Calvert Cliffs Nuclear Power Plant

1650 Calvert Cliffs Parkway
Lusby, Maryland 20657

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CALVERT CLIFFS
NUCLEAR POWER PLANT

November 10, 2010

U. S. Nuclear Regulatory Commission
Washington, DC 20555

ATTENTION: Document Control Desk

SUBJECT: Calvert Cliffs Nuclear Power Plant
Unit Nos. 1 & 2; Docket Nos. 50-317 & 50-318
Independent Spent Fuel Storage Installation Docket No. 72-8
Changes to the Emergency Response Plan and Implementing Procedures

As required by 10 CFR 50.54(q), 10 CFR Part 50 Appendix E.V, and 10 CFR 72.44(f), changes to the Emergency Response Plan Implementing Procedures are enclosed. These changes do not decrease the effectiveness of the Emergency Response Plan.

Should you have questions regarding this matter, please contact Mr. Douglas E. Lauver at (410) 495-5219 or Mr. Michael J. Fick at (410) 495-5216.

Very truly yours,

Michael J. Fick

Michael J. Fick
Director - Emergency Preparedness

MJF/PSF/bjd

Enclosures:
ERPIP-B.1, Revision 03400
ERPIP-105, Revision 01801
ERPIP-106, Revision 00600
ERPIP-109, Revision 00801
ERPIP-750, Revision 01100
ERPIP-800, Revision 0102
ERPIP-821, Revision 00600
ERPIP-903, Revision 00501

cc: W. M. Dean, NRC
Resident Inspector, NRC
V. Ordaz, NRC (ISFSI, Spent Fuel Project Office)

(Without Enclosures)
D. V. Pickett, NRC
S. Gray, DNR

AX45
NMSS01

NRR
NMSS

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Calvert Cliffs Nuclear Power Plant
TECHNICAL PROCEDURE

ERPIP-B.1

EQUIPMENT CHECKLIST

Revision 03400

Safety Related

CONTINUOUS USE

Applicable To:

- **Calvert Cliffs Nuclear Power Plant**

Approval Authority:
Plant General Manager

SUMMARY OF ALTERATIONS

Revision	Change	Summary of Revision or Change
034	00	This is a major revision and no revision bars were used. Editorial Corrections were made throughout the procedure in accordance with CNG-PR-1.01-1005 **2.1** – removed "(person completing inventory, Emergency Preparedness (EP) person responsible for collecting and reviewing inventory, and EP Director)" This is a responsibility. **3.1.4** – removed "s" at the end of Production **3.1.5** – add RSP-3-204, Direct Reading Dosimeter Inventory and testing. **3.3** – added definitions – High Range Dosimetry and Low Range Dosimetry. **6.2.2** – changed "for initials AND date" to "is intact, if appropriate" (RPA-2009-0150) **6.2.4** – added Caution for Aerosol Cans (PCR-09-02901) **6.2.4.3** – Changed wording from "**AND** as applicable, **THEN**" to "**THEN** (as applicable)" **6.2.4.3.i** – changed "possible" to "appropriate" **6.2.4.3.i of R03300**– deleted step (1) – we no longer initial and date break-away. (RPA-2009-0150) **6.3.7** – added "or designee" **9.3.1.1** and **9.3.1.2** – changed attachment records from 1 through 9 to 1 through 21 (PCR-09-06232) **9.3.1.2** – added "2 years - Non-actual event" and "Lifetime - actual event" **Attachment 1 Batteries** – added AA cell (4) and C cell (3) **Attachment 2 Documents** – added RSP-1-107, Personnel Contamination Assessment/Decontamination (2 Binder) (PCR-10-01814) **Attachment 3** changed title to Control Room – Administrative; Changed Attachment 3A to Attachment 4, Control Room – Technical **Attachment 4 Protective Clothing** – added Hard Hats (3) and Safety Glasses (3) (PCR-09-01722) **Attachment 6** – changed Kit # 3 location to NOF 1 closet and Kit # 4 location to NOF 1 Closet; (PCR-09-05573) **Attachment 6 -Documents** – changed ERPIP-507 Attachment 2 & 3 to ERPIP-903, Attachment 5 & 6; **Attachment 7 – B.5.b Equipment** – added head after Phillips and deleted 4 spare D batteries (PCR-10-03915)

