSX, and DID systems. _____
EPA

2. **VERIFY** or have TSC Communicators **VERIFY** operability of telecopiers (may **COORDINATE** with Admin Support Team). _____
EPA

3. **OBTAIN** anticipated ECG Communicator Attachments located in work file drawer. _____
EPA

4. **OBTAIN** a turnover briefing from Control Room Communicators to include the following information:
 - Current ECG attachment being implemented.
 - Status of notifications being made.
 - Due time for next station Status Checklist (SSCL).
SSCLs are due every 30 minutes.
 - Request copy of Initial Contact Message Form (ICMF), if necessary.
 - Note any special communication problems, number changes, or contacts.
 - Further note any relevant operational status.
 - Give Communicator your name, phone extension and advise that you will notify him when your facility is activated to assume Communicator duties.
 - Status of the NRC Data Sheet.
 - Status of NRC notification._____
EPA

5. **DESIGNATE** Communicator 1 for voice notification duties and Communicator 2 for form preparation/ coordination and status board maintenance. **IF** a third Communicator is available, **ASSIGN** to NRC-ENS telephone duty. _____
EPA

ATTACHMENT 2
Page 2 of 2
EMERGENCY PREPAREDNESS ADVISOR (EPA) CHECKLIST

Post Activation of Facility:

Initials

- 1. **ASSUME** all emergency communications functions when Facility is declared activated. _____ EPA
- 2. **IMPLEMENT** Event classification Guide Attachments only as directed by the Emergency Duty Officer (EDO). _____ EPA
- 3. **MONITOR** all Telecopier activity including transmissions and malfunctions. Ensure all data forms are initialed or signed off. _____ EPA
- 4. **ESTABLISH** timetable for telecopier transmissions of critical data forms ensuring deadlines are met. _____ EPA
- 5. **ENSURE** all notifications and procedural requirements are completed accurately and on time. _____ EPA
- 6. **MONITOR** status boards ensuring accuracy and timely updates. _____ EPA
- 7. **BRIEF** the EDO on communication status and carry out EDO requests. _____ EPA
- 8. **REVIEW** Communicator ECG attachments ensuring completeness and accuracy. _____ EPA

Event Termination/Closeout:

- 1. **ASSIST** in restoration of facility to its original state. _____ EPA
- 2. **FORWARD** all completed EPEPs, forms, and attachments to the Manager –EP & IT. _____ EPA

ATTACHMENT 4
Page 1 of 4
ONSITE SHIFT RELIEF SCHEDULE MANNING CHART

Date: _____

Technical Support Center (TSC)

POSITION	TITLE	SHIFT #1	SHIFT #2
		(__:__ to __:__) (Current shift)	(__:__ to __:__) (Relief shift)
A-03	EDO	_____	_____
E-01	RAC	_____	_____
E-02	RP SUPERVISOR OFFSITE	_____	_____
E-03	RP TECH	_____	_____
F-01	TSS	_____	_____
F-02	TSTL	_____	_____
F-05	CONTROLS ENG	_____	_____
F-06A	CORE THERMAL ENGR.	_____	_____
F-03	ELECTRICAL ENGR	_____	_____
F-04	MECHANICAL ENGR	_____	_____
F-06B	NUC FUELS	_____	_____
F-07	EPA	_____	_____
F-08	CM1	_____	_____
F-08	CM2	_____	_____
I-01	SECURITY LIASON	_____	_____
I-04	SFM	_____	_____
J-03	ADMIN SUPPORT SUPV	_____	_____
J-04	ADMIN STAFF	_____	_____
J-04	ADMIN STAFF	_____	_____
J-04	ADMIN STAFF	_____	_____
J-04	ADMIN STAFF	_____	_____
J-04a	ADMIN STAFF (TDR CLERK)	_____	_____

ATTACHMENT 4
Page 2 of 4
ONSITE SHIFT RELIEF SCHEDULE MANNING CHART

Date: _____

Operations Support Center (OSC)

POSITION	TITLE	SHIFT #1	SHIFT #2
		(__:__ to __:__) (Current shift)	(__:__ to __:__) (Relief shift)
C-01	OSC COORDINATOR	_____	_____
C-10	OSC CLERK	_____	_____
C-04A	SHIFT SUP SUPERVISOR	_____	_____
C-05A	RAD WASTE OPERATOR	_____	_____
B-05	EO	_____	_____
B-05	EO	_____	_____
B-05	EO	_____	_____
C-04B	MECH SUPV	_____	_____
C-04C	CONTROLS SUPV	_____	_____
C-05E	I&C TECH	_____	_____
C-05E	I&C TECH	_____	_____
C-05D	ELEC TECH	_____	_____
C-05D	ELEC TECH	_____	_____
C-05C	WELD TECH	_____	_____
C-05B	MACHINIST	_____	_____
C-08	PLANNER	_____	_____
C-07	DUTY STOREKEEPER	_____	_____
E-02	RP SUPV EXP CONT	_____	_____

ATTACHMENT 4
Page 3 of 4
ONSITE SHIFT RELIEF SCHEDULE MANNING CHART

Date: _____

Operations Support Center (OSC) - Continued

POSITION	TITLE	SHIFT #1	SHIFT #2
		(__ : __ to __ : __) (Current shift)	(__ : __ to __ : __) (Relief shift)
C-06	SITE PROT SUPERVISOR	_____	_____
C-06A	FIRE BRIGADE	_____	_____
C-06A	FIRE BRIGADE	_____	_____
C-06A	FIRE BRIGADE	_____	_____
C-06A	FIRE BRIGADE	_____	_____
C-06A	FIRE BRIGADE	_____	_____

Date: _____

Control Room Staff

POSITION	TITLE	SHIFT #1	SHIFT #2
		(__ : __ to __ : __) (Current shift)	(__ : __ to __ : __) (Relief shift)
A-04	OS	_____	_____
B-04	CR CM1	_____	_____
B-04	CR CM2	_____	_____
B-02	CRS	_____	_____
B-01	NSTA	_____	_____
B-03	NCO	_____	_____
B-03	NCO	_____	_____

ATTACHMENT 4
Page 4 of 4
ONSITE SHIFT RELIEF SCHEDULE MANNING CHART

Date: _____

Control Point Staff (CP)

POSITION	TITLE	SHIFT #1	SHIFT #2
		(__ : __ to __ : __) (Current shift)	(__ : __ to __ : __) (Relief shift)
E-02	RP SUPERVISOR IN PLANT		
E-03/04	RP TECH		
E-05	CHEM SUPERVISOR		
E-06	CHEM TECH		
E-06	CHEM TECH		

EXTRAS

<u>Position</u>	<u>Title</u>	<u>Shift #1</u>	<u>Shift #2</u>
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

ATTACHMENT 5
Page 1 of 1
EDO CLERK GUIDELINES

EDO CLERK - CHECKLIST

The following guidelines provide suggested tasks that the EDO Clerk should perform if agreed upon with the EDO.

GUIDELINES:

- **MAINTAIN** EDO logbook. **ENTER** key information as announced or as directed by the EDO. Ensure the EDO reviews the log periodically.
- **TRACK** EDO facility briefings and **PROVIDE** the EDO with a 5-minute warning before the next scheduled briefing (usually every 30 - 45 minutes).
- **MAINTAIN** the facility activation section of the Emergency Status Information Board.
- **ANSWER** unattended phones of the EDO, TSS, or RAC. **TAKE** message or **INTERRUPT** personnel if the caller says the information is urgent.
- **UPDATE** OSC priority board every 30 minutes by **CONTACTING** the OSC Clerk and **ENSURING** that the TSC board reflects the OSC priority board. **INFORM** EDO when priority board is updated.
- **OBTAIN** procedures for the EDO/TSS/RAC as requested from the working file cabinet.
- **ENSURE** EDO/TSS/RAC have administrative supplies.
- **ADJUST** volume of plant page desk speaker (Salem only) to maximum.

PSE&G NUCLEAR

SC.EP-EP.ZZ-0301 (Q) - REV. 01

SHIFT RADIATION PROTECTION TECHNICIAN RESPONSE

USE CATEGORY: II

PSE&G

CONTROL

COPY # EP1P059

REVISION SUMMARY:

1. This revision satisfies the requirement for a biennial review.
2. Added the R53 Main Steam Line Process Monitors to Attachments 2 and 3.
3. Added time and date to Form-1 (Habitability Log).
4. Added information that was inadvertently deleted during NAP-1 reformatting from 2nd bullet of Step 1.1.8, Attachment 1.
5. Fixed a typo in Attachment 1, Step 1.1.17, changing onsite PARs to PAGs.
6. Fixed typo in Attachment 5, page 17, 2nd bullet.

IMPLEMENTATION REQUIREMENTS

This procedure is effective for use upon issue.

9-14-00

APPROVED: _____



 Manager - EP & IT

9/14/00

 Date

APPROVED: _____

N/A

 Vice President - Operations

N/A

 Date

SHIFT RADIATION PROTECTION TECHNICIAN RESPONSE

TABLE OF CONTENTS

Section	Title	Page
1.0	PURPOSE	2
2.0	PREREQUISITES	2
	2.1 Prerequisites To Be Followed Prior To Implementing This Procedure ...	2
3.0	PRECAUTIONS AND LIMITATIONS.....	2
	3.1 Precaution and Limitations To Be Followed Prior To Implementing This Procedure	2
4.0	EQUIPMENT REQUIRED	2
5.0	PROCEDURE.....	3
	5.1 The SRPT Should	3
	5.2 When the TSC is Activated, Perform the Following	3
6.0	RECORDS.....	3
7.0	REFERENCES.....	4
	7.1 References.....	4
	7.2 Cross References	4
 ATTACHMENTS		
	ATTACHMENT 1 - Shift Radiation Protection Technician Checklist.....	5
	ATTACHMENT 2 - Radiological Assessment Data Sheet - Unit 1.....	10
	ATTACHMENT 3 - Radiological Assessment Data Sheet - Unit 2.....	12
	ATTACHMENT 4 - RMS Quick Reference.....	14
	ATTACHMENT 5 - Operating Instructions for the R - 45 Control Terminal.....	16
	ATTACHMENT 6 - Operating Instructions for the Salem Unit 2 RMS Computer.....	25
	ATTACHMENT 7 - Salem Radiological Based Protective Action Recommendations and Recommended Protective Actions Worksheet.....	27
	ATTACHMENT 8 - Onsite Protective Action Guidelines	29
	ATTACHMENT 9 - Contamination Control Guidance	30
	ATTACHMENT 10 - Steam Generator Tube Leak/Rupture Guidelines	31
 FORMS		
Form - 1	Habitability Log.....	34

1.0 PURPOSE

To outline and describe the Shift Radiation Protection Technician's (SRPT) duties during a declared emergency

2.0 PREREQUISITES

2.1 Prerequisites To Be Followed Prior To Implementing This Procedure

Implement this procedure at:

- The discretion of the Operations Superintendent (OS) or Radiation Protection Supervision.
- Upon a declaration of an Unusual Event or greater emergency classification.

3.0 PRECAUTIONS AND LIMITATIONS

3.1 Precaution and Limitations To Be Followed Prior To Implementing This Procedure

- 3.1.1 It is recommended that initials be used in the place keeping sign-offs, instead of checkmarks, if more than one person may implement this procedure.
- 3.1.2 Personnel who implement this procedure shall be trained and qualified IAW the Emergency Plan.
- 3.1.3 The OS may change any priority concerning the SRPT's duties, as deemed necessary.
- 3.1.4 Steps listed in this procedure may be performed in the order deemed appropriate for the emergency situations. Only steps applicable to the specific emergency need be performed.

4.0 EQUIPMENT REQUIRED

As provided at the Control Point and Control Room.

5.0 PROCEDURE

5.1 The SRPT Should:

START completing Attachment 1, Shift Radiation Protection Technician(s) Checklist. _____

5.2 When the TSC is Activated Perform the Following:

5.2.1 COMPLETE the turnover of Dose Assessment/Station Status Checklist duties to the Radiation Protection Supervisor – Offsite or the Radiological Assessment Coordinator. _____

NOTE

A complete listing of RMS monitors can be found in the RMS Manual (Unit 1 or 2).

5.2.2 IMPLEMENT Attachment 4, RMS Quick Reference, for an abbreviated list of RMS monitors and the R44 preplanned alternative methodology. _____

5.2.3 DOCUMENT monitors in Warning "W" or Alarm "A" on Attachment 2, Radiological Assessment Data Sheet - Unit 1, or Attachment 3, Radiological Assessment Data Sheet - Unit 2. _____

5.2.4 DOCUMENT monitor values as instructed by the OS or Radiation Protection Supervision on Attachment 2, Radiological Assessment Data Sheet - Unit 1, or Attachment 3, Radiological Assessment Data Sheet - Unit 2. _____

5.2.5 TRANSMIT completed Attachment 2 or Attachment 3 via the FAX using the Group "C" key every 15 to 20 minutes or in the opinion of the SRPT, conditions warrant it. _____

5.2.6 PROVIDE a completed copy of Attachment 2 or 3 to the Radiation Protection Supervisor - Exposure Control (RPS-EXP) located in the OSC, every 15 to 20 minutes, or in the opinion of the SRPT, conditions warrant it. _____

6.0 RECORDS

Return completed procedure and any information or data thought to be pertinent by the SRPT, to the Manager – EP & IT.

7.0 **REFERENCES**

7.1 **References**

Nuclear Emergency Plan.

7.2 **Cross References**

NC.EP-EP.ZZ-0310(Q), Radiation Protection Supervisor – Offsite And Field Monitoring Team Response.

ATTACHMENT 1

Page 1 of 5

**SHIFT RADIATION PROTECTION TECHNICIAN
CHECKLIST**

1.0 SRPT INITIAL ACTIONS

NOTE

The order that the steps are followed in this attachment may be performed out of sequence, if the SRPT believes the emergency warrants it.

1.1 Perform the Following:

1.1.1 REPORT to the CR when an emergency is declared to receive a briefing from the OS. _____

1.1.2 PROVIDE a briefing to the OS, which should include the following Information:

- Habitability of the Control Point and Control Room. _____
- Any unusual dose rates observed on the way to the CR. _____

NOTE

- On a back shift, during a non-outage situation, there should be 2 Rad Pro Techs and 1 Chemistry Tech available at all times at Hope Creek.
- The Hope Creek Control Point may be contacted at extension 3741.

- The staffing of the Salem Radiation Protection and Chemistry personnel. _____

1.1.3 REQUEST the status of the MET Tower's operability. _____

A. IF the MET Tower is not operational,
THEN refer to step 1.1.9.

1.1.4 OBTAIN the identity of Communicator 2 _____
(Name)

ATTACHMENT 1

Page 2 of 5

1.1.5 TURN on the AMS located in the back of Unit 1 & Unit 2 CR. _____

1.1.6 REQUEST that the Emergency Vehicle from the Hope Creek Control Point (x3741) be delivered to the Unit 2 Steam Mixing Bottle Area or alternate location, depending on radiological conditions, and the keys delivered to the Salem CP when any of the following occur: _____

- Upon an Alert declaration or higher. _____
- When an Alert declaration or higher is about to be made. _____
- If on/offsite monitoring is deemed necessary by the OS or Radiation Protection Supervision. _____

NOTE

- The SRPT should be generating page two of the Station Status Checklist (SSCL) for both Salem Unit One and Unit Two, for Common Site Events. The Hope Creek SRPT will be generating a SSCL for Hope Creek under these conditions.
- A blank SSCL, page 2, may be obtained from Communicator Number 2, if thought necessary.

1.1.7 IMPLEMENT NC.EP-EP.ZZ-0309(Q)/EPIP 309S, Dose Assessment, to perform dose assessment and generate a completed SSCL pg. 2 every 30 minutes _____

1.1.8 PERFORM the following steps, if automatic data acquisition MIDAS and/or the MET Computer is not operational: _____

- REFER to appropriate attachment, (Attachment 2, Radiological Assessment Data Sheet - Unit 1 or Attachment 3, Radiological Assessment Data Sheet - Unit 2). _____
- COMPLETE monitors with an * next to them, monitors in alarm, and the MET Data section listed on Attachments 2 and 3 every 15 minutes for the affected Unit. _____

ATTACHMENT 1

Page 3 of 5

1.1.9 OBTAIN the MET data from the following, if the MET Computer is not operational:

- Unit One Control Room _____
- Hope Creek Control Point (extension 3741) _____
- Hope Creek Control Room (extension 3059) _____
- National Weather Service at 609-261-6604 or 609- 261- 6603. _____

1.1.10 IMPLEMENT NC.EP-EP.ZZ-0309(Q)/EPIP 309S, Dose Assessment, for instructions on performing dose assessment in the manual mode. _____

1.1.11 INPUT the appropriate effluent monitor and MET values manually into MIDAS to perform dose assessment in the manual mode. _____

NOTE

Contact an Emergency Preparedness representative at x1571, 1157, or pager number 277-3992 concerning any MIDAS problems.

1.1.12 IF the MIDAS computer located in the CR is not operational, THEN use one of the MIDAS computers listed below:

- Salem TSC _____
- Hope Creek Control Point _____
- Hope Creek TSC _____

1.1.13 DETERMINE appropriate PAR, if any, utilizing the most current SSCL and Attachment 7 Salem Radiological Based PARs and PAR Worksheet. _____

1.1.14 REVIEW the SSCL and the Radiological Based PAR with the OS Utilize Attachment 7 as needed to explain the PAR provided. _____

ATTACHMENT 1

Page 4 of 5

1.1.15 PROVIDE the signed SSCL to Communicator Number 2, or leave it with the OS, if he requests to keep it. _____

1.1.16 PERFORM habitability checks in the CR and OSC, if activated, every thirty minutes and record results on Form – 1, Habitability Log, unless told otherwise by the OS, RPS-EXP. _____

1.1.17 MAKE appropriate Onsite PAGs to the OS or RAC for Onsite locations using Attachment 8, Onsite Protective Action Guidelines. _____

1.1.18 ESTABLISH Contamination Controls (no eating, no drinking, no smoking, proper postings, setting up step off pads and friskers) when any of the following have occurred. _____

NOTE

Noble Gas (NG) Technical Specification Limits are 2.42E+05 uCi/second.

- A radiological release \geq NG technical specification limits is in progress. _____
- The potential of a NG radiological release technical specification limits is thought to be high. _____
- Normal RCA boundaries have been breached. _____
- At the RAC's discretion. _____

NOTE

A RM-14 or equivalent count rate meter should be positioned next to all newly placed contamination control step off pads.