SUMMARY OF ALTERATIONS (Continued)

Revision	Change	Summary of Revision or Change
034	00	**Attachment 9** – changed title to "Operational Support Center – Administrative **Attachment 9 - Documents** – deleted Chemistry Procedures **Attachment 9 -Office Supplies** – added Hard Hats (3) and Safety Glasses (3) (PCR-09-01722) **Attachment 9 - Instrumentation** – added "all located in NOF closet" Deleted – OSC/NSF Monitor Cabinet table (PCR-10-04042) **Attachment 10** – changed Attachment 8A to Attachment 10 and changed title to Operational Support Center – Technical" **Attachment 10 – Radiological Monitoring Instrumentation Kits** – Deleted "Cs-137 Source" (PCR-10-02594) **Attachment 10 – Medical (OTF)** – added "350 predistributed to security" (RPA-2009-0387) **Attachment 10** – Added "**OSC Communicator Desk**" – cell phone (1), cell phone charger (1) and Blackberry computer charger (1) (PCR-09-02517) **Attachment 10 – Radiological Monitoring Equipment & Sampling Materials** – deleted glove liners (25) and particulate filters (1 box); changed Povidine Scrub to Povidine Surgical **Attachment 14 – Team Rosters** – deleted Dosimetry Team and Radiation Safety Technicians; added Survey Team (PCR-10-03609) **Attachment 16 – Clerical Support Office** – deleted 3.5" disc (RPA-2009-0151) **Attachment 16 – Dose Assessment Room** – added Laptop computer (RADDOSE loaded) (PCR-09-02643) Removed Offsite Monitoring Team Leader Log Book. **Attachment 16 – Status Room** – added Satellite Phone (1) (RPA-2009-0151) Added "**EOF Communicator Desk**" cell phone (1), cell phone charger (1) , Blackberry computer charger (2) and Blackberry charger (2) (PCR-09-02517) **Attachment 17** – added "**Technical Advisor Desk**"- cell phone (1), cell phone charger (1) , Blackberry computer charger (2) and Blackberry charger (1) (PCR-09-02517) **Attachment 17 – Auditorium** – added laser pointer (1) to inventory **Attachment 18 – Supplies**–added Hard Hat (3) and Safety Glasses (3) Added "**TSC Communicator Desk**" – cell phone (1) and cell phone charger (1) (PCR-09-02517) **Attachment 20** – Added St. Mary's Hospital to the Total Amount of Dosimetry for ERPIP and added locations St. Mary's Hospital, Calvert County, St. Mary's County, Dorchester County, and MDE to the list of Radiation Detection Meters.

TABLE OF CONTENTS

TABLE OF CONTENTS (Continued)

1.0 PURPOSE

1.1. The purpose of this procedure is to provide Emergency Response Organization (ERO) Facility Inventory Checklists for use during auditing, drills and exercises, and actual events.

2.0 APPLICABILITY/SCOPE

2.1. Objective

This procedure applies to personnel performing inventory audits as part of scheduled inventory audits, during a drill or an exercise as part of ERO center activation, after ERO center use (that is, completion of drill, an exercise, actual event), or for suspected tampering.

3.0 REFERENCES AND DEFINITIONS

3.1. Developmental References

3.1.1. Calvert Cliffs Nuclear Power Plant Emergency Response Plan

3.1.2. NUREG 0654, Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants

3.1.3. 10 CFR 50.47, Emergency Plans

3.1.4. 10 CFR 50 Appendix E to Part 50, Emergency Planning and Preparedness for Production and Utilization Facilities

3.1.5. RSP 3-204, Direct Reading Dosimeter Inventory and Testing

3.2. Performance References

3.2.1. CNG-CA-1.01-1000, Corrective Actions Program

3.2.2. CNG-PR-2.01-1000, Document Control

3.2.3. CNG-PR-3.01-1000, Records Management

3.2.4. ERPIP-903, Monitoring Equipment and Instrumentation

3.3. **Definitions**

None

4.0 PREREQUISITES

None

5.0 PRECAUTIONS AND LIMITATIONS

None

6.0 PERFORMANCE

6.1. Activation

6.1.1. **INITIATE** equipment inventory as directed by the EPU preventive maintenance schedule, as needed to support drill or exercise performance, or in response to an actual event.