ATTACHMENT 1
Page 5 of 5

- 1.1.19 IMPLEMENT Attachment 9, Contamination Control Guidance, for how to limit access to certain areas and where to position step off pads. _____
- 1.1.20 NOTIFY the RAC and RPS-EXP of changing radiological conditions as determined from step 1.1.18. _____
- 1.1.21 ASSIST the OS with completion of Page 2 of the NRC Data Sheet, if asked to . _____
- 1.1.22 IMPLEMENT Attachment 10, Steam Generator Tube Leak/Rupture Guidelines, when thought appropriate. _____
- 1.1.23 IMPLEMENT Section 5.2 of this procedure, and follow appropriate steps, when the TSC is activated. _____

TURNOVER
Given By: _____ Date/Time: ____ - ____ - ____ / ____ : ____

TURNOVER
Received By: _____ Date/Time: ____ - ____ - ____ / ____ : ____

ATTACHMENT 2

Page 1 of 2

RADIOLOGICAL ASSESSMENT DATA SHEET - UNIT 1

Date : _____

Time : _____

Meteorological Data

Back up MET data may be obtained by calling Hope Creek Control Point at 3741,
National Weather Service at (609) 261-6604 or (609) 261-6602

Wind Speed	_____	mph	33'
Wind Speed	_____	mph	300'
Wind Direction FROM	_____	degrees	300'
Wind Direction FROM	_____	degrees	33'
Delta "T" (use 300-33 if operational)	_____	0C	300-33' or 150-33' (circle one)
Plant Vent flow rate (1.25E + 05 if unknown)	_____	cfm	

Plant Vent and Containment Monitors

Monitor Number	Name	Value	Units	Warning	Alarm	Low Range	High Range
1R11A	CTMT Particulate		CPM	W	A	1E+01	1E+06
1R12A	CTMT Noble Gas		CPM	W	A	1E+01	1E+06
1R12B	CTMT Iodine		CPM	W	A	1E+01	1E+06
*1R41A	Low Range PV NG		µCi/cc	N/A	N/A	1E-08	1E-01
*1R41B	Mid Range PV NG		µCi/cc	N/A	N/A	1E-04	1E+02
*1R41C	High Range PV NG		µCi/cc	N/A	N/A	1E-01	1E+05
1R41D	NG Effluent		µCi/sec	W	A	1E+00	1E+13
* 1R16	Plant Vent Gross Eff		CPM	W	A	1E+01	1E+06
1R2	130 CTMT ARM		mR/hr	W	A	1E-01	1E+04
1R10A	100' CTMT Persnl Hatch		mR/hr	W	A	1E-01	1E+04
1R10B	130' CTMT Persnl Hatch		mR/hr	W	A	1E-01	1E+04
1R7	Seal Table. GA		mR/hr	W	A	1E-01	1E+04
-1R44A	CTMT High Range		R/hr	W	A	1E+00	1E+07
-1R44B	CTMT High Range		R/hr	W	A	1E+00	1E+07
* 1R45B	Mid Range PV NG		µCi/cc	W	A	1E-03	1E+01
* 1R45C	High Range PV NG		µCi/cc	W	A	1E-01	1E+05
1R45D	PV Filter Monitor		CPM	W	A	1E+00	1E+06
1R53	MSL Process (N 16)		mR/hr	W	A	1E+01	1E+06

* Complete every 15 minutes
+ Record Value if Onscale.

ATTACHMENT 2

Page 2 of 2

Date: _____

Time: _____

Monitor Number	Name	Value	Units	Warning	Alarm	Low Range	High Range
1R1A	CR, General Area (GA)		mR/hr	W	A	1E-01	1E+04
1R1B	Control Room Intake Duct		CPM	W	A	1E+01	1E+06
1R3	Chem Lab, GA		mR/hr	W	A	1E-01	1E+04
1R4	Charging Pump, GA		mR/hr	W	A	1E-01	1E+04
1R5	Spent Fuel Pool		mR/hr	W	A	1E-01	1E+04
1R6A	Primary Sample Lab		mR/hr	W	A	1E-01	1E+04
1R9	New Fuel Storage, GA		mR/hr	W	A	1E-01	1E+04
1R13A	Fan Coil Cooling		CPM	W	A	1E+01	1E+06
1R13B	Fan Coil Cooling		CPM	W	A	1E+01	1E+06
1R13C	Fan Coil Cooling		CPM	W	A	1E+01	1E+06
1R13D	Fan Coil Cooling		CPM	W	A	1E+01	1E+06
1R13E	Fan Coil Cooling		CPM	W	A	1E+01	1E+06
1R15	Condenser Air Ejector		CPM	W	A	1E+01	1E+06
1R17A	Component Cooling H ₂ O		CPM	W	A	1E+01	1E+06
1R17B	Component Cooling H ₂ O		CPM	W	A	1E+01	1E+06
1R18	Liquid Waste Release		CPM	W	A	1E+01	1E+06
1R19A	#11 S/G Blowdown		CPM	W	A	1E+00	1E+06
1R19B	#12 S/G Blowdown		CPM	W	A	1E+00	1E+06
1R19C	#13 S/G Blowdown		CPM	W	A	1E+00	1E+06
1R19D	#14 S/G Blowdown		CPM	W	A	1E+00	1E+06
1R20B	Chemistry Count Room		mR/hr	W	A	1E-01	1E+04
1R24A	Seal H ₂ O Injection Filter		mR/hr	W	A	1E-02	1E+03
1R24B	Seal H ₂ O Injection Filter		mR/hr	W	A	1E-02	1E+03
1R25	#1 Seal H ₂ O Filter		mR/hr	W	A	1E-02	1E+03
1R26	Rx Coolant Filter		mR/hr	W	A	1E-02	1E+03
1R27	Liquid Waste Filter		mR/hr	W	A	1E-02	1E+03
1R28	Spent Fuel Pool Filter		mR/hr	W	A	1E-02	1E+03
1R29	SFP Skimmer Filter		mR/hr	W	A	1E-02	1E+03
1R30	Refuel H ₂ O Filter		mR/hr	W	A	1E-02	1E+03
1R31A	Letdown HX Failed Fuel		CPM	W	A	1E+01	1E+06
1R32A	Fuel Handling Crane		mR/hr	W	A	1E-01	1E+06
1R33	Ion Exchange Filter		mR/hr	W	A	1E-02	1E+03
1R34	North Pipe Pen		mR/hr	W	A	1E+01	1E+06
1R36	Evap and Feed H ₂ O		CPM	W	A	1E+01	1E+06
1R40	Condensate Filter		mR/hr	W	A	1E-01	1E+04
1R43	Unit 1 & 2 PV, GA		mR/hr	W	A	1E-01	1E+04
1R46	MSL Process		mR/hr	W	A	1E+00	1E+04
1R47	Electrical Pen High Range		mR/hr	W	A	1E-01	1E+07
2R52	PASS Room		R/hr	W	A	1E+00	1E+04

ATTACHMENT 3

Page 1 of 2

RADIOLOGICAL ASSESSMENT DATA SHEET - UNIT 2

Date : _____

Time : _____

Meteorological Data

Back up MET data may be obtained by calling Hope Creek Control Point at 3741,
National Weather Service at (609) 261-6604 or (609) 261-6602

Wind Speed	_____	mph	33'
Wind Speed	_____	mph	300'
Wind Direction FROM	_____	degrees	300'
Wind Direction FROM	_____	degrees	33'
Delta "T"	_____	°C	300-33' or
(use 300-33 if operational)	_____		150-33'
			(circle one)

Plant Vent flow rate (1.25E + 05 if unknown) _____ cfm

Plant Vent and Containment Monitors

Monitor Number	Name	Value	Units	Warning	Alarm	Low Range	High Range
2R11A	CTMT Particulate		CPM	W	A	1E+01	1E+06
2R12A	CTMT NG		CPM	W	A	1E+01	1E+06
2R12B	CTMT Iodine		CPM	W	A	1E+01	1E+06
*2R41A	Low Range PV NG		µCi/cc	N/A	N/A	1E-08	1E-01
*2R41B	Mid Range PV NG		µCi/cc	N/A	N/A	1E-04	1E+02
*2R41C	High Range PV NG		µCi/cc	N/A	N/A	1E-01	1E+05
2R41D	NG Effluent		µCi/se	W	A	1E+00	1E+13
*2R16	PV Gross Effluent		CPM	W	A	1E+01	1E+06
2R2	130 CTMT ARM		mR/hr	W	A	1E-01	1E+04
2R10A	100' CTMT Persnl Hatch		mR/hr	W	A	1E-01	1E+04
2R10B	130' CTMT Persnl Hatch		mR/hr	W	A	1E-01	1E+04
2R7	Seal Table, GA		mR/hr	W	A	1E-01	1E+04
+2R44A	CTMT High Range		R/hr	W	A	1E+00	1E+07
+2R44B	CTMT High Range		R/hr	W	A	1E+00	1E+07
*2R45B	Backup Mid Range PV NG		µCi/cc	W	A	1E-03	1E+01
*2R45C	Backup High Range PV NG		µCi/cc	W	A	1E-01	1E+05
2R45D	PV Filter Monitor		CPM	W	A	1E+00	1E+06
2R53	MSL Process (N 16)		mR/hr	W	A	1E+01	1E+06

* Complete every 15 minutes
+ Record Value if Onscale

ATTACHMENT 3

Page 2 of 2

Date: _____

Time: _____

Monitor Number	Name	Value	Units	Warning	Alarm	Low Range	High Range
2R1A	CR, General Area (GA)		mR/hr	W	A	1E-01	1E+04
2R1B	CR Intake Duct		CPM	W	A	1E+01	1E+06
2R3	Chem Lab, GA		mR/hr	W	A	1E-01	1E+04
2R4	Charging Pump, GA		mR/hr	W	A	1E-01	1E+04
2R5	Spent Fuel Pool		mR/hr	W	A	1E-01	1E+04
2R6A	Primary Sample Lab		mR/hr	W	A	1E-01	1E+04
2R9	New Fuel Storage, GA		mR/hr	W	A	1E-01	1E+04
2R13A	Fan Coil Cooling		CPM	W	A	1E+01	1E+06
2R13B	Fan Coil Cooling		CPM	W	A	1E+01	1E+06
2R13C	Fan Coil Cooling		CPM	W	A	1E+01	1E+06
2R15	Condenser Air Ejector		CPM	W	A	1E+01	1E+06
2R17A	Component Cooling H ₂ O		CPM	W	A	1E+01	1E+06
2R17B	Component Cooling H ₂ O		CPM	W	A	1E+01	1E+06
2R18	Liquid Waste Release		CPM	W	A	1E+01	1E+06
2R19A	#21 S/G Blowdown		CPM	W	A	1E+00	1E+06
2R19B	#22 S/G Blowdown		CPM	W	A	1E+00	1E+06
2R19C	#23 S/G Blowdown		CPM	W	A	1E+00	1E+06
2R19D	#24 S/G Blowdown		CPM	W	A	1E+00	1E+06
2R20B	Chem Count Room (Unit 1)		mR/hr	W	A	1E-01	1E+04
2R24A	Seal H ₂ O Injection Filter		mR/hr	W	A	1E-01	1E+06
2R24B	Seal H ₂ O Injection Filter		mR/hr	W	A	1E-01	1E+06
2R25	#1 Seal H ₂ O Filter		mR/hr	W	A	1E-01	1E+06
2R26	Rx Coolant Filter		mR/hr	W	A	1E-01	1E+06
2R27	Liquid Waste Filter		mR/hr	W	A	1E-01	1E+06
2R28	Spent Fuel Pool Filter		mR/hr	W	A	1E-01	1E+06
2R29	SFP Skimmer Filter		mR/hr	W	A	1E-01	1E+06
2R30	Refuel H ₂ O Filter		mR/hr	W	A	1E-01	1E+06
2R31	Letdown HX Failed Fuel		CPM	W	A	1E+01	1E+06
2R32A	Fuel Handling Crane		mR/hr	W	A	1E-01	1E+04
2R33	Ion Exchange Filter		mR/hr	W	A	1E-01	1E+06
2R34	South Pipe Pen		mR/hr	W	A	1E+01	1E+06
2R36	Evap and Feed H ₂ O		CPM	W	A	1E+00	1E+06
2R40	Condensate Filter		mR/hr	W	A	1E-01	1E+04
1R43	Unit 1 & 2 PV, GA		mR/hr	W	A	1E-01	1E+04
2R46	MSL Process		CPM	W	A	1E+00	1E+04
2R47	Electrical Pen High Range		mR/hr	W	A	1E-01	1E+07
2R52	PASS Room		R/hr	W	A	1E+00	1E+04

ATTACHMENT 4

Page 1 of 2

RMS QUICK REFERENCE

Salem RMS (Unit 1 and 2)

- R2** is an Area Radiation Monitor (ARM) located in Containment on the 130' elevation.
Ranges: 1E-01 to 1E+04 mR/hr.
- R7** is an ARM located in Containment on the 100' elevation, adjacent to the Seal Table Room.
Ranges: 1E-01 to 1E+04 mR/hr.
- R10A** is an ARM located in Containment on the 100' elevation next to the personnel airlock.
Ranges: 1E-01 to 1E+04 mR/hr.
- R10B** is an (ARM) located in Containment on the 130' elevation next to the personnel airlock.
Ranges: 1E-01 to 1E+04 mR/hr.
- R16** Plant Vent Stack is located in the Plant Vent duct at 194' elevation and monitors what is going out the Plant Vent stack.
Ranges: 1E+01 to 1E+06 CPM
- R34** is an ARM located in the Mechanical Penetration across from the 100' elevation Containment personnel Airlock.
Ranges: 1E-01 to 1E+06 mR/hr.
- R44A** is a High Range or Accident Area Radiation Monitor (HARM) located in Containment on the 130' elevation close to the personnel airlock.
Ranges: 1E+00 to 1E+07 R/hr.
- R44B** is a (HARM) located in Containment on the 100' elevation between the R10A and R7 ARMs.
Ranges: 1E+00 to 1E+07 R/hr.
- R47** is an ARM located in the 78' Electrical Penetration. The PASS lines are located in the overhead. The skid and PASS lines may be the source of any increase in this area. This Penetration has its own ventilation flow path and will vent directly into the atmosphere. There is a potential for an unmonitored release from this Penetration.
Ranges: 1E-01 to 1E+07 mR/hr

ATTACHMENT 4

Page 2 of 2

NOTE

- All emergency Grab Samples (Noble Gas, Iodine and Particulate) should be taken from the R45 Skid located in the R45 Shed.
- Only one of the following Effluent Monitors (R41A, R41B, R41C, R45B or R45C) readings should be used in MIDAS Manual Mode.

R41A is the Low Range Noble Gas Monitor and is located on the R41 Sample Skid on the 122' elevation of the Auxiliary Building next to the door to the stairs.

Ranges: 1E-07 to 1E-01 uCi/cc

R41B is the Mid Range Noble Gas Monitor and is located on the R41 Sample Skid on the 122' elevation of the Auxiliary Building next to the door to the stairs.

Ranges: 1E-04 to 1E-02 uCi/cc

R41C is the High Range Noble Gas Monitor and is located on the R41 Sample Skid on the 122' elevation of the Auxiliary Building next to the door to the stairs.

Ranges: 1E-01 to 1E+05 uCi/cc

R41D is the Effluent Noble Gas Monitor and is located on the R41 Sample Skid on the 122' elevation of the Auxiliary Building next to the door to the stairs.

Ranges: 0E+00 to 1E+13 uCi/Sec

(The R41D should not be used in MIDAS to perform manual dose assessment calculations)

R45B is the "Backup" Mid Range Noble Gas Monitor and is located in the R45 Shed behind the Fuel Handling Building. This monitor should not be used unless the R41 monitors are inoperable.

Ranges: 1E-03 uCi/cc to 1E+01 uCi/cc

R45C is the "Backup" High Range Noble Gas Monitors and is located in the R45 Shed behind the Fuel Handling Building. This monitor should not be used unless the R41 monitors are inoperable.

Ranges: 1E-01 uCi/cc to 1E+05 uCi/cc

ATTACHMENT 5

Page 1 of 9

OPERATING INSTRUCTIONS FOR THE R-45 CONTROL TERMINAL

1.0 INFORMATION CONCERNING THE R-45 CONTROL TERMINAL

- On the front panel of the R-45 Console (see DETAIL A of Figure 1) there are six **System Status Annunciators**. Below is a brief explanation of each.
- The **NORMAL (green)** light will be lit if any channel in the system is NORMAL or ALARM OFF.
- All lights will be off if none of the channels in the system have been initialized.
- The **MAINTENANCE (white)** light will be lit if any channel in the system is in "Calibrate", "Maintenance", or "Check Source" status; "Standby" or "Flush" mode; or if any field unit is in "Local Control" (at the shed).
- The **FAIL (yellow)** light will be lit if any channel in the system is in "Fail External", "Fail High", or "Fail Low" status. This light will be lit if any field unit is determined to have lost AC power or to have failed via the communications programs.
- The **TREND (yellow)** light will be lit if any channel in the system has determines a trend alarm rate.
- The **ALERT (yellow)** light will be lit if any channel in the system has determined an alert alarm level.
- The **HIGH ALARM (red)** light is lit when any channel in the system is in "High Alarm" or "Flow Alarm" status. On a new alarm condition, the light will be flashing until the switch (button) is depressed, which causes the light to stay on but silences the audible alarm.
- The **AUDIBLE ALARM** sounds at any change of status on any channel in the system. This annunciation is an audible beep of approximately 1 second duration. Also, it sounds when the system is first started (or restarted) and when a high alarm occurs. The alarm will sound until the HIGH ALARM light is depressed, thus acknowledging the condition.

ATTACHMENT 5**Page 2 of 9**

- While entering commands onto the keyboards and after the operator finishes, information is displayed on the digital data display located above the keyboards (see Figure 1). If after approximately 15 seconds the operator does not touch the keyboards, the system returns to the ready mode (time and date are the only items displayed) and the operator may begin again.
- Information is obtained from the Control Terminal by entering commands on the keyboards. There are two keyboards: the Instruction Pad, and the Numeric Pad (see last page of this Attachment for diagram).
- The **RUB OUT** key functions like the backspace key on a computer keyboard, and if the operator makes an entry error he can correct it by pressing this key prior to pressing the enter key.
- Depress the up or down arrow key to see the information displayed on the digital readout.
- Depress the keys in the following order: **PRINT, FILE, ENTER** to printout the information.
- If the operator recalls a Historical Data File (**10 MIN, HOUR, or DAY**), there are additional options other than just looking at and/or printing the data. The operator can depress the **DOWN ARROW KEY** and then the **ENTER KEY** after the desired function appears on the digital display. The following is a brief explanation of each.
- **INTERPRETED** -removes all abnormal data points and replaces them with points interpolated/extrapolated from the remaining "normal" data. If there is not enough data for this, then "INSUFFICIENT DATA" will appear in the display screen, meaning you cannot obtain this function.
- **INTEGRATED** - is a summation beginning with the oldest data point.
- **AVERAGED** - a single value will be displayed which is the mathematical average of the data over the time period of the file
- **RATE OF CHANGE** - the increase over the two adjacent intervals, standardized to a "per hour" rate
- **RELEASE RATE** - allows calculation of a release rate (uCi/min); the flow rate must be entered using the Numeric Pad in cc/min.

ATTACHMENT 5

Page 3 of 9

2.0 OPERATING INSTRUCTIONS2.1 Perform the Following to Operate the R-45 Control Terminal.**NOTE**

- The operator can obtain data by performing the steps listed below. If the operator has any problems or the monitor(s) are inoperable/failed, then contact the OS and/or I&C to fix or assist in fixing the problem.
- If after approximately 15 seconds the operator does not touch the keyboards, the system returns to the ready mode (time and date are the only items displayed) and the operator may begin again.

2.1.1 OBTAIN the R45 Control Key from the Control Room Operator, OS or I & C. _____

2.1.2 INSERT the key into the "Command Enable" slot and turn clockwise. _____

NOTE

The data received from the SA-16 (Particulate and Iodine Channel) includes events from fission gas in the sample collector. The SA-16 radioiodine data is valid only when the "FLUSH" has been turned on. While the system is in "FLUSH" Mode, information can be obtained on the SA-16 channel. **During this period the noble gas channels are not sampling plant vent flow and the data coming from them is NOT valid.** The "FLUSH" mode should be used only for the time period required to obtain radioiodine data from the SA-16 detector.

ATTACHMENT 5

Page 4 of 9

2.1.3 DEPRESS the following keys, to enter the Flush Mode:

- A. FLUSH _____
- B. ON _____
- C. 1 for Unit 1 _____
- D. 2 for Unit 2 _____
- E. ENTER _____

2.1.4 Leave the Flush Mode by depressing the following keys:

- A. FLUSH _____
- B. OFF _____
- C. 1 for Unit 1 _____
- D. 2 for Unit 2 _____
- E. ENTER _____

2.1.5 DEPRESS the **PRINT**, **ENTER** keys to obtain the current status of all monitors/channels in a hard copy printout. _____

NOTE

The following Channel Numbers represent these specific monitors.

CHANNEL NUMBER	MONITOR REPRESENTED BY THE NUMBER
1	R45D (SA-16) Particulate and Iodine
2	R45A (SA-15) Noble Gas Background Subtract
3	R45C (SA-15) High Range Noble Gas
4	R45B (SA-14) Medium Range Noble Gas

2.1.6 DEPRESS the following keys, to obtain the current reading for a specific channel on the readout digital display:

- A. DATA _____
- B. 1 for Unit 1 _____

ATTACHMENT 5

Page 5 of 9

- C. 2 for UNIT 2 _____
- D. DOWN ARROW _____
- E. CHANNEL NUMBER _____
- F. ENTER _____
- G. DOWN ARROW _____

Example:

DATA, 1, DOWN ARROW, 3, ENTER, DOWN ARROW. This will display current data for R45C, UNIT 1

2.1.7 DEPRESS the following keys, to obtain a printout of the above data:

- A. PRINT _____
- B. FILE _____
- C. ENTER _____

2.1.8 DEPRESS the following keys, to obtain "10 MINUTE HISTORICAL DATA" for a specific channel that is displayed on the digital readout display. Choose only one type of historical data at a time.

- A. HIST 10 MIN _____
- B. 1 for Unit 1 _____
- C. 2 for Unit 2 _____
- D. DOWN ARROW _____
- E. CHANNEL # _____
- F. ENTER _____
- G. UP ARROW _____

2.1.9 DEPRESS the following keys, to obtain "HOUR HISTORICAL DATA" for a specific channel that is displayed on the digital readout display. Choose only one type of historical data at a time.

- A. HIST HOUR _____
- B. 1 for Unit 1 _____
- C. 2 for Unit 2 _____
- D. DOWN ARROW _____

ATTACHMENT 5

Page 6 of 9

- E. CHANNEL #** _____
- F. ENTER** _____
- G. UP ARROW** _____

2.1.10 DEPRESS the following keys, to obtain "DAY HISTORICAL DATA" for a specific channel that is displayed on the digital readout display. Choose only one type of historical data at a time.

- A. HIST DAY** _____
- B. 1 for Unit 1** _____
- C. 2 for Unit 2** _____
- D. DOWN ARROW** _____
- E. CHANNEL #** _____
- F. ENTER** _____
- G. UP ARROW** _____

Example:

HIST HOUR, 2, DOWN ARROW, 4, ENTER, UP ARROW. This will display the 24 most recent averages for channel R45B on Unit 2

2.1.11 DEPRESS the following keys, to obtain a printout of the historical file specified:

- A. PRINT** _____
- B. FILE** _____
- C. ENTER** _____

3.0 ADDITIONAL KEYBOARD OPERATIONS

3.1 Perform the Following Steps to Silence/Clear Alarms, Turn On/Off Pump, or Expose a Check Source

- 3.1.1 OBTAIN the R45 key from I & C or the OS. _____
- 3.1.2 INSERT the key into the "Command Enable" slot and turn the key clockwise. _____
- 3.1.3 DEPRESS the following, to silence an alarm on a specified channel and unit:
 - A. ALM ACK** _____

ATTACHMENT 5

Page 7 of 9

- B. 1 for Unit 1 _____
- C. 2 for Unit 2 _____
- D. DOWN ARROW _____
- E. CHANNEL NUMBER _____
- F. ENTER _____

3.1.4 DEPRESS the following keys, to clear high alarms for a specified channel and unit:

- A. ALM CLR _____
- B. 1 for Unit 1 _____
- C. 2 for Unit 2 _____
- D. DOWN ARROW _____
- E. CHANNEL NUMBER _____
- F. ENTER _____

3.1.5 DEPRESS the following keys, to turn the 6 lpm pump on or off:

- A. PUMP _____
- B. ON or OFF _____
- C. 1 for Unit 1 _____
- D. 2 for Unit 2 _____
- E. ENTER _____

3.1.6 DEPRESS the following keys, to expose the check source to a specified detector/channel:

- A. CK SRC
- B. 1 for Unit 1
- C. 2 for Unit 2

ATTACHMENT 5

Page 8 of 9

D. DOWN ARROW

E. CHANNEL # (3 or 4)

F. ENTER

3.1.7 DEPRESS the following keys, to disable/re-enable the alarm function of specified channel and Unit:

A. ALM

B. OFF or ON

C. 1 for Unit 1

D. 2 for Unit 2

E. DOWN ARROW

F. CHANNEL #

G. ENTER

3.1.8 DEPRESS the following keys, with the "Command" enable turned off and the key removed, to display the operational parameters of a specified channel and Unit:

A. FILE

B. 1 for Unit 1

C. 2 for Unit 2

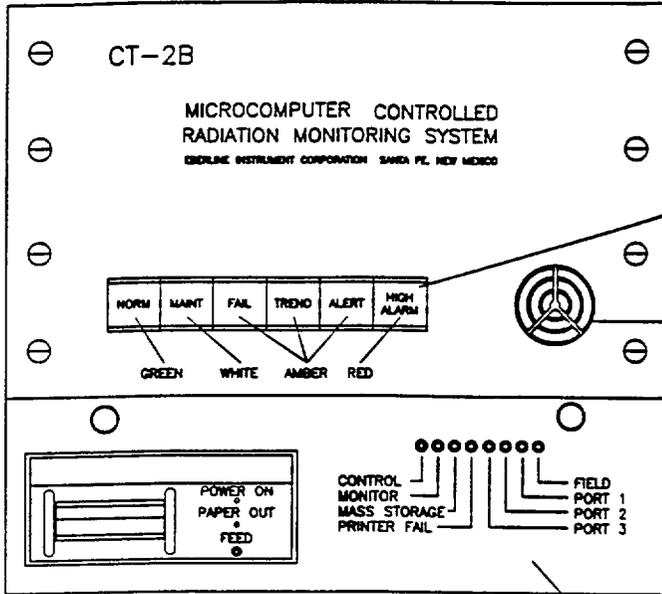
D. DOWN ARROW

E. CHANNEL #

F. ENTER

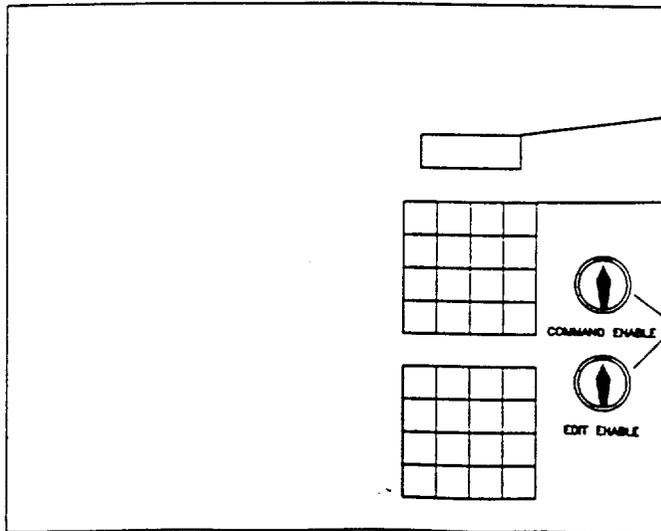
ATTACHMENT 5

Page 9 of 9

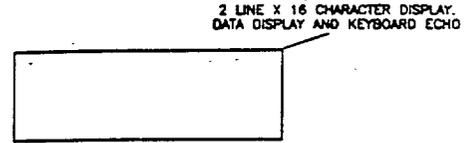


DETAIL A
SYSTEM ANNUNCIATOR PANEL

(DRAWER, PULLS OUT TO EXPOSE DETAIL B)



DETAIL B
SYSTEM CONTROLLER PANEL



HIST MIN	HIST 10 MIN	HIST HOUR	HIST DAY
DATA	CK SRC	ALM ACK	ALM CLR
FILE	FILT STEP	FLUSH	ALM
PRINT	OFF ON	PUMP	STND BY

Instruction Pad

ENTER	7	8	9
EDIT	4	5	6
↑	1	2	3
↓	0	.	RUB OUT

Numeric Pad

DETAIL C

TYPICAL KEYBOARD

ATTACHMENT 6

Page 1 of 2

OPERATING INSTRUCTIONS FOR THE SALEM UNIT 2 RMS COMPUTER

NOTE

- This attachment provides guidance to allow access to the RMS computer for Unit 2. The main display indicates status (alarm, warning, no scan etc).
- Check the RMS computer time in the upper right hand corner of the screen with the Control Room clock. If the time is approximately correct and the seconds are updating, the data will be current. If the time/date is "frozen", current data is not available. I&C RMS supervisor should be contacted. The time/date that appears should be the time the system malfunctioned.
- When obtaining RMS data without the computer, use RP1 panel & rack room strip charts.

1.0 OPERATING INSTRUCTIONS FOR THE SALEM UNIT 2 RMS COMPUTER

1.1 Perform the Following to Operate the Unit 2 RMS Computer

1.1.1 DEPRESS the following keys, to access all of the RMS monitor values:

- A. Enable and Plant Location simultaneously _____
- B. "E" for all monitors _____
- C. <CR> _____

NOTE

Any monitor in warning or alarm must be rechecked by strip chart integration in the rack room, behind the Control Room. Unit 2 strip chart recorders are limited, so data history must be checked by 15 minute averages on the computer.

1.1.2 PERFORM the following, for fifteen minute average data:

ATTACHMENT 6
Page 2 of 2

- A. DEPRESS the **ENABLE & BARGRAPH** keys simultaneously.
 The bottom line on the screen will ask hourly or 15 minute
 average. _____
- B. DEPRESS **M & <CR>** keys. Computer will then tell
 you to enter channel. _____
- C. ENTER the monitor channel you wish to see (i.e."C2R16"). _____
- D. DEPRESS the **<CR>** key. You will be asked to enter scale. _____

NOTE

Fifteen Minute averages begin and end on the quarter hour. Data is located to the left of the appropriate entry. Do not use "latest" data line as it is a 30 second average.

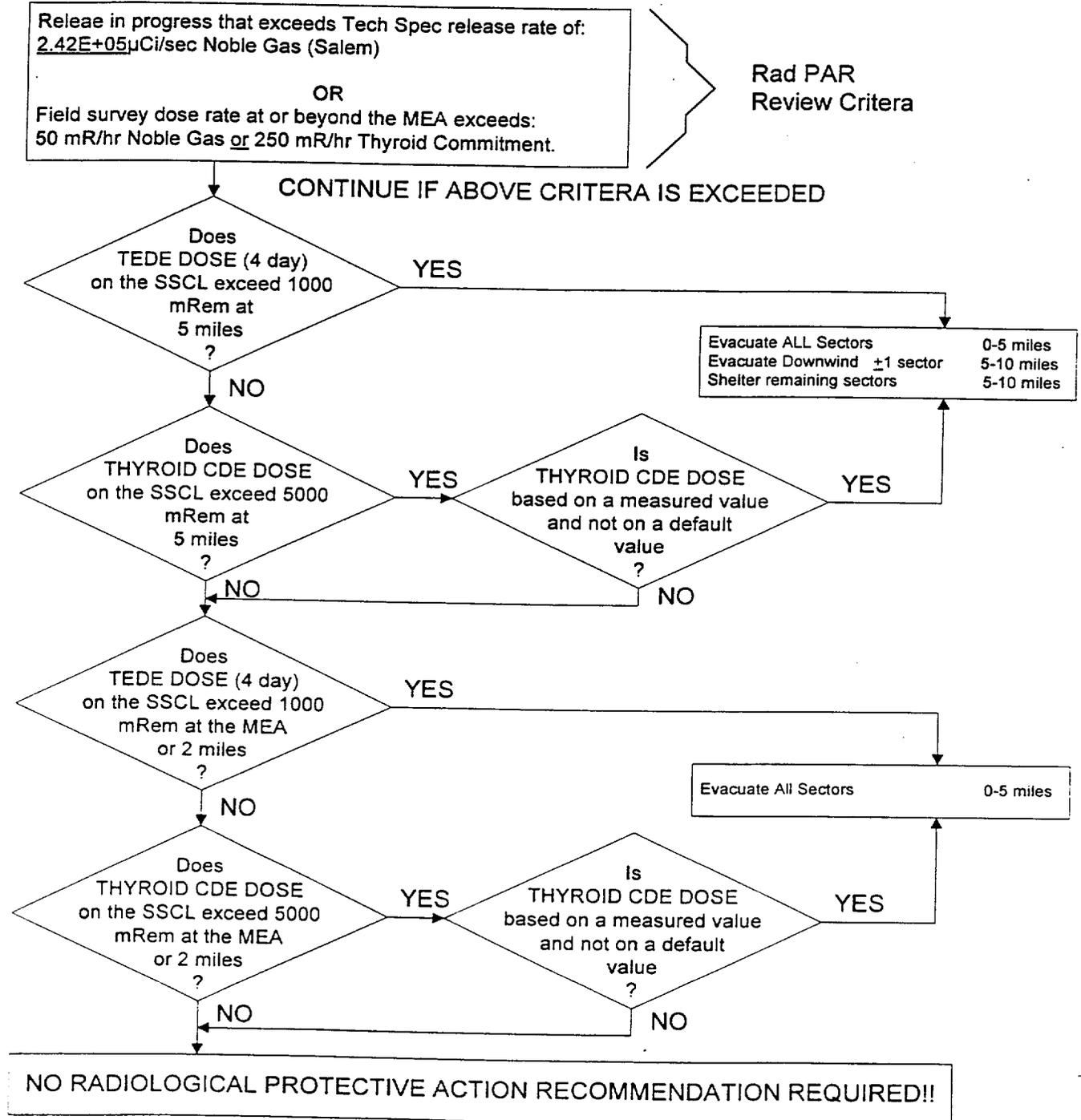
- E. DEPRESS the **<CR>** key and the scale will be automatically
 adjusted & "auto range on" will be displayed. This mode will
 provide the four latest 15 minute averages only. The top entry
 is the oldest data, the bottom entry is the current 15 minute
 average data. _____
- F. IF other 15 minute averages are needed for other monitor channels
 while in bar graph mode,
 THEN enter channel number (i.e. "C2R16"). _____
- G. DEPRESS the **<CR>** key. Data/status will be provided. _____

ATTACHMENT 7

Page 1 OF 1

RADIOLOGICALLY BASED PROTECTIVE ACTION RECOMMENDATION FLOWCHART

Initial Conditions: If Rad PAR review criteria is not exceeded, Rad PAR is not required.



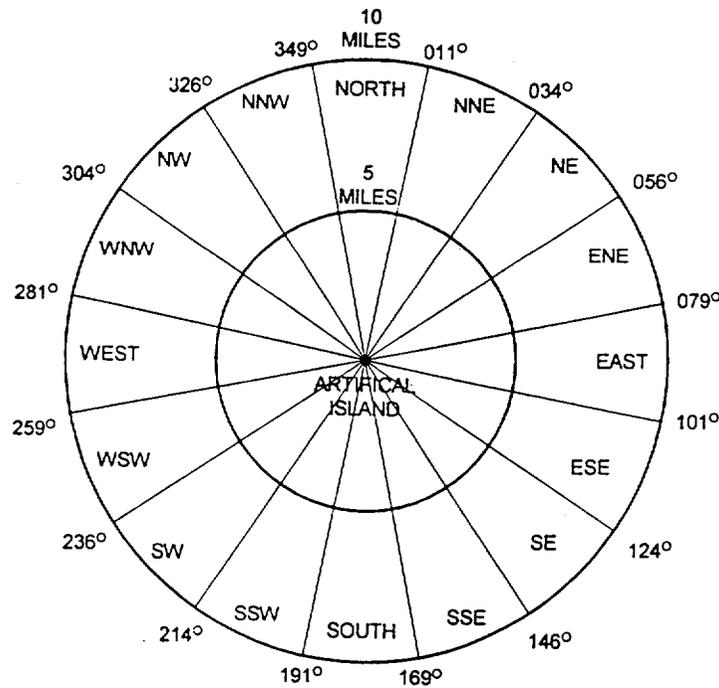
ATTACHMENT 7

Page 2 of 2

Recommended Protective Action Guidelines

WIND DIRECTION FROM DEGREES	COMPASS		PAR AFFECTED SECTORS DOWNWIND ±1 SECTORS
349 - 011	N	⇒	SSE - S - SSW
011 - 034	NNE	⇒	S - SSW - SW
034 - 056	NE	⇒	SSW - SW - WSW
056 - 079	ENE	⇒	SW - WSW - W
079 - 101	E	⇒	WSW - W - WNW
101 - 124	ESE	⇒	W - WNW - NW
124 - 146	SE	⇒	WNW - NW - NNW
146 - 169	SSE	⇒	NW - NNW - N
169 - 191	S	⇒	NNW - N - NNE
191 - 214	SSW	⇒	N - NNE - NE
214 - 236	SW	⇒	NNE - NE - ENE
236 - 259	WSW	⇒	NE - ENE - E
259 - 281	W	⇒	ENE - E - ESE
281 - 304	WNW	⇒	E - ESE - SE
304 - 326	NW	⇒	ESE - SE - SSE
326 - 349	NNW	⇒	SE - SSE - S

NOTE: CONSIDER ADDING A SECTOR TO THE PAR IF THE WIND DIRECTION (FROM) IS WITHIN ± 3° OF A SECTOR DIVIDING LINE.



ATTACHMENT 8

Page 1 of 1

ONSITE PROTECTIVE ACTION GUIDELINES

1.0 RADIATION LEVELS

<u>Dose Rate (mR/hr)</u>	<u>Location</u>	<u>Action</u>
≥ 100	Onsite	Evacuation of all nonessential personnel. Consider evacuation of other personnel.

<u>Dose Rate (mR/hr)</u>	<u>Location</u>	<u>Action</u>
≥ 100	Control Room OSC TSC Control Point	Consider evacuation within one hour, and/or relocation as appropriate.

<u>Dose Rate (mR/hr)</u>	<u>Location</u>	<u>Action</u>
≥ 1000	Onsite	Evacuation of all nonessential personnel Consider immediate evacuation of remaining personnel.

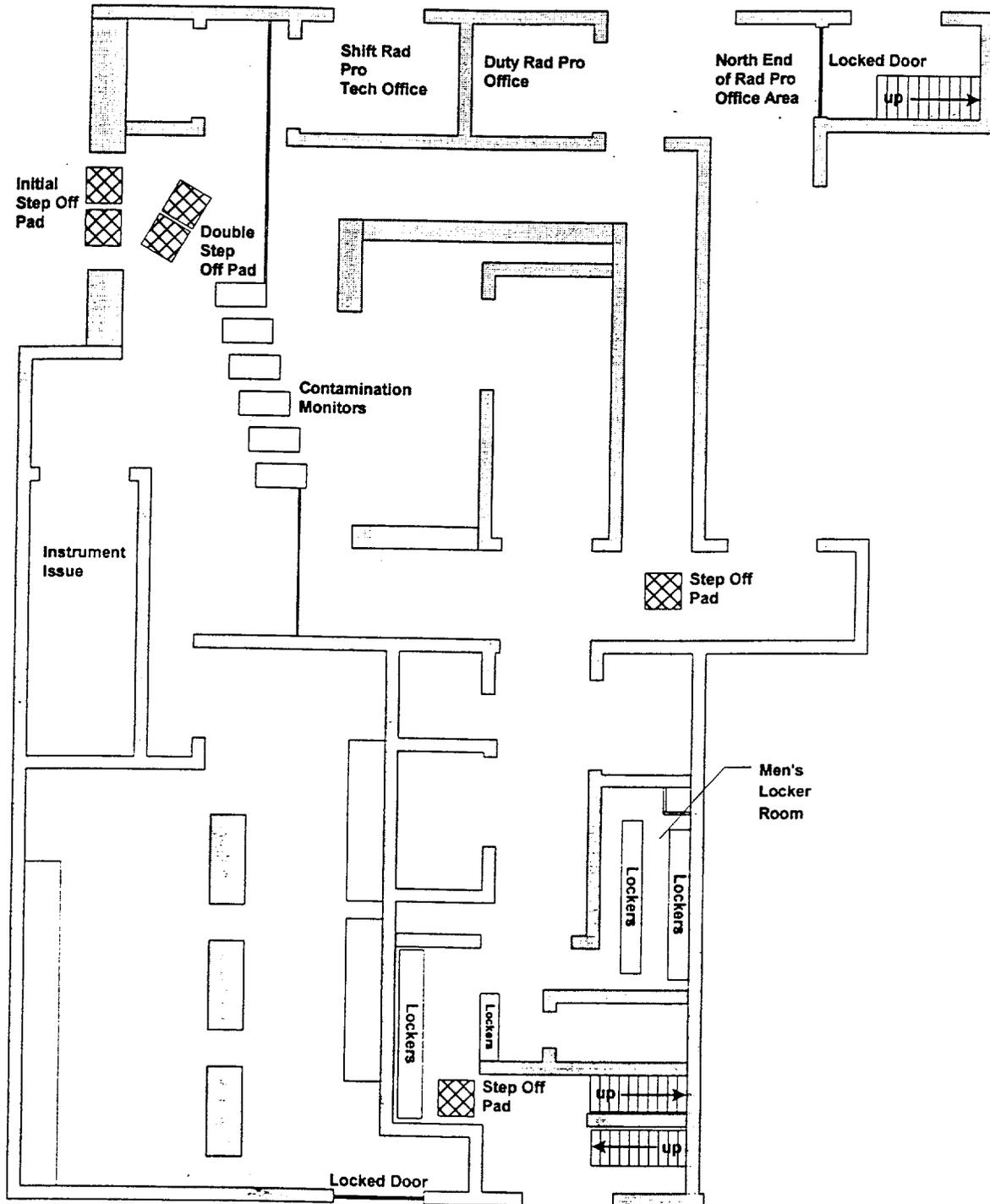
<u>Dose Rate (mR/hr)</u>	<u>Location</u>	<u>Action</u>
≥ 1000	Control Room OSC TSC Control Point	Consider immediate evacuation, and/or relocation upwind of the plume.

2.0 RADIOIODINE

If the Iodine-131 equivalent is calculated or measured in concentrations greater than or equal to $5.0E-7$ uCi/cc, consider the use of Potassium Iodide for thyroid blocking. This section is to be applied to areas, in which personnel are working or are planning to work. Refer to Emergency Procedure NC.EP-EP.ZZ-0305(Q), Stable Iodine Thyroid Blocking, for additional information.

ATTACHMENT 9
Page 1 of 1

CONTAMINATION CONTROL GUIDANCE



ATTACHMENT 10

Page 1 of 3

STEAM GENERATOR TUBE LEAK/RUPTURE GUIDELINES

1.0 STEAM GENERATOR TUBE LEAK/RUPTURE GUIDELINES1.1 Refer to the Following Guidelines for Assistance During a Steam Generator Tube Leak/Rupture.

- 1.1.1 REFER to SC.RP-TI.RM-0607(Q) Primary To Secondary Leak Rate Calculation Based on R15 or R19 Data, to monitor steam generator leak rate. Keep the OS informed of leak rates.

NOTE

- A Steam Generator Tube Rupture (SGTR) that occurs without a breach of the Main Steam Line(s) (MSL) will be a monitored, but unfiltered release. The Plant Vent Effluent Radiation Monitors (R41A – C & R45B – C) should detect this release and dose assessment may be performed using the appropriate Plant Vent Effluent Radiation Monitor.
- Dose assessment may be performed in the case of a breach of the MSL, or the appropriate R46 monitor being out of service, by taking a dose rate on a **PRE-EXISTING TELETECTOR RAD MONITORING LOCATION** of the affected MSL.
- The **PRE-EXISTING TELETECTOR RAD MONITORING LOCATIONS** are at the bend of the MSL, prior to the Main Steam Isolation Valves. Refer to EPIP 309S, Dose Assessment, Attachment 1, for a diagram.

- 1.1.2 IF appropriate, THEN perform dose assessment using a dose rate taken from the MSL and inputting it into MIDAS IAW Attachment 3 of NC.EP-EP.ZZ-0309(Q), Dose Assessment, using the predetermined teletector correction factor of (9.33E-05).

- 1.1.3 CONSIDER setting up contamination controls for the Turbine Building due to pre-existing leaks should be considered contaminated. (Contamination levels could increase to "Contamination Area" values due to the secondary side being contaminated from the primary side).

ATTACHMENT 10**Page 2 of 3**

- 1.1.4 IF radiological conditions in the area warrant it, THEN establish the Turbine Building or portions of the Turbine as Radiation Areas or High Radiation Areas (The dose rates could increase to these levels due to the secondary side being contaminated by the primary side).

NOTE

- The possibility exists that the entire Protective Area for Salem and Hope Creek could become a contaminated area where only clean islands exist.
- All areas of water found on Plant surfaces/floors and in the Yard, should be considered contaminated, until proven otherwise.

- 1.1.5 CONSIDER setting up contamination controls promptly, to ensure that the Control Room/OSC, Control Point, TSC and Main Guard House are maintained as clean islands.

- 1.1.6 CONSIDER the following items to help maintain these areas as clean islands:

- DELIVER Shoe covers, gloves, friskers, PC and waste Containers to the Control Room/OSC.
- DRESS Anyone exiting the CR/OSC clean area in shoe covers and gloves.
- FRISK all personnel prior to entering the CR/OSC.
- DECONTAMINATE all contaminated persons, as time and manpower permits.
- PREVENT contaminated persons or items/equipment from entering into clean areas without Supervision's approval.

ATTACHMENT 10

Page 3 of 3

- **SETUP** the entrance(s) to the Main Guard House, with step off pads, friskers, PC and waste containers, as time and manpower permits.
- **DELIVER** shoe covers and gloves to the Guard House, to be worn by anyone exiting the guard house into the Protected Area, as time and manpower permits.
- **REQUEST** the OS for additional support from Hope Creek to assist with appropriate tasks, if thought necessary.

PSEG NUCLEAR

NC.EP-EP.ZZ-0302 (Q) - REV. 02

RADIOLOGICAL ASSESSMENT COORDINATOR RESPONSE

USE CATEGORY: II

PSE&G

CONTROL

COPY # EPIPO59

REVISION SUMMARY:

1. This revision satisfies the requirement for a biennial review.
2. Added step 3.1.7 to remind the Radiological Assessment Coordinator to follow-up on instructions to ensure they are being followed in a timely manner or have been completed.
3. Added a bullet to step 1.1.7 in Attachment 2 that was inadvertently deleted from non-NAP - 1 procedure.

IMPLEMENTATION REQUIREMENTS

This procedure is effective for use upon issue.

9-14-00

APPROVED: _____



Manager - EP & IT

9/14/00
Date

APPROVED: _____

N/A
Vice President - Operations

N/A
Date

RADIOLOGICAL ASSESSMENT COORDINATOR RESPONSE

TABLE OF CONTENTS

Section	Title	Page
	TABLE OF CONTENTS	1
1.0	PURPOSE	2
2.0	PREREQUISITES	2
	2.1 Prerequisites To Be Followed Prior To Implementing This Procedure ...	2
3.0	PRECAUTIONS AND LIMITATIONS.....	2
	3.1 Precaution and Limitations To Be Followed Prior To Implementing This Procedure	2
4.0	EQUIPMENT REQUIRED	3
5.0	PROCEDURE.....	3
	5.1 The RAC/RPS - Offsite Should Perform the Following:	3
6.0	RECORDS.....	3
7.0	REFERENCES	3
	7.1 References.....	3
	7.2 Cross References	3
ATTACHMENTS		
	ATTACHMENT 1 - TSC Pre - Activation Checklist	5
	ATTACHMENT 2 - RAC Checklist	7
	ATTACHMENT 3 - Onsite Protective Action Guidelines	12
	ATTACHMENT 4 - TSC Evacuation Checklist.....	13
	ATTACHMENT 5 - RMS Quick Reference.....	16

1. PURPOSE

To outline and describe the Radiological Assessment Coordinator's (RAC) duties.

2. PREREQUISITES

2.1 Prerequisites To Be Followed Prior To Implementing This Procedure

Implement this procedure at:

- The discretion of the OS
- The discretion of the EDO.
- Upon the manning of the TSC.

3. PRECAUTIONS AND LIMITATIONS

3.1 Precaution and Limitations To Be Followed Prior To Implementing This Procedure

- 3.1.1 Steps listed in this procedure may be performed in the order deemed appropriate for the emergency situations. Only steps applicable to the specific emergency need be performed.
- 3.1.2 Approval of the OS is required prior to the issuance of Potassium Iodide (KI) until a qualified RAC assumes his duties. The authority to designate when and who should receive KI shifts from the OS to the RAC for all Onsite Personnel at this time IAW NC.EP-EP.ZZ-0305(Q), Stable Iodine Thyroid Blocking. The duty of authorizing KI cannot be delegated or assumed by any other position.
- 3.1.3 The Radiation Protection – Offsite (RPS-Offsite) should assume the RAC's duties until relieved by a qualified RAC. Duties the RPS-Offsite **CANNOT PERFORM** have asterisks next to them.
- 3.1.4 Medical care takes priority over any radiological conditions, unless the radiological conditions are life threatening.
- 3.1.5 It is recommended that initials be used in the step performance check offs/sign-offs, instead of checkmarks, if more than one person may implement this procedure.
- 3.1.6 Personnel who implement this procedure shall be trained and qualified IAW the Emergency Plan.
- 3.1.7 The Radiological Assessment Coordinator needs to follow-up on instructions to ensure they are being followed in a timely manner or have been completed.

4.0 **EQUIPMENT REQUIRED**

As provided at the Control Point, Control Room, and TSC.

5.0 **PROCEDURE**

5.1 **The RAC/RPS-Offsite Should Perform the Following:**

5.1.1 IF the TSC is not yet activated, THEN IMPLEMENT Attachment 1, TSC Pre - Activation Checklist. _____

5.1.2 IF the TSC is activated, THEN IMPLEMENT Attachment 2, RAC Checklist. _____

5.1.3 IF Onsite Protective Actions are necessary, THEN IMPLEMENT Attachment 3, Onsite Protective Action Guidelines. _____

5.1.4 IF the TSC needs to be evacuated, THEN IMPLEMENT Attachment 4, TSC Evacuation Checklist. _____

5.1.5 IF information is needed concerning the Hope Creek or Salem Radiological monitoring System, THEN refer to Attachment 5, RMS Quick Reference. _____

6.0 **RECORDS**

Return completed procedure and any information or data thought to be pertinent by the dose assessor, to the Manager – EP & IT.

7.0 **REFERENCES**

7.1 **References**

7.1.1 Roger E. Linnemann, M.D., President of Radiation Management Consultants, Clinical Associate Professor of Radiation Oncology at the University of Pennsylvania School of Medicine.

7.1.2 Nuclear Business Unit Emergency Plan

7.2 **Cross References**

7.2.1 Nuclear Business Unit Emergency Plan

7.2.2 NC.EP-EP.ZZ-0404(Q) Protective Action Recommendations (PARS) Upgrades.

7.2.3 NC.EP-EP.ZZ-0304(Q), OSC – Radiation Protection Response.

7.2.4 NC.EP-EP.ZZ-0305(Q), Stable Iodine Thyroid Blocking.

7.2.5 NC.EP-EP.ZZ-0309(Q), Dose Assessment.

7.2.6 NC.EP-EP.ZZ-0310(Q), Radiation Protection Supervisor – Offsite and Field Monitoring Team Response.

ATTACHMENT 1

Page 1 of 2

TSC PRE - ACTIVATION CHECKLIST

DATE: ___/___/___

TIME: ____:____

1.0 RAC's INITIAL ACTIONS

1.1 Perform the Following:

- 1.1.1 PERFORM or ASSIGN a Radiation Protection Technician (RPT) to check the dose rates in the TSC. _____
- 1.1.2 COMPARE the dose rates with the habitability criteria found in Attachment 3, Onsite Protective Action Guidelines. _____
- 1.1.3 IF the evacuation limits found in Attachment 3 are exceeded, THEN refer to Attachment 4, TSC Evacuation, and suggest an alternate TSC location to the EDO. _____
- 1.1.4 OBTAIN a briefing from the SRPT concerning the Plant's radiological conditions. _____
- 1.1.5 OBTAIN a briefing from the EDO concerning the Plant's Operational condition. _____
- 1.1.6 DIRECT the RPS-Offsite to implement NC.EP-EP.ZZ-0310, RPS-Offsite and Field Monitor Team Response _____
- 1.1.7 IF the RPS-Offsite has **NOT** arrived at the TSC, THEN IMPLEMENT Attachment 1, TSC Pre-activation Checklist, of NC.EP-EP.ZZ-0310, RPS-Offsite and Field Monitor Team Response, until the RPS – Offsite arrives. _____

ATTACHMENT 1

Page 2 of 2

1.1.8 ENSURE the following tasks are being performed by the RSP-Offsite or Radiation Protection Technicians (RPTs). _____

NOTE

The TSC radiological assessment should not be generating the official Page 2 of the Station Status Checklist (SSCL) until the TSC is activated and the SRPT is informed the TSC is activated and the TSC radiological assessment personnel will be taking over the generation of the SSCL, Page2.

- Page 2 of the Station Status checklist (SSCL) is being generated. _____
- A continuous air monitor sampler (AMS III) is set up outside the TSC entrance. _____
- That Radiation Protection Emergency Equipment is available and operational in the TSC. _____
- ALL persons in the TSC have a TLD, or issue them one. _____
- Habitability checks are performed every 30 minutes. _____

1.1.9 IMPLEMENT Attachment 2, RAC Checklist, upon completion of this Attachment or when the TSC is activated. _____

- TSC PRE-ACTIVATION CHECKLIST COMPLETED: _____:_____
(TIME)
- TSC ACTIVATED: _____ / _____
(TIME)

**ATTACHMENT 2
Page 1 of 5
RAC CHECKLIST**

DATE: ___/___/___

TIME: ____:____

1.0 RAC's DUTIES

1.1 Perform the Following:

- 1.1.1 ENSURE dose rates in the TSC are being check every 30 minutes. _____
- 1.1.2 COMPARE the dose rates with the habitability criteria found in Attachment 3, Onsite Protective Action Guidelines. _____
- 1.1.3 IF the evacuation limits found in Attachment 3 are exceeded, THEN REFER to Attachment 4, TSC Evacuation, and suggest an alternate TSC location to the EDO. _____
- 1.1.4 ADVISE the EDO on all Station, Onsite, and Offsite radiological conditions, when thought appropriate. _____
- 1.1.5 DIRECT the RPS-Offsite to continue to implement NC.EP-EP.ZZ-0310, RPS-Offsite and Field Monitor Team Response _____

NOTE

Technical Specification Noble Gas Release Rate Limits are:

Hope Creek: 1.2E+04 uCi/Sec.

Salem: 2.42E+05 uCi/Sec.

- 1.1.6 IF fuel damage has occurred, or thought to have occurred, THEN request Chemistry to put PASS into recirculation and ask that PASS is taken when the Fuels Engineer and Chemistry Supervisor believe it is appropriate. _____

ATTACHMENT 2

Page 2 of 5

1.1.7 IF the potential is thought to be high that a Radiological Release above technical specifications, a Chemical Release, or a Gaseous Release may occur, or an actual Radiological Release above technical specifications, Chemical Release, or Gaseous Release is in progress

THEN:

- NOTIFY the EDO. _____

- **ONLY IF A RADIOLOGICAL RELEASE ABOVE TECHNICAL SPECIFICATIONS IS IN PROGRESS**
 - A. REQUEST the EDO to ask the Control Room to make a page announcement saying, "A Radiological Release Is in Progress." _____

 - B. REQUEST a FRVS sample (iodine at minimum) be obtained. _____

- **ONLY IF THE POTENTIAL OF A RADIOLOGICAL RELEASE IS THOUGHT TO BE HIGH**
 - A. REQUEST the EDO to NOTIFY the Control Room of this. _____

 - B. NOTIFY the Control Point, OSC, and EOF of the potential for a Radiological Release is thought to be high. _____

- NOTIFY the TSS at **HOPE CREEK and SALEM** to:
 - A. Place the TSC Emergency Filter Unit in service in the Pressurization Mode for radiological releases. _____

 - B. Place the TSC Emergency Filter Unit in service in the Recirculation Mode for chemical or other gaseous releases. _____

- COORDINATE with the Radiological Support Manager (RSM) the moving of any equipment thought essential from the Security Center and the Process Center, if thought the equipment could be in the path of the Plume. _____

NOTE

Persons/vehicles leaving or entering the Owner Controlled Area (OCA) should be coordinated with the Security Liaison and the RSM, if the EOF is manned or activated.

- RECOMMEND travel routes

ATTACHMENT 2

Page 3 of 5

NOTE

Any Steps with an asterisk (*) next to them may not be delegated to anyone but another qualified RAC. These steps have **RAC** written under them.

1.1.8 * REVIEW the appropriate ECG sections and provide the EDO with Event Classification Recommendations, as necessary.

_____ **RAC**

1.1.9 * IMPLEMENT NC.EP-EP.ZZ-404, Protective Action Recommendations (PARS) Upgrades, and provide the EDO with appropriate Radiological PARs, as thought necessary.

_____ **RAC**

NOTE

Contamination controls consist of the following:

- No eating, drinking, or smoking.
- Setting up Step Off Pads (SOP).
- Placing Friskers next to SOPs.
- Establish proper postings.
- Preparing electronic dosimetry and/or SRDs for use in the TSC.
- Preparing SRDs for use by people leaving the TSC.

1.1.10 IMPLEMENT Contamination Controls for all onsite Emergency Response Facilities, including the unaffected Plants, if:

- A radiological release greater than the Noble Gas technical specifications release rate limits is in progress. _____
- The potential of a radiological release greater than the Noble Gas technical specifications release rate limits to occur is thought high. _____
- Normal RCA boundaries have been breached. _____
- At the discretion of the RAC. _____

ATTACHMENT 2

Page 4 of 5

1.1.11 IF Contamination Controls are Implemented,
THEN:

- NOTIFY the EDO Contamination Controls have been implemented. _____
- REQUEST the EDO to ask the Control Room to make a page announcement saying, "Contamination Controls are being implemented." _____
- NOTIFY the Control Room, Control Point, OSC, and EOF Contamination Controls should be implemented. _____

1.1.12 * AUTHORIZE issuing KI IAW NC.EP-EP.ZZ-0305(Q)
Potassium Iodine Administration.

RAC

NOTE

A RPT may be sent to the hospital "after the fact," if waiting for the RPT will delay the departure of the ambulance.

1.1.13 COORDINATE with the Operational Support Center Coordinator (OSCC) the evacuation of injured person(s). _____

1.1.14 DIRECT a RPT to accompany an injured person if:

- The person is contaminated. _____
- The person is potentially contaminated. _____
- A Radiological Release greater than technical specifications limits are in progress. _____
- The potential that a Radiological Release greater than technical specifications limits is thought to be high. _____

1.1.15 INFORM the RSM that an injured person is leaving the Site. _____

1.1.16 COORDINATE with the OSCC the evacuation of any person(s) receiving an exposure of 5 rem External Dose Equivalent (EDE) or greater to an appropriate medical facility, as soon as practical. _____

ATTACHMENT 2

Page 5 of 5

1.1.17 INTERFACE directly with the NRC on specific radiological issues,
as the need arises. _____

1.1.18 ARRANGE with the Administrative Support Supervisor for relief
shifts of RPTs and Chemistry Technicians. _____

1.1.19 RECOMMEND expenditures for additional radiological support
equipment/staff, as necessary. _____

1.1.20 REFER to Step 1.1 of this Attachment and follow appropriate
Steps until relieved from your duties by a qualified RAC. _____

ATTACHMENT 3

Page 1 of 1

ONSITE PROTECTIVE ACTION GUIDELINES

1.0 RADIATION LEVELS

<u>Dose Rate (mR/hr)</u>	<u>Location</u>	<u>Action</u>
≥ 100	Onsite	Evacuation of all nonessential personnel. Consider evacuation of other personnel.

<u>Dose Rate (mR/hr)</u>	<u>Location</u>	<u>Action</u>
≥ 100	Control Room OSC TSC Control Point	Consider evacuation within one hour, and/or relocation as appropriate.

<u>Dose Rate (mR/hr)</u>	<u>Location</u>	<u>Action</u>
≥ 1000	Onsite	Evacuation of all nonessential personnel Consider immediate evacuation of remaining personnel.

<u>Dose Rate (mR/hr)</u>	<u>Location</u>	<u>Action</u>
≥ 1000	Control Room OSC TSC Control Point	Consider immediate evacuation, and/or relocation upwind of the plume.

2.0 RADIOIODINE

If the Iodine-131 equivalent is calculated or measured in concentrations greater than or equal to 5.0E-7 uCi/cc, consider the use of Potassium Iodide for thyroid blocking. This section is to be applied to areas, in which personnel are working or are planning to work. Refer to Emergency Procedure NC.EP-EP.ZZ-0305(Q), Stable Iodine Thyroid Blocking, for additional information.

ATTACHMENT 4

Page 1 of 3

TSC EVACUATION CHECKLIST

Date/Time: ___ - ___ - ___ / ___ : ___

1.0 TSC EVACUATION CHECKLIST

1.1 Evacuate the TSC in the Following Manner:

NOTE

Consideration should be given to dose rates in alternate TSC prior to evacuation. Multiple evacuations are to be avoided.

1.1.1 CONSIDER where to relocate the TSC using the locations below:

- Hope Creek TSC for Salem _____
- Salem TSC for Hope Creek _____
- EOF (TSC Technical Staff only) _____
- Operations Support Center _____
- Security Center _____
- Administration Building _____

1.1.2 RECOMMEND the EDO of your selection. _____

1.1.3 Notify the RPS-EXP and the Shift Radiation Protection Technician of the evacuation of the TSC and the location of the new TSC. _____

ATTACHMENT 4

Page 2 of 3

1.1.4 DIRECT the following items be relocated to the new TSC, if thought appropriate:

- Log books _____
- Calculators _____
- Maps _____
- Portable computer software _____
- Portable radios _____
- Radiation instruments, dosimetry, stanchions, etc. _____
- Emergency Plan Implementing Procedures
 - ◆ Controlled Copy Books _____
 - ◆ Working Copy Files _____
- Event Classification Guidelines
 - ◆ Controlled Copy Books _____
 - ◆ Working Copy Files _____
- Station Procedures _____

1.1.5 DIRECT the use of protective clothing, if radiological conditions are unknown enroute to the new location. _____

1.1.6 DIRECT the use of dose rate instruments during the relocation of the TSC. _____

1.1.7 DIRECT personnel to be surveyed for contamination prior to admittance to the new TSC, if practical. _____

1.1.8 INFORM Security, the Control Room, Control Point, OSC, and EOF (if manned or activated) of the new location and phone numbers. _____

ATTACHMENT 4
Page 3 of 3

- 1.1.9 NOTIFY the Administrative Support Supervisor, if any additional resources or personnel are required due to the evacuation. _____

- 1.1.10 IMPLEMENT Attachment 1, TSC Activation Checklist, and ensure the new TSC is ready to assume its responsibilities. _____

Completed by: _____ / _____
(PRINT/SIGNATURE)

ATTACHMENT 5

Page 1 of 4

RMS QUICK REFERENCE

1.0 HOPE CREEK**NOTE**

All ARM's in the Reactor Building have maximum ranges of $1.00E+04$ mR/hr, except for the Inner Tip Room Monitor (9RX699). The Inner Tip Room Monitor's maximum range is $1.00E+07$ mR/hr.

DAPA A and DAPA B (9RX635 and 9RX636) are high range ARMs in the Drywell. DAPA "A" is approximately twice as high as DAPA B under normal operating conditions. During a LOCA in the Drywell the two monitors should start to trend closer together due to the atmospheric conditions in the Drywell affecting both monitors equally. Increases on both of these monitors while DAPA A's reading stays about twice of what DAPA B is reading, would be an indication of fuel damage.

Ranges: $1.00E+00$ to $1.00E+08$ R/hr.

Tip Room Inner ARM (9RX699) is located on 102' elevation of the Reactor Building inside the Tip Room. This monitor has the highest range of any ARM in the Reactor Building and could give an idea of what the dose rates in the Reactor Building are after the other ARMs peg out high.

Ranges: $1.00E+00$ to $1.00E+07$ mR/hr

Main Steam Line A - D monitors (9RX509-512) are four ARMs located in the ceiling of the Main Steam Tunnel. Increases in these monitors would be an indication of fuel damage. These monitors could increase due to shine from the Reactor Building, after a radiological release.

Ranges: $1.00E+00$ to $1.00E+06$ mR/hr

Safeguard Instrument Room Monitor (9RX704) is an ARM located on 77' elevation of the Reactor Building. An increase on this monitor when the reactor SCRAMs with fuel damage could be due to shine from the Torus.

Ranges: $1.00E-01$ to $1.00E+04$ mR/hr

ATTACHMENT 5**Page 2 of 4**

FRVS Effluent monitor (9RX680) monitors what is going out the FRVS Plant Vent. Under normal operating conditions Reactor Building ventilation would vent through the South Plant Vent. Under accident conditions or when manually initiated, Reactor Building Ventilation isolates and the Reactor Building will vent through the FRVS. FRVS is always a ground release. Values $\geq 1.20\text{E}+04$ uCi/Sec would be an indication that a radiological release is in progress.

Ranges: $1.00\text{E}+00$ to $1.00\text{E}+12$ uCi/Sec (THIS IS A GROUND RELEASE AT ALL TIMES).

North Plant Vent Effluent (NPV) monitor (9RX590) monitors Offgas and the chemistry lab fume hoods. NPV could be a ground or elevated release depending on the time of year and wind speed. Values $\geq 1.20\text{E}+04$ uCi/Sec would be an indication that a radiological release is in progress.

Ranges: $1.00\text{E}+00$ to $1.00\text{E}+12$ uCi/Sec (THIS COULD BE A GROUND, ELEVATED, OR SPLIT WAKE RELEASE. A SPLIT WAKE RELEASE IS NOT A TRUE GROUND OR ELEVATED RELEASE).

South Plant Vent Effluent (SPV) monitor (9RX580) monitors Service Radwaste Building, Turbine Building and the Reactor Building (if FRVS hasn't been initiated). Values $\geq 1.20\text{E}+04$ uCi/Sec would be an indication that a radiological release is in progress.

Ranges: $1.00\text{E}+00$ to $1.00\text{E}+12$ uCi/Sec (THIS COULD BE A GROUND, ELEVATED, OR SPLIT WAKE RELEASE. A SPLIT WAKE RELEASE IS NOT A TRUE GROUND OR ELEVATED RELEASE).

Hardened Torus Vent Effluent (HTV) monitor (9RX518) would be used to vent the Drywell to relieve pressure. The path it would take would be through the Torus and take advantage of the scrubbing properties of the Torus water. Control Room operators would have to open a valve to use this release path. Sampling from the PASS Torus Gas Space should be performed to provide information as to what is being released. Values $\geq 1.20\text{E}+04$ uCi/Sec would be an indication that a radiological release is in progress.

Ranges: $0.00\text{E}+00$ to $2.09\text{E}+12$ uCi/Sec (THIS IS A GROUND RELEASE AT ALL TIMES).

2.0 SALEM RMS (UNIT 1 AND 2)

R2 is an Area Radiation Monitor (ARM) located in Containment on the 130' elevation.
Ranges: $1\text{E}-01$ to $1\text{E}+04$ mR/hr.

R7 is an ARM located in Containment on the 100' elevation, adjacent to the Seal Table Room.
Ranges: $1\text{E}-01$ to $1\text{E}+04$ mR/hr.

R10A is an ARM located in Containment on the 100' elevation next to the personnel airlock.
Ranges: $1\text{E}-01$ to $1\text{E}+04$ mR/hr.

ATTACHMENT 5

Page 3 of 4

R10B is an (ARM) located in Containment on the 130' elevation next to the personnel airlock.

Ranges: 1E-01 to 1E+04 mR/hr.

R16 Plant Vent Stack is located in the Plant Vent duct at 194' elevation and monitors what is going out the Plant Vent stack.

Ranges: 1E+01 to 1E+06 CPM

R34 is an ARM located in the Mechanical Penetration across from the 100' elevation Containment personnel Airlock.

Ranges: 1E-01 to 1E+06 mR/hr.

R44A is a High Range or Accident Area Radiation Monitor (HARM) located in Containment on the 130' elevation close to the personnel airlock.

Ranges: 1E+00 to 1E+07 R/hr.

R44B is a (HARM) located in Containment on the 100' elevation between the R10A and R7 ARMs.

Ranges: 1E+00 to 1E+07 R/hr.

R47 is an ARM located in the 78' Electrical Penetration. The PASS lines are located in the overhead. The skid and PASS lines may be the source of any increase in this area. This Penetration has its own ventilation flow path and will vent directly into the atmosphere. There is a potential for an unmonitored release from this Penetration.

Ranges: 1E-01 to 1E+07 mR/hr

NOTE

- All emergency Grab Samples (Noble Gas, Iodine and Particulate) should be taken from the R45 Skid located in the R45 Shed.
- Only one of the following Effluent Monitors (R41A, R41B, R41C, R45B or R45C) readings should be used in MIDAS Manual Mode.

R41A is the Low Range Noble Gas Monitor and is located on the R41 Sample Skid on the 122' elevation of the Auxiliary Building next to the door to the stairs.

Ranges: 1E-07 to 1E-01 uCi/cc (THIS IS A GROUND RELEASE AT ALL TIMES).

ATTACHMENT 5

Page 4 of 4

R41B is the Mid Range Noble Gas Monitor and is located on the R41 Sample Skid on the 122' elevation of the Auxiliary Building next to the door to the stairs.

Ranges: 1E-04 to 1E-02 uCi/cc (THIS IS A GROUND RELEASE AT ALL TIMES).

R41C is the High Range Noble Gas Monitor and is located on the R41 Sample Skid on the 122' elevation of the Auxiliary Building next to the door to the stairs.

Ranges: 1E-01 to 1E+05 uCi/cc (THIS IS A GROUND RELEASE AT ALL TIMES).

R41D is the Effluent Noble Gas Monitor and is located on the R41 Sample Skid on the 122' elevation of the Auxiliary Building next to the door to the stairs.

Ranges: 0E+00 to 1E+13 uCi/Sec

(The R41D values should not be used in MIDAS to perform manual dose assessment calculations) (THIS IS A GROUND RELEASE AT ALL TIMES).

R45B is the "Backup" Mid Range Noble Gas Monitor and is located in the R45 Shed behind the Fuel Handling Building. This monitor should not be used unless the R41 monitors are inoperable.

Ranges: 1E-03 uCi/cc to 1E+01 uCi/cc (THIS IS A GROUND RELEASE AT ALL TIMES).

R45C is the "Backup" High Range Noble Gas Monitors and is located in the R45 Shed behind the Fuel Handling Building. This monitor should not be used unless the R41 monitors are inoperable.

Ranges: 1E-01 uCi/cc to 1E+05 uCi/cc (THIS IS A GROUND RELEASE AT ALL TIMES).

PSEG NUCLEAR

NC.EP-EP.ZZ-0303 (Q) - REV. 01

CONTROL POINT - RADIATION PROTECTION - RESPONSE

USE CATEGORY: II

**PSEG
CONTROL
COPY # EPIP059**

REVISION SUMMARY:

1. Rewrote step 2.1 making it into two steps to clarify the prerequisites.
2. Fixed typos in Attachment 1, steps 1.1.3, 1.1.7, 1.1.8, 1.1.15, 1.1.16, 1.1.17, and 1.1.27.
3. Combined the two notes after step 1.1.11 in Attachment 1.
4. Reworded step 1.1.14 to allow an equivalent instrument to an RM-14 to be used in Attachment 1.
5. Fixed typo in Attachment 4, step 1.1.3.
6. Fixed typo in Figure 1 - 1.
7. Added Date and Time to Form - 1.
8. This revision satisfies the requirement for a biennial review.

IMPLEMENTATION REQUIREMENTS:

This procedure is effective for use upon issue.

9-14-00

APPROVED: _____


Manager - EP & IT

9/14/00
Date

APPROVED: _____

N/A
Vice President - Operations

N/A
Date

SHIFT RADIATION PROTECTION TECHNICIAN RESPONSE

TABLE OF CONTENTS

Section	Title	Page
1.0	PURPOSE	3
2.0	PREREQUISITES	3
2.1	Prerequisites To Be Followed Prior To Implementing This Procedure ...	3
3.0	PRECAUTIONS AND LIMITATIONS.....	3
3.1	Precaution and Limitations To Be Followed Prior To Implementing This Procedure	3
4.0	EQUIPMENT REQUIRED	3
5.0	PROCEDURE.....	4
5.1	The SRPT, ORPT, Or Designee Should Perform the Following	4
6.0	RECORDS.....	4
7.0	REFERENCES	4
7.1	References.....	4
7.2	Cross References	4
ATTACHMENTS		
	ATTACHMENT 1 - Radiation Protection - Control Point Checklist.....	5
	ATTACHMENT 2 - Onsite Protective Action Guidelines	11
	ATTACHMENT 3 - Control Point Evacuation Checklist	12
	ATTACHMENT 4 - Assembly/Accountability Instruction - Control Point	14
	ATTACHMENT 5 - Operation of the VAX LA120 Terminal	16
FORMS		
	Form 1 - Habitability Log	19
	Form 2 - Accountability Station Attendance Sheet.....	20

FIGURES

FIGURE 1 - 1 - Guidance For Contamination Control (HOPE CREEK ONLY) 21
FIGURE 1 - 2 - Guidance For Contamination Control (HOPE CREEK ONLY) 22
FIGURE 1 - 3 Guidance For Contamination Control (HOPE CREEK ONLY) 23
FIGURE 1 - 4 Guidance For Contamination Control (HOPE CREEK ONLY) 24
FIGURE 2 - 1 Guidance For Contamination Control (SALEM ONLY)..... 25

1.0 PURPOSE

To outline and describe the Radiation Protection Technician's duties during a declared emergency at the Control Point.

2.0 PREREQUISITES

2.1 Prerequisites To Be Followed Prior To Implementing This Procedure

- 2.1.1 Implement this procedure at the discretion of the Operations Superintendent or Radiation Supervision.
- 2.1.1 Upon a declaration of an Unusual Event or greater emergency classification.

3.0 PRECAUTIONS AND LIMITATIONS

3.1 Precaution and Limitations To Be Followed Prior To Implementing This Procedure

- 3.1.1 Elevator use should be limited to transporting equipment unless Site Protection indicates that elevator use should be utilized to move an injured person.
- 3.1.2 It is recommended that initials be used in the place keeping sign-offs, instead of checkmarks, if more than one person may implement this procedure.
- 3.1.3 Personnel who implement this procedure shall be trained and qualified IAW the Emergency Plan.
- 3.1.4 Steps listed in this procedure may be performed in the order deemed appropriate for the emergency situations. Only steps applicable to the specific emergency need be performed.

4.0 EQUIPMENT REQUIRED

As provided at the Control Point and Control Room.

5.0 PROCEDURE

NOTE

- The Shift Radiation Protection Technician (SRPT) and Onshift Radiation Protection Technician (ORPT) report to the Operations Superintendent (OS) until the TSC is activated.
- **AT HOPE CREEK**, upon activation of the TSC, the SRPT and ORPT report to the Radiological Assessment Coordinator (RAC) and should implement this attachment
- **AT SALEM**, upon activation of the TSC, the SRPT continues to report to the OS, while the ORPT reports to the RAC.
- **AT SALEM**, upon activation of the TSC, the ORPT should implement this attachment. The SRPT continues to implement SA.EP-EP.ZZ-0301(Q), Shift Radiation Protection Technician Response in the Salem Control Room.

5.1 The SRPT, ORPT, Or Designee Should Perform The Following:

- 5.1.1 REFER to Attachment 1, Radiation Protection - Control Point Checklist, and perform applicable duties.

6.0 RECORDS

Return completed procedure and any information or data thought to be pertinent by the SRPT, to the Manager – EP & IT.

7.0 REFERENCES

7.1 References

Nuclear Business Unit Emergency Plan

7.2 Cross References

NC.EP-EP.ZZ-0302, Radiological Coordinator Response

NC.EP-EP.ZZ-0301(Q), Shift Point Radiation Protection Technician Response

ATTACHMENT 1

Page 1 of 6

RADIATION PROTECTION - CONTROL POINT CHECKLIST

Date/Time: _____ / _____

1.0 RADIATION PROTECTION CHECKLIST

1.1 Should Perform The Following:

1.1.1 ENSURE radiological habitability surveys of the Control Point (CP) and OSC are performed every 30 minutes, unless instructed otherwise by: _____

- ◆ SRPT
- ◆ RAC
- ◆ Radiation Protection Supervisor - Exposure Control (RPS-EXP)
- ◆ OS

1.1.2 RECORD results on Form – 1, Habitability Log. _____

1.1.3 REFER to evacuation criteria located in Attachment 2, Onsite Protective Action Guidelines. _____

1.1.4 IF evacuation is necessary, THEN follow the checklist provided in Attachment 3, Control Point Evacuation Checklist. _____

1.1.5 MAINTAIN access control. _____

1.1.6 SUPPORT Repair and Corrective Action Missions, as directed by the OSC or the TSC. _____

ATTACHMENT 1

Page 2 of 6

NOTE

1. An individual, in lieu of a team, may be dispatched by SRPT/ORPT/RPT after:
 - a. Receiving the RAC's concurrence or instructions to do so.
 - b. Notifying the RPS-EXP, located in the OSC.
 - c. Instructing the individual to check in with the Control Point every 15 minutes via some type of audio communications (Plant page, radio, or telephone).
2. An individual should not be used under the following circumstances:
 - a. An individual's exposure could be expected to exceed 1000 mRem.
 - b. The task would require entry into a Harsh Environment Area such as a steam atmosphere or heat stress area.
 - c. Acts of sabotage.
3. Sending out an individual in lieu of a team should be the exception and not the norm.
4. Control Point Teams should be limited to performing Surveys, taking Air Samples, setting up Contamination Controls, Chemistry and Effluent Sampling.

1.1.7 ENSURE all Control Point teams are made up of at least two people unless a task meets the criteria from the above note for dispatching an individual.

1.1.8 BRIEF, or ENSURE a briefing takes place, for all Control Point Teams IAW Team Briefing Guidelines, found in NC.EP-EP.ZZ-0202Q, OSC Activation And Operations, and ALARA Analysis, found in NC.EP-EP.ZZ-0304(Q), prior to allowing the team to go out.

1.1.9 IF general area dose rates at the work area is ≤ 1000 mR/hr,
THEN no documented radiological briefing is necessary.

1.1.10 NOTIFY the RPS-EXP by phone that the team or individual is going out into the field and what their task is.

ATTACHMENT 1

Page 3 of 6

1.1.11 OBTAIN current updates of the emergency from the RAC, RPS-EXP, or their designees.

<u>NOTE</u>	
Radiation Monitor System (RMS) values can be obtained from:	
<u>HOPE CREEK ONLY</u> The VAX LA120 RM-11 RMS Data Sheet	<u>SALEM ONLY</u> Radiological Assessment Data Sheet

1.1.12 ASSESS in plant radiation monitoring systems readings for habitability in areas of interest. Refer to Attachment 5, Operation of the VAX LA120, for operating instructions for the VAX LA120.

<u>NOTE</u>	
1. Indications of a potential radioactive airborne problem in the Reactor Building or Auxiliary Building would be increases or alarms on the Reactor Building:	
<u>HOPE CREEK ONLY</u>	<u>SALEM ONLY</u>
• Duct Monitors	Plant Vent Monitor
• Effluent Monitors	Effluent Monitors
• Area Radiation Monitors	Area Radiation Monitors
• Air Monitoring Samplers	Air Monitoring Samplers
2. The Hope Creek Noble Gas (NG) Technical Specification limit is 1.20E+04 uCi/second.	
3. The Salem NG Technical Specification limit is 2.42E+05 uCi/second.	

ATTACHMENT 1

Page 4 of 6

1.1.13 ESTABLISH contamination controls (no eating, no drinking, no smoking, proper postings, setting up step off pads and friskers) when any of the following have occurred: _____

- A radiological release of noble gas \geq technical specification limits is in progress.
- The potential of a radiological release > Technical Specifications.
- Normal RCA boundaries have been breached.
- At the discretion of the RAC.

1.1.14 REFER to Figures 1 - 1 through 1 - 4 (**HOPE CREEK ONLY**), and Figure 2 - 1 (**SALEM ONLY**), Contamination Control Guidance, on how to limit access to certain areas and where to position SOPs. _____

1.1.15 ENSURE a RM-14 or equivalent countrate meter is positioned at all SOPs. _____

1.1.16 NOTIFY the RPS-EXP and the RAC of changing radiological conditions as determined from steps 1.1.12 and/or 1.1.13 or of **ANY RADIATION ALARMS** on fixed or portable Radiation Monitors. _____

1.1.17 PERFORM in plant surveys, air samples, and analysis as directed by the RAC, RPS-EXP, or appropriate Radiation Protection Station procedures. _____

1.1.18 REFER to NC.EP-EP.ZZ-0306, Emergency Air Sampling and Analysis, and NC.EP-EP.ZZ-0307(Q), Plant Vent Sampling as directed by the RAC, RPS-EXP, or as thought appropriate. _____

1.1.19 ENSURE operational and response checks are done, prior to use, on all appropriate equipment in the:

- R.P. Count Room _____
- Instrument Issue Room _____

ATTACHMENT 1
Page 5 of 6

NOTE

An inventory is not necessary if the seal is not broken.

Refer to EPIP 1006, Equipment Inventory-Radiation Protection, when performing an inventory on Emergency Locker equipment.

- Emergency Locker located at the CP. _____

1.1.20 ISSUE radiological monitoring equipment as necessary. _____

1.1.21 ISSUE dosimetry as necessary. _____

1.1.22 ENSURE appropriate RWP's are being utilized _____

1.1.23 SUPPORT the TSC as directed upon activation. _____

1.1.24 SUPPORT the OSC as directed upon activation. _____

1.1.25 COORDINATE the handling and storage of post accident Samples (PASS), with the Chemistry Supervisor-CP/TSC or the Chemistry CP Technician. _____

1.1.26 DECONTAMINATE personnel and equipment IAW NC.EP-EP ZZ-0308(Q), Personnel Vehicle Survey and Decontamination. _____

1.1.27 ASSIST in radioactive waste problems and activities as necessary. _____

ATTACHMENT 1

Page 6 of 6

NOTE

ASSEMBLY shall be implemented after the declaration of an Alert emergency classification.

ACCOUNTABILITY shall be implemented after the declaration of a Site Area Emergency, but may be implemented at any time after Assembly at the discretion of the OS/Emergency Duty Officer (EDO).

1.1.28 PERFORM Assembly/Accountability utilizing the guidance provided in Attachment 4, Assembly/Accountability Instruction - Control Point. _____

TURNOVER

Given By: _____ **Date/Time:** _____ / _____

Received By: _____ **Date/Time:** _____ / _____

ATTACHMENT 2

Page 1 of 1

ONSITE PROTECTIVE ACTION GUIDELINES

1.0 RADIATION LEVELS

<p>Dose Rate (mR/hr) ≥ 100</p>	<p><u>Location</u> Onsite</p>	<p><u>Action</u> Evacuation of all nonessential personnel. Consider evacuation of other personnel.</p>
--	-----------------------------------	--

<p>Dose Rate (mR/hr) ≥ 100</p>	<p><u>Location</u> Control Room OSC TSC Control Point</p>	<p><u>Action</u> Consider evacuation within one hour, and/or relocation as appropriate.</p>
--	---	---

<p>Dose Rate (mR/hr) ≥ 1000</p>	<p><u>Location</u> Onsite</p>	<p><u>Action</u> Evacuation of all nonessential personnel Consider immediate evacuation of remaining personnel.</p>
---	-----------------------------------	---

<p>Dose Rate (mR/hr) ≥ 1000</p>	<p><u>Location</u> Control Room OSC TSC Control Point</p>	<p><u>Action</u> Consider immediate evacuation, and/or relocation upwind of the plume.</p>
---	---	--

2.0 RADIOIODINE

If the Iodine-131 equivalent is calculated or measured in concentrations greater than or equal to $5.0E - 07$ uCi/cc, consider the use of Potassium Iodide for thyroid blocking. This section is to be applied to areas, in which personnel are working or are planning to work. Refer to Emergency Procedure NC.EP-EP.ZZ-0305(Q), Stable Iodine Thyroid Blocking, for additional information.

ATTACHMENT 3
Page 1 of 2
CONTROL POINT EVACUATION CHECKLIST

1.0 EVACUATION OF THE CONTROL POINT

1.1 The Chemistry Supervisor-CP/TSC Or Designee Should:

- 1.1.1 ENSURE Radiation Protection are assisting Chemistry personnel in evacuation of the Control Point. _____
- 1.1.2 ENSURE that the TSC and Control Room are kept aware of the new location. _____
- 1.1.3 ENSURE the following equipment is included in the Control Point evacuation:
 - Movable Counting Room Equipment. _____
 - Dosimeters, additional TLDs from the Control Point. _____
 - Emergency Logbooks. _____
 - Portable Survey Equipment. _____
 - Survey materials (air sample filters etc.). _____
 - SCBA and spare tanks. _____
 - Respirators and canisters. _____
 - Protective Clothing. _____
 - Posting Materials and Barricades. _____
 - Emergency Plan Implementing Procedures. _____
 - Event Classification Guide. _____
 - Station Procedures. _____
- 1.1.4 NOTIFY the RAC of the new telephone numbers. _____
- 1.1.5 NOTIFY the RAC when the new Control Pont has become operational. _____
- 1.1.6 RE-ESTABLISH the operability of the evacuated equipment as soon as possible. _____
- 1.1.7 MONITOR continuously Radiation Protection personnel exposure. Rotate personnel as appropriate to ensure dose limits are not exceeded. _____

ATTACHMENT 3

Page 2 of 2

- 1.1.8 ENSURE all pertinent information is entered in log books. _____
- 1.1.9 USE the equipment checklist and note deficiencies. _____
- 1.1.10 IF additional materials or services are required due to relocation, THEN CONTACT the RAC. _____

NOTE

A list of categories, corresponding Vendors and telephone numbers is provided in the following pages. For PSEG stockroom items refer to the Folio Catalogue.

- 1.1.11 WHEN requesting inventory status, THEN GIVE due regard to habitability of particular areas. _____

ATTACHMENT 4

Page 1 of 2

ASSEMBLY/ACCOUNTABILITY INSTRUCTIONS - CONTROL POINT

1.0 IMPLEMENTATION OF ASSEMBLY AT THE CONTROL POINT

1.1 The SRPT/ORPT Or Designee SHALL:

NOTE

Assembly/Accountability actions at the Control Point are to be coordinated with the SRPT/ORPT and the RAC.

- 1.1.1 ASSEMBLE all Personnel at the Control Point.
- 1.1.2 DIRECT personnel exiting the RCA to proceed to their accountability station or direct them to assemble in change areas dependent on radiological conditions.
- 1.1.3 DIRECT personnel remaining at the Control Point to sign-in on the Accountability Station Attendance Sheet (Form - 2).
- 1.1.4 IF accountability implementation is called for, THEN PROCEED to step 2.0 of this attachment.

2.0 IMPLEMENTATION OF ACCOUNTABILITY

2.1 The SRPT/ORPT Or Designee SHALL:

T - 0 MIN

- 2.1.1 IF the Radiation Alert Alarm and page announcement sounds, **"ALL ACCOUNTABILITY STATIONS IMPLEMENT ACCOUNTABILITY"**, THEN ENSURE all personnel at the Control Point, including all personnel in the Rad. Pro. Break Room and Change Areas, have passed their photobadges through the special accountability cardreader located at the Control Point.

ATTACHMENT 4

Page 2 of 2

T - + 20 MIN

- 2.1.2 WHEN the page announcement sounds,
"ALL ACCOUNTABILITY STATIONS COMPLETE YOUR ACCOUNTABILITY", THEN ENSURE that any personnel arriving at the Control Point since the initial call for accountability also have passed their photobadges through the Control Point accountability card reader. _____
- 2.1.3 DIRECT all stragglers (personnel arriving at the Control Point after 30 minutes have lapsed) to pass their photobadge through the accountability cardreader and report the badge number(s) of stragglers to the Security Center (Ext. 2223). _____
- 2.1.4 MAINTAIN continuous accountability until Hope Creek's/Salem's emergency is terminated. _____
- 2.1.5 IF the Automated Accountability System malfunctions, THEN REFER to step 3.0. _____

3.0 **AUTOMATED ACCOUNTABILITY SYSTEM MALFUNCTION**

3.1 **The Chemistry Supervisor-CP/TSC Or Designee SHALL:**

- 3.1.1 IF the automated accountability system malfunctions, THEN PROVIDE a copy of the Accountability Station Attendance Sheet, Form - 2, to the Security Force Member dispatched to the Control Point. _____

ATTACHMENT 5

Page 1 of 3

OPERATION OF THE VAX LA120 TERMINAL

1.0 METEOROLOGICAL DATA

1.1 Perform The Following to Obtain Current 15 Minute Average Meteorological Data:

1.1.1 DEPRESS the RETURN key. (USERNAME should be displayed). _____

1.1.2 ENTER MET and depress the RETURN key _____

NOTE

The most current meteorological data should be printed out followed by the Main Meteorological Menu. If no other keys are depressed, the current 15 minute average data will be printed out every 15 minutes

1.1.3 ENTER Option 3 (Disable Automatic Display of MET Data Every 15 minutes) and depress the RETURN key to stop the VAX LA120 from printing out meteorological data every 15 minutes. _____

1.1.4 ENTER Option 1 (Display Current Meteorological Data) and depress the RETURN key to receive the current 15 meteorological data print out. _____

1.2 Perform The Following Steps to Obtain Archived Meteorological Data:

1.2.1 DEPRESS the RETURN key. (USERNAME should be displayed) _____

1.2.2 ENTER MET and depress the RETURN key. (The most current meteorological data should be printed out followed by the Main Meteorological Menu). _____

ATTACHMENT 5

Page 2 of 3

1.2.3 ENTER Option 2 (Display Meteorological Data From Data Base) and depress the RETURN key. (Current system Date and Time will be displayed). _____

1.2.4 IF this is the data you want, THEN depress the RETURN key. (Your option will be printed out). _____

1.2.5 IF you want data from an another date and time, THEN go to Step 1.2.6. _____

1.2.6 ENTER start date and time as shown below and depress the RETURN key. (For December 27, 1989 at 0130 enter 27-DEC-1989 "depress the space bar once" and enter 01:30). _____

1.2.7 ENTER "Y" if the information is correct or "N" if the information is not correct and reenter it as shown in Step 1.2.6. _____

1.2.8 ENTER the end date and time as shown below and depress the RETURN key. (For December 28, 1989 at 0230 enter 28-DEC-1989 "depress the space bar once" and enter 02:30). _____

1.2.9 ENTER "Y" if the information is correct or "N" if the information is not correct and re-enter it as shown in Step 1.2.8. _____

2.0 RMS AND MET DATA (FOR HOPE CREEK ONLY)

2.1 Perform The Following Steps to Obtain Current Instantaneous RMS and MET Data:

2.1.1 DEPRESS the RETURN key. (USERNAME should be displayed). _____

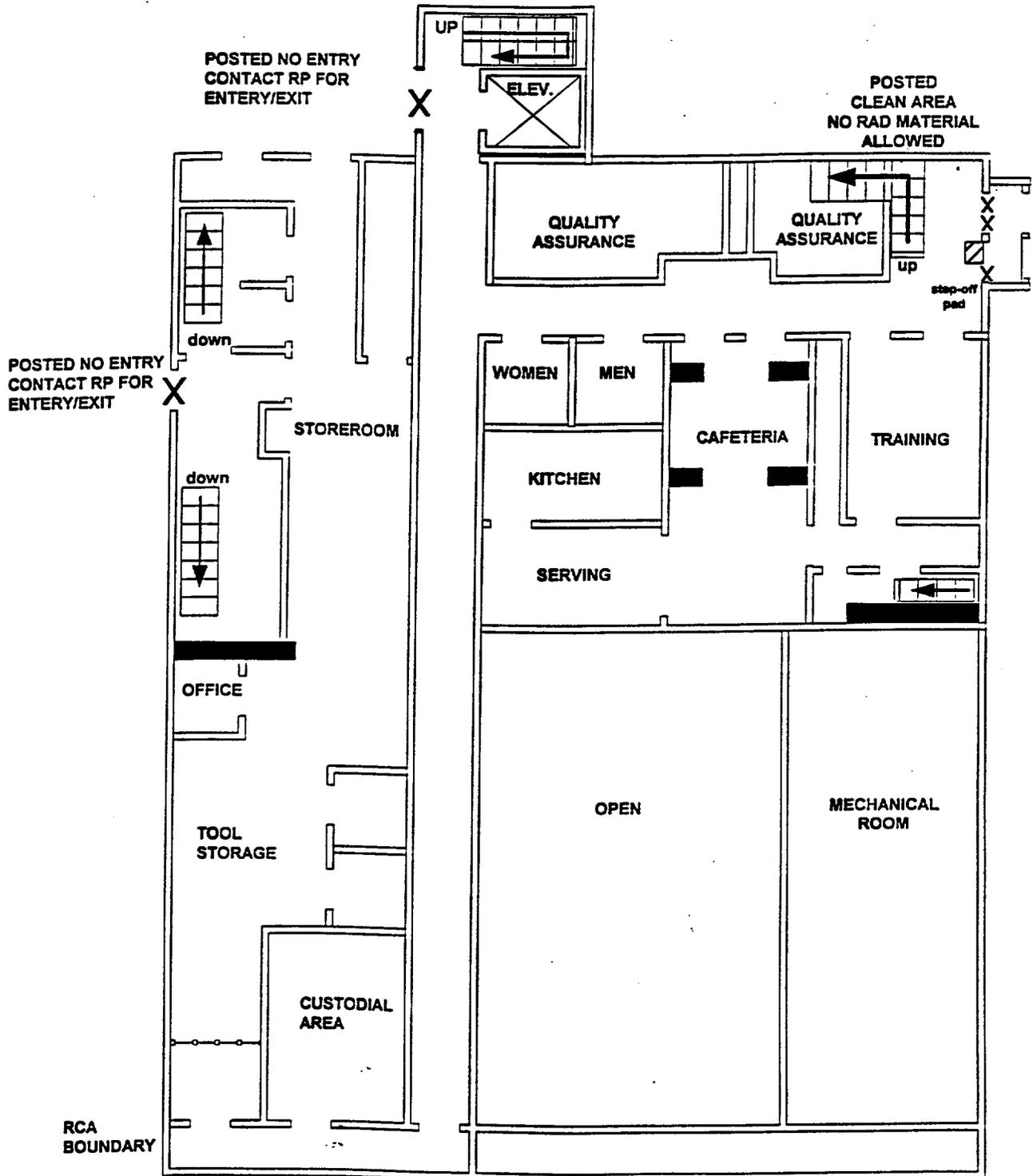
2.1.2 ENTER EOF and depress the RETURN key. (A prompt should be displayed asking for PASSWORD). _____

ATTACHMENT 5

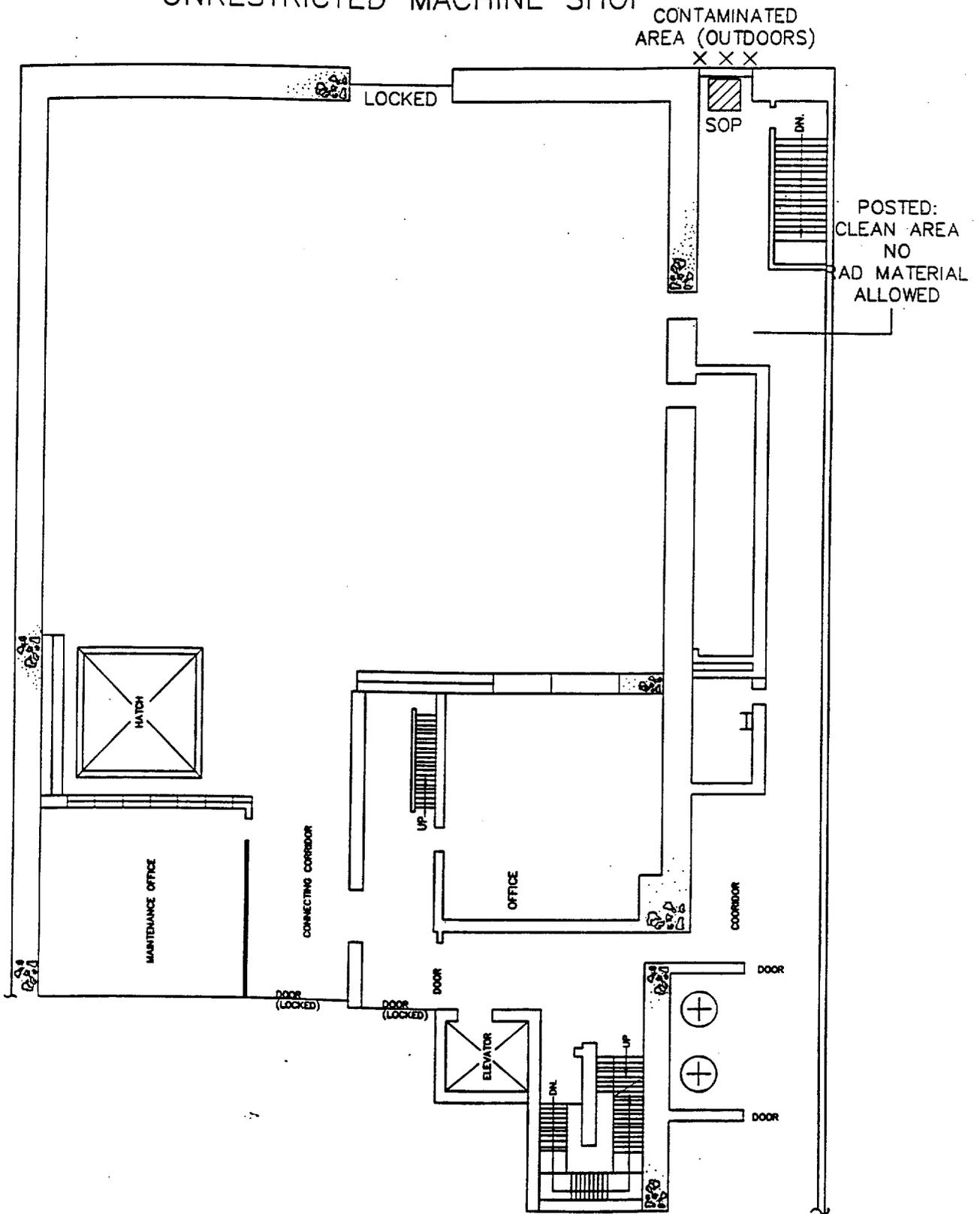
Page 3 of 3

- 2.1.3 ENTER the letters EOFUSER and depress the RETURN key. (The EOF Plant Menu should be displayed.) _____
- 2.1.4 SELECT Option 1 for Hope Creek. _____
- 2.1.5 DEPRESS the RETURN key. (The EOF Report Options Menu will be displayed). _____
- 2.1.6 ENTER Option 1 (Current RMS Status) and depress the RETURN key. (The most current instantaneous RMS and 15 minute MET data will be printed out.) _____
- 2.2 **Perform The Following Steps to Obtain 15 Minute Average RMS Data:**
- 2.2.1 DEPRESS the RETURN key. (USERNAME should be displayed). _____
- 2.2.2 ENTER EOF and depress the RETURN key. (A prompt should be displayed asking for PASSWORD). _____
- 2.2.3 ENTER EOFUSER and depress the RETURN key. (The EOF Plant Menu should be displayed). _____
- 2.2.4 SELECT option 1 for Hope Creek. _____
- 2.2.5 DEPRESS the RETURN key. (The EOF Report Options Menu should be displayed). _____
- 2.2.6 SELECT and enter option number 6 (15 Minute Historical Data). (Current system date and time should be displayed. A prompt should be displayed for start date and time) _____
- 2.2.7 DEPRESS the RETURN key for 15 minute average RMS and MET data. (Your selection will be printed). _____

FIGURE 1-1
GUIDANCE FOR CONTAMINATION CONTROL
(HOPE CREEK ONLY)
Page 1 of 4



UNRESTRICTED MACHINE SHOP



137' S/RW "SOUTH END"

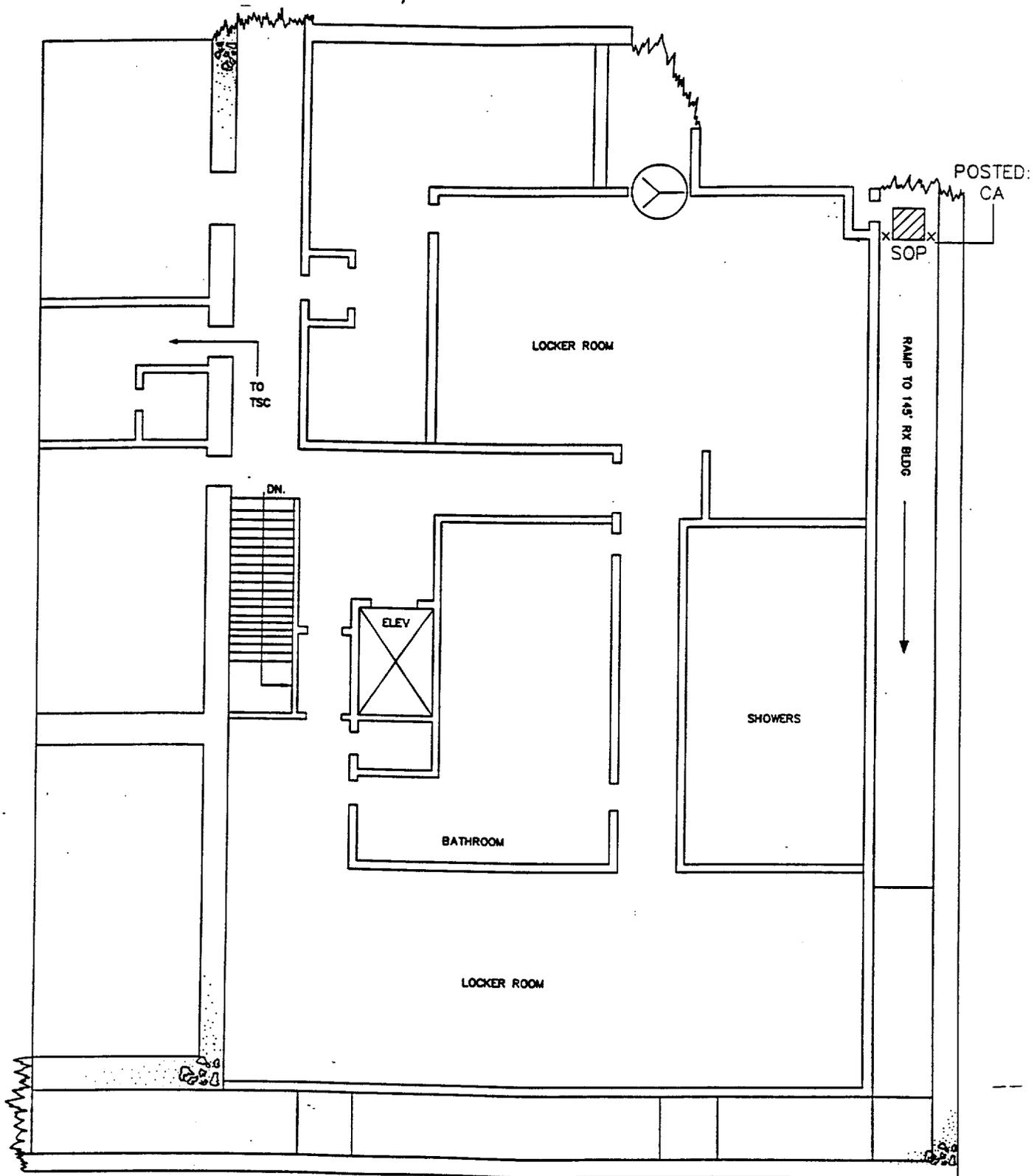


FIGURE 1-4
Page 4 of 4

RESTRICTED MACHINE SHOP

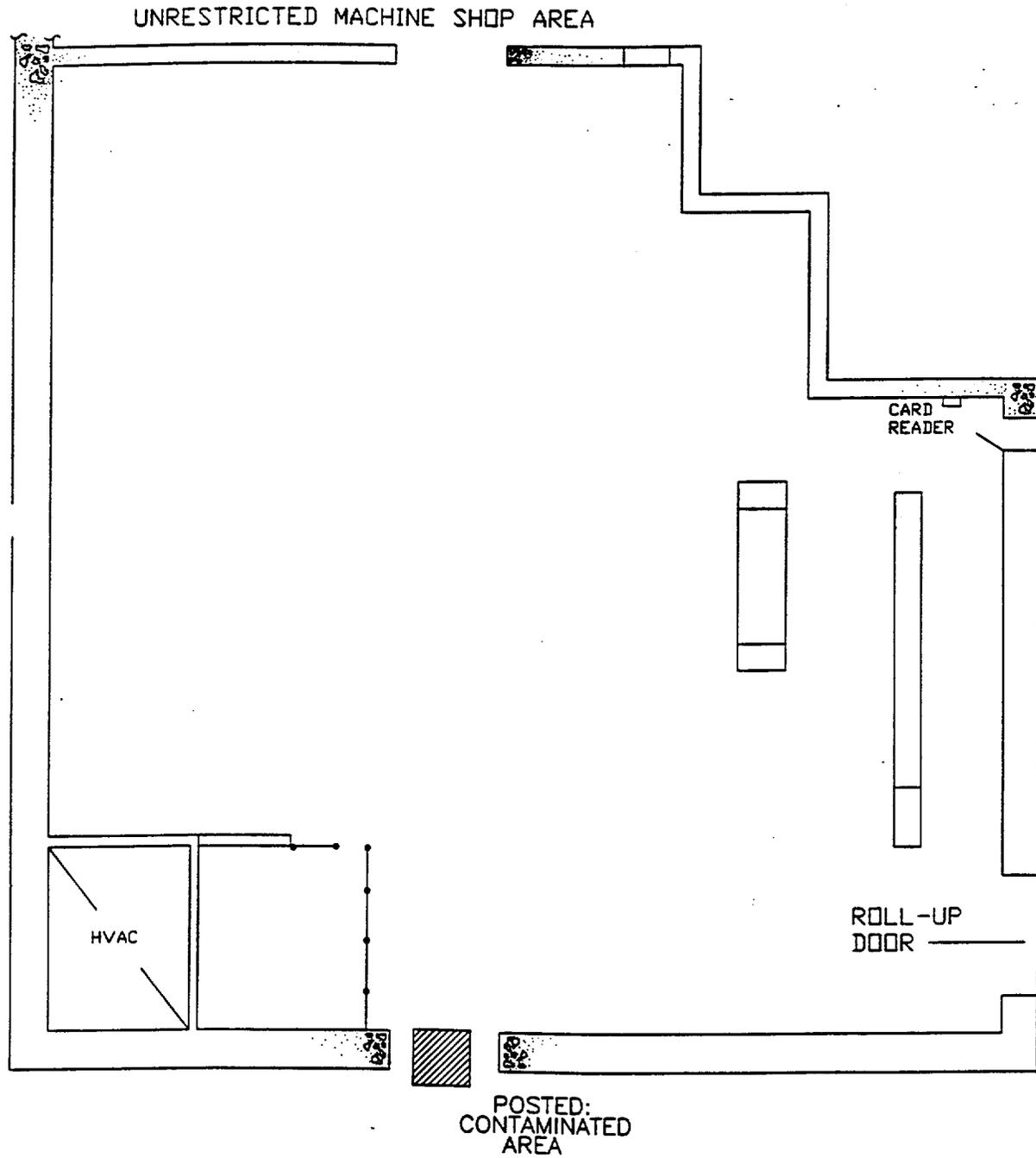
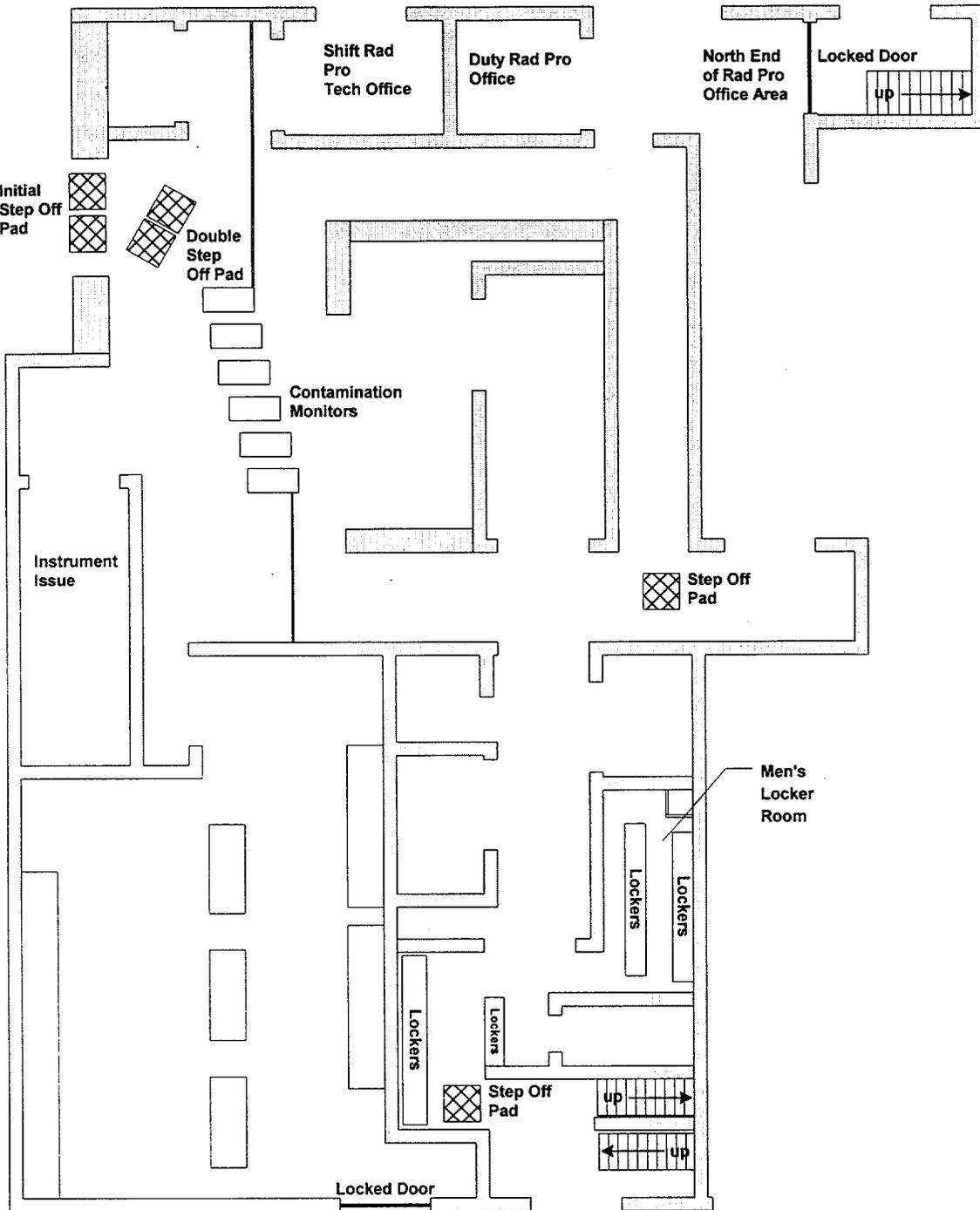


FIGURE 2 - 1

GUIDANCE FOR CONTAMINATION CONTROL (SALEM ONLY)

Page 1 of 1



OPERATIONAL SUPPORT CENTER (OSC) RADIATION PROTECTION RESPONSE

USE CATEGORY: II

**PSE&G
CONTROL
COPY # EP1P059**

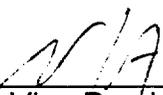
REVISION SUMMARY:

1. Added 30 minutes for habitability time guidance in step 5.1.1.
2. Fixed typo in Attachment 3 changing previous year to current year.
3. Added a third bullet to the note after step 5.1.3 to clarify that an authorization is needed to use PRORAD to track dose and that authorization is the Radiological Assessment Coordinator.
4. Rewrote a portion of the note after step 5.1.3 to deleted unnecessary, and confusing information.
5. Rewrote note after step 5.1.4 to delete confusing/incorrect information.
6. Added note after step 5.1.12 that clarifies the method OSC briefings should take place.
7. This revision satisfies the requirement for a biennial review.

IMPLEMENTATION REQUIREMENTS

This procedure is effective upon issue. *9-14-00*

APPROVED:  *9/12/00*
 Manager - EP & IT Date

APPROVED:  *M.A.*
 Vice President - Operations Date

OPERATIONAL SUPPORT CENTER (OSC) RADIATION PROTECTION RESPONSE

TABLE OF CONTENTS

<u>Section</u>	<u>Title</u>	<u>Page</u>
1.0	PURPOSE.....	2
2.0	PREREQUISITES	2
	2.1 Prerequisites To Be Followed Prior To Implementing This Procedure...	2
3.0	PRECAUTIONS AND LIMITATIONS.....	2
	3.1 Precaution and Limitations To Be Followed Prior To Implementing This Procedure.....	2
4.0	EQUIPMENT REQUIRED	2
5.0	PROCEDURE.....	3
	5.1 The Radiation Protection Supervisor - Exposure Control Should Perform the Following.....	3
	5.2 Perform The Following Steps If Emergency Exposure is Required.....	6
6.0	RECORDS.....	6
7.0	REFERENCES	7
	7.1 References	7
	7.2 Cross References	7
	7.3 Closing Documents.....	7
 ATTACHMENTS		
	ATTACHMENT 1 - Individual Radiation Exposure Record.....	8
	ATTACHMENT 2 - ALARA Analysis Form	9
	ATTACHMENT 3 - Selection And Authorization For Emergency Exposures	11
	ATTACHMENT 4 - Onsite Protective Action Guidelines	15
	ATTACHMENT 5 - Operation of The VAX LA120 Terminal	16
 FORMS		
FORM 1	TLD Log.....	19
FORM 2	Habitability Log	20

1.0 PURPOSE

- To outline and describe the duties Radiological Protection Supervisor – Exposure Control (RPS-EXP).
- To provide guidance to emergency response personnel for administration of Radiation Protection Team Response for the Operational Support Center (OSC) during an emergency at Hope Creek or Salem Nuclear Generating Station.

2.0 PREREQUISITES

2.1 Prerequisites To Be Followed Prior To Implementing This Procedure.

Implement this procedure at:

- The OS' discretion.
- The manning of the OSC.
- The declaration of an Alert.

3.0 PRECAUTIONS AND LIMITATIONS

3.1 Precautions and Limitations To Be Followed Prior To Implementing This Procedure.

3.1.1 SALEM ONLY

Dose Rates in the 78' Electrical Penetration Area could be higher than what is indicated on the R47 ARM. The R47 ARM is located across the room from the PASS lines.

CAUTION should be exercised when entering this area.

3.1.2 It is recommended that initials be used in the place-keeping sign-off, instead of checkmarks, if more than one person may implement this procedure.

3.1.3 Personnel who implement this procedure shall be trained and qualified in accordance with (IAW) the Emergency Plan.

4.0 EQUIPMENT REQUIRED

As provided In the Emergency Response Facility.

5.0 **PROCEDURE**

5.1 **The Radiation Protection Supervisor – Exposure Control Should Perform The Following:**

- 5.1.1 DIRECT habitability to be performed every 30 minutes and the results logged on Form 2, Habitability Log. _____
- 5.1.2 COMPARE habitability results to Attachment 4, Onsite Protective Action Guidelines, and perform appropriate actions. _____
- 5.1.3 OBTAIN current status of the emergency from the OSCC. _____

NOTE

- An individual's yearly dose limit is to be automatically raised to 4500 mrem upon the declaration of an Alert or higher classification. The dose extension to 4500 mrem may be entered into the PRORAD System, but is not required.
- If a person does not have a completed NRC Form 4 on record, no dose extension should be allowed. Dose limit should be 400 mrem.
- If PRORAD is used, it requires an authorization be inputted into PRORAD before a person's dose can be being raised to 4500 mrem. The Radiological Assessment Coordinator (RAC) is the individual whose authorization should be used.

- 5.1.4 IF persons in the OSC do not have a TLD, THEN ensure one is issue and log it on Form 1, TLD Log. _____

NOTE

Dose Tracking may be performed using the PRORAD System instead of Attachment 1, Individual Radiation Exposure Record, if PRORAD is operational

- 5.1.5 ENSURE 1.0 of Attachment 1 is completed for the onsite emergency response personnel assigned to the OSC and Control Point. _____
- 5.1.6 ENSURE control of Attachment 1 is maintained in order to expedite and provide a tracking mechanism for OSC/CP personnel activities and exposures. _____

- 5.1.7 NOTIFY the OSCC prior to any CP teams being sent out into the plant and ensure they are tracked on the OSC Team Status Board.

NOTE

An individual, in lieu of a team, may be dispatched by the OSCC. The individual should be in contact with the Control Point or OSC via some type of audio communications (page, radio, or telephone) and should check-in every 15 to 30 minutes with the OSC or Control Point.

An individual should not be dispatched under the following circumstances:

- An individual's exposure is expected to exceed 1000 mrem External Dose Equivalent (EDE).
- The task would require entry into a "Harsh Environment Area", (i.e., steam atmosphere, a heat stress area, etc.).
- Acts of sabotage or suspected sabotage.

- 5.1.8 DIRECT all OSC and CP teams to be made up of at least two people, unless a task meets the criteria from the note above for dispatching an individual.

- 5.1.9 IF travel path dose rates, or dose rates at destination are ≥ 1000 mR/hr EDE,
THEN **COMPLETE Attachment 2, ALARA Analysis Form.**

- 5.1.10 IF travel path dose rates, or dose rates at destinations are ≤ 1000 mR/hr EDE,
THEN **Attachment 2 does NOT have to be completed.**

- 5.1.11 PROVIDE job status information to the Radiological Assessment Coordinator (RAC) concerning completed and ongoing jobs.

NOTE

- Radiological briefings of teams should take place during pre-job briefing. Two separate briefings (pre-job and radiological) is not the proper method of performing OSC briefings, in the majority of cases. No duplicate radiological briefings should take place at the Control Point prior to the OSC team entering the Radiological Control Area (RCA).
- Pre-job briefings should try to meet a goal of not going longer than 20 minutes. Circumstances may arise that make meeting this goal impossible, but the 20 minute target should be tried to be met.

5.1.12 BRIEF all team members on appropriate radiological conditions. _____

5.1.13 DEBRIEF all teams and ensure 2.0 of Attachment 1 is completed. _____

5.1.14 OBTAIN plant status updates from the OSCC. _____

5.1.15 OBTAIN current RMS status from the most appropriate location listed below:

(HOPE CREEK ONLY)

- the VAX LA120 utilizing Attachment 5, Operation of the VAX LA120. _____
- Control Point personnel. _____
- TSC Radiological Assessment personnel. _____

(SALEM ONLY)

- Shift Radiation Protection Technician (SRPT) _____
- TSC Radiological Assessment personnel. _____

NOTE

Noble Gas Technical Specification Radiological Release Limits are:

- Hope Creek = 1.20E+04 uCi/Second
- Salem = 2.42E+05 uCi/Second

5.1.16 ESTABLISH contamination controls (no eating, no drinking, no smoking, proper postings, setting up step off pads and friskers) when any of the following have occurred. _____

- A radiological release \geq Noble Gas technical specification limits is in progress. _____
- The potential of a radiological release \geq Noble Gas technical specification limit is in progress. _____
- Normal RCA boundaries have been breached. _____
- At the RAC's discretion. _____

5.1.17 NOTIFY the RAC or SRPT of the changing conditions as determined from step 5.1.16. _____

NOTE

It is part of the RAC's responsibilities to establish best routes and ways in and out of the Owner Controlled Area if step 5.1.17 has been implemented.

HOPE CREEK ONLY

Movements of teams outside the Emergency Response facilities (ERFs) and Power Block should be coordinated with the RAC.

SALEM ONLY

Movements of teams outside the ERFs and Turbine Buildings, Auxiliary Buildings, Containments, Diesel Buildings, and the Main Guard House should be coordinated with the RAC.

5.1.18 COORDINATE with the OSCC and the RAC, transportation of injured person(s) or person(s) receiving exposures of 5 rem acute EDE dose, or greater to appropriate medical facilities.

5.2 **Perform The Following Steps If Emergency Exposure Is Required:**

NOTE

- Voluntary consent, pre-job briefings, and EDO authorization for Life Saving Tasks, that require Emergency Exposure, should done verbally prior to, or during, the OSC Team being dispatched.
- Attachment 3 should be completed as soon as possible, after the return of the OSC Life Saving Team's return.
- Attachment 3 contains instructions for making Emergency Exposure Authorizations and filling out necessary documentation.

5.2.1 IMPLEMENT Attachment 3, Selection and Authorization for Emergency Exposures.

6.0 **RECORDS**

Return completed procedure, original copies of Attachments to the Manager – EP & IT.

7.0 **REFERENCES**

7.1 **References**

- 7.1.1 EPA 400-R-92-001: October 1991
- 7.1.2 Roger E. Linneman, M.D., Correspondence Dated November 24, 1993
- 7.1.3 10CFR20, Standards for Protection against Radiation, December 31, 1992.
- 7.1.4 Nuclear Business Unit Emergency Plan

7.2 **Cross References**

- 7.2.1 NC.EP-EP.ZZ-0302(Q), Radiological Assessment Coordinator Response
- 7.2.2 NC.EP-EP.ZZ-0301(Q), Shift Radiation Protection Response

7.3 **Closing Documents**

Closing Document-027Z (CD-027Z) NRC Inspection Item 354/85-44-01

ATTACHMENT 1

PAGE 1 OF 1

INDIVIDUAL RADIATION EXPOSURE RECORD

DATE/TIME: ___ - ___ - ___ / ___ : ___

1.0 INDIVIDUAL INFORMATION

Name: _____ Badge Number: _____

NOTE

Dose tracking may be performed using the PRORAD system, if PRORAD is operational, instead of this attachment.

1.1 NAME: _____ BADGE NUMBER: _____

1.2 CURRENT YEARLY DOSE: _____ (mRem)

2.0 Job Specific Information

Team Number	Dose Rec'd (mRem)	Yr. Remaining Dose (mRem)*	Initial When Entered into PRORAD

*Year Remaining Dose (mRem) = (4500 mRem – Current Year Dose – Dose Received)

ATTACHMENT 2

Page 1 of 2

ALARA ANALYSIS FORM

NOTE

Planned exposure to an individual that is projected to result in dose to an individual ≥ 4500 mrem(EDE) in this calendar year requires emergency exposure authorization and should meet the criteria of accident mitigation or life saving tasks as outlined in Attachment 3.

1.0 Projected Dose Analysis:

1.1 Entry Route: _____

1.1.1 Time Required to reach job site: _____ (hours)

1.1.2 Dose Rate(s) in areas that need to be traversed: _____ (rem/hr)

1.1.3 Calculated Dose (individual dose): _____ (rem)
 (1.1.1 * 1.1.2 = 1.1.3)

1.2 Tasks to be Performed: _____

1.2.1 Time required to perform job: _____ (hours)

1.2.2 Dose rate in job areas: _____ (rem/hr)

1.2.3 Calculated Dose (individual dose): _____ (rem)
 (1.2.1 * 1.2.2 = 1.2.3)

1.3 Exit Routes: _____

1.3.1 Time Required to exit area: _____ (hours)

1.3.2 Dose Rate(s) in areas that need to be traversed: _____ (rem/hr)

1.3.3 Calculated Dose (individual dose): _____ (rem)
 (1.3.1 * 1.3.2 = 1.3.3)

1.4 Total Individual External Dose Equivalent: _____ (rem)
[(1.1.3 + 1.2.3 + 1.3.3 = 1.4) Total Individual EDE]

ATTACHMENT 2 (cont)
Page 2 of 2

2.0 Team Briefing

2.1 Information Covered During Briefing: _____

2.2 Personnel Attending Briefing:

Name	Signature	Badge #	Name	Signature	Badge #

ATTACHMENT 3

Page 1 of 4

SELECTION AND AUTHORIZATION FOR EMERGENCY EXPOSURES

1.0 Effects Of Exposure To Radiation on the Human Body

1.1 The Following Information Is Based on ACUTE EDE Exposure to Radiation.

RANGE	0 to 100 (rem)	100 to 200 (rem)	200 to 600 (rem)	600 to 1000 (rem)	1000 to 5000 (rem)	1000 to 5000 (rem)
Vomiting	None	5 to 50%	> 300 rem 100%	100%	100%	100%
Delay Time	-----	3 hr.	2 hr.	1 hr.	30 minutes	
Leading Organ	None	Bone Marrow			GI Tract	Central Nervous System
Characteristic Signs	None	Moderate leukopenia	Severe leukopenia, hemorrhage, infection, purpura, epilation at > 300 rem		Diarrhea, fever, electrolyte loss	Convulsions tremor, ataxia
Therapy	Reassurance	Blood Monitoring	Blood Transfusion Antibiotics	Marrow transplant? Growth factors?	Maintain electrolytes	Sedatives
Prognosis	Excellent	Excellent	Good	Guarded	Grave to Hopeless	
Incidence of Death	None	None	0 to 80%	80% to 90%	90 to 100%	

Leukopenia – drop in leukocyte (white blood cell) count.

Purpura – formation of small splotchy red or purple spots on the skin caused by rupture of a capillary with leakage of a small amount of blood under the skin layers.

Epilation – loss of hair. Will generally grow back within a month.

Ataxia – loss of muscular coordination.

2.0 **GENERAL INFORMATION**

- Voluntary consent, pre-job briefings, and EDO authorization for Life Saving Tasks, that require Emergency Exposure, should be done verbally prior to, or during, the OSC Team being dispatched.
- This attachment (Attachment 3) should be completed as soon as possible, after the return of the OSC Life Saving Team's return.

ATTACHMENT 3

Page 2 of 4

- Emergency exposure should only be authorized by the Emergency Duty Officer (EDO) and cannot be delegated. The OS has this responsibility until the EDO assumes his responsibilities.
- Emergency exposure authorization may be done via telephone.
- Emergency exposure should be voluntary.
- Individual who do volunteer should:
 - ◆ Have attended and passed Radiation Worker Training
 - ◆ Be above age 45 if available and physically qualified for the task
 - ◆ Not have previously received Emergency exposure.
- Emergency exposures received should be added to the individual's current occupational radiation exposure history.
- An individual's exposure is not considered to be an Emergency exposure if his/her total exposure for the year is 4.5 rem or less upon finishing an accident mitigation or life saving task and may still volunteer to receive Emergency exposure.
- Declared pregnant women **SHALL NOT** be allowed to volunteer for Emergency exposure.

3.0 **EXPOSURE CRITERIA LIFE SAVING EMERGENCY**

- Any and all actions necessary to preserve life, including, but not limited to:
 - ◆ Removal of injured personnel
 - ◆ Providing medical treatment/first aid
 - ◆ Providing ambulance service to injured personnel
- Planned Emergency Exposure Limit (PEEL) for life saving is 75 rem EDE.

4.0 **ACCIDENT MITIGATION EMERGENCY EXPOSURE CRITERIA**

- Any and all actions necessary to mitigate an accident, including, but not limited to:
 - ◆ Performance of actions to prevent immediate deterioration of the plant status.

ATTACHMENT 3

Page 4 of 4

6.0 VOLUNTARY CONSENT

I, the under signed, volunteer for Emergency Exposure:

PEEL (REM)	NAME	SIGNATURE	BADGE #

7.0 EMERGENCY EXPOSURE AUTHORIZATION

I hereby authorize the planned Emergency Exposure(s) for the individual(s) listed in Section 6 of (Voluntary Consent) of this Attachment.

Emergency Exposure Authorized by: (EDO) _____

DATE/TIME: ____ - ____ - ____ / ____ : ____

8.0 ACTUAL EDE DOSE RECEIVED

Badge #	Name (Print)	Current Yr. Dose (REM)	Dose Received (REM)	Total Dose (REM)

Initial when entered into PRORAD: _____ DATE/TIME: ____ - ____ - ____ / ____ : ____

ATTACHMENT 4
Page 1 of 1
ONSITE PROTECTIVE ACTION GUIDELINES

1.0 RADIATION LEVELS

<u>Dose Rate (mR/hr)</u> ≥ 100	<u>Location</u> Onsite	<u>Action</u> Evacuation of all nonessential personnel. Consider evacuation of other personnel.
<u>Dose Rate (mR/hr)</u> ≥ 100	<u>Location</u> Control Room OSC TSC Control Point	<u>Action</u> Consider evacuation within one hour, and/or relocation as appropriate.
<u>Dose Rate (mR/hr)</u> ≥ 1000	<u>Location</u> Onsite	<u>Action</u> Evacuation of all nonessential personnel Consider immediate evacuation of remaining personnel.
<u>Dose Rate (mR/hr)</u> ≥ 1000	<u>Location</u> Control Room OSC TSC Control Point	<u>Action</u> Consider immediate evacuation, and/or relocation upwind of the plume.

2.0 RADIOIODINE

If the Iodine-131 equivalent is calculated or measured in concentrations greater than or equal to 5.0E-7 uCi/cc, consider the use of Potassium Iodide for thyroid blocking. This section is to be applied to areas, in which personnel are working or are planning to work. Refer to NC EP-EP.ZZ-0305(Q), Potassium Iodine (KI) Administration, for additional information.

ATTACHMENT 5

Page 1 of 3

OPERATION OF THE VAX LA120 TERMINAL

1.0 METEOROLOGICAL DATA1.1 Perform The Following to Obtain Current 15 Minute Average Meteorological Data:

1.1.1 DEPRESS the RETURN key. (USERNAME should be displayed). _____

1.1.2 ENTER MET and depress the RETURN key _____

1.1.3 ENTER MET and depress the RETURN key. _____

NOTE

The most current meteorological data should be printed out followed by the Main Meteorological Menu. If no other keys are depressed, the current 15 minute average data will be printed out every 15 minutes

1.1.4 ENTER Option 3 (Disable Automatic Display of MET Data Every 15 minutes) and depress the RETURN key to stop the VAX LA120 from printing out meteorological data every 15 minutes. _____

1.1.5 ENTER Option 1 (Display Current Meteorological Data) and depress the RETURN key to receive the current 15 meteorological data print out. _____

1.1.6 ENTER Option 1 (Display Current Meteorological Data) and depress the RETURN key to receive the current 15 meteorological data print out. _____

1.2 Perform The Following Steps to Obtain Archived Meteorological Data:

1.2.1 DEPRESS the RETURN key. (USERNAME should be displayed) _____

1.2.2 ENTER MET and depress the RETURN key. (The most current meteorological data should be printed out followed by the Main Meteorological Menu). _____

ATTACHMENT 5

Page 2 of 3

- 1.2.3 ENTER Option 2 (Display Meteorological Data From Data Base) and depress the RETURN key. (Current system Date and Time will be displayed). _____
- 1.2.4 IF this is the data you want, THEN depress the RETURN key. (Your option will be printed out). _____
- 1.2.5 IF you want data from an another date and time, THEN go to Step 1.2.6. _____
- 1.2.6 ENTER start date and time as shown below and depress the RETURN key. (For December 27, 1989 at 0130 enter 27-DEC-1989 "depress the space bar once" and enter 01:30). _____
- 1.2.7 ENTER "Y" if the information is correct or "N" if the information is not correct and reenter it as shown in Step 1.2.6. _____
- 1.2.8 ENTER the end date and time as shown below and depress the RETURN key. (For December 28, 1989 at 0230 enter 28-DEC-1989 "depress the space bar once" and enter 02:30). _____
- 1.2.9 ENTER "Y" if the information is correct or "N" if the information is not correct and re-enter it as shown in Step 2.1.8. _____

2.0 **RMS AND MET DATA (FOR HOPE CREEK ONLY)**

2.1 **Perform The Following Steps To Obtain Current Instantaneous RMS And MET Data:**

- 2.1.1 DEPRESS the RETURN key. (USERNAME should be displayed). _____
- 2.1.2 ENTER EOF and depress the RETURN key. (A prompt should be displayed asking for PASSWORD). _____
- 2.1.3 ENTER EOFUSER and depress the RETURN key. (The EOF Plant Menu should be displayed.) _____
- 2.1.4 SELECT Option 1 for Hope Creek. _____
- 2.1.5 DEPRESS the RETURN key. (The EOF Report Options Menu will be displayed). _____

ATTACHMENT 5

Page 3 of 3

- 2.1.6 ENTER Option 1 (Current RMS Status) and depress the RETURN key. (The most current instantaneous RMS and 15 minute MET data will be printed out.) _____
- 2.2 **Perform The Following Steps To Obtain 15 Minute Average RMS Data:**
- 2.2.1 DEPRESS the RETURN key. (USERNAME should be displayed). _____
- 2.2.2 ENTER EOF and depress the RETURN key. (A prompt should be displayed asking for PASSWORD). _____
- 2.2.3 ENTER EOFUSER and depress the RETURN key. (The EOF Plant Menu should be displayed). _____
- 2.2.4 SELECT option 1 for Hope Creek. _____
- 2.2.5 DEPRESS the RETURN key. (The EOF Report Options Menu should be displayed). _____
- 2.2.6 SELECT and enter option number 6 (15 Minute Historical Data). (Current system date and time should be displayed. A prompt should be displayed for start date and time) _____
- 2.2.7 DEPRESS the RETURN key for 15 minute average RMS and MET data. (Your selection will be printed). _____

FORM - 1

TLD LOG

Name _____

Date _____ TLD Number _____ Badge Number _____

To the best of my knowledge, my current annually exposure is _____ mrem.

Signature _____

Date _____

Name _____

Date _____ TLD Number _____ Badge Number _____

To the best of my knowledge, my current annually exposure is _____ mrem.

Signature _____

Date _____

Name _____

Date _____ TLD Number _____ Badge Number _____

To the best of my knowledge, my current annually exposure is _____ mrem.

Signature _____

Date _____