6.2. Operation

NOTE

Controlled Documents (for example, ERPIPs, UFSAR, Tech Specs, and other plant procedures) and drawing files located in these centers are maintained as a function of CNG-PR-2.01-1000, Document Control. Inventory check under ERPIP-B.1 is to verify that these documents and drawings are in place and in good condition; it is not an individual drawing check or procedure page check.

6.2.1. **OBTAIN** a copy of the applicable Facility Checklists from one of the following:

- User-Controlled Copy of ERPIP B.1, Equipment Checklist located at the ERF.
- Fleet Configuration Management System (FCMS)

6.2.2. **CHECK** Inventory Break-Away Seal is intact, if appropriate.

6.2.3. **IF** date is within the last year **AND** the inventory does not contain equipment to be operationally checked **OR** supplies that will expire before the next inventory, **THEN DO NOT** inventory.

CAUTION

Aerosol cans are NOT to be stored in equipment inventories that are not climate controlled. This may create an explosion hazard.

6.2.4. **PERFORM** inventory auditing according to the appropriate checklists.

1. **CHECK** each item on the checklist.

2. **AS** applicable, **THEN**:

   a. **VERIFY** all instruments are within their calibration due date.

      (1) Meters are out of calibration at 2400 hours on the date indicated.

   b. **PERFORM** Instrument Battery Tests for portable radiological instruments.

      (1) **IF** instrument battery test indicates the need to replace the batteries, **THEN REPLACE** the instrument batteries.

   c. **PERFORM** Radiological Instrument Response Checks according to ERPIP-903, Monitoring Equipment and Instrumentation.

   d. **VERIFY** Dosimetry is within calibration.

   e. **VERIFY** that all time sensitive supplies and Dosimetry (various inventories), are within expiration date **AND** will not expire before the next inventory.

   f. **VERIFY** all items are available in the quantity required.

   g. **CIRCLE** any item that is not available in the appropriate block (that is, quantity required, is out of calibration, or is beyond its expiration date).

6.2.4.2 (Continued)

(1) **PROVIDE** details about circled items in Remarks Section.

3. **IF** an inventory is not whole, **THEN** (as applicable):

a. **REPLACE** monitoring equipment and instrumentation that are out of calibration **OR** failed the response check, with spares from the spare storage.

(1) **TAKE** failed instruments to the Test Equipment Shop for repair or calibration.

(2) **NOTIFY** EPU of instrument taken to the test equipment shop **AND** what instrument replaces it.

b. **NOTIFY** Dosimetry to replace expired Dosimetry.

c. **REPLACE** expired time sensitive supplies.

d. **RESTORE** inventory levels to the quantity required.

e. **NOTIFY** the following for repair of broken or malfunctioning equipment:

(1) Facsimile Machines: Designated facsimile repair company with machine make, model, Serial Number and location.

(2) Copiers: Designated copier repair company with model number, serial number and location of machine.

(3) Radio: Help Desk with radio name, type and location of equipment.

6.2.4.3 (Continued)

NOTE

A Condition Report (Step 6.2.4.f) is not necessary or warranted for missing consumables (for example, pens, paper, and administrative supplies) provided the items are replenished during the inventory.

f. **IF** actions are taken under step 6.2.4.3 of this instruction, **THEN SUBMIT** a Condition Report according to CNG-CA-1.01-1000, Corrective Actions Program.

g. **DOCUMENT** inventory discrepancies in the remarks section of the inventory checklist.

h. **WHEN** all discrepancies are corrected, **THEN SIGN** and **DATE** the equipment checklist.

i. **IF** appropriate, **THEN ATTACH** a Break-Away Seal to inventory closure.

j. **SUBMIT** the completed checklist to EPU for review.

6.3. **Deactivation**

6.3.1. **INITIATE** an Equipment Inventory at the conclusion of a drill or actual event.

6.3.2. **SIGN** the applicable Equipment Checklist as person completing inventory.

6.3.3. **FORWARD** the Equipment Checklist to the EP person responsible for collecting and reviewing inventory.

6.3.4. **REVIEW** the Equipment Checklist for accuracy **AND** completion.

6.3.5. **SIGN** the Equipment Checklist as EP person responsible for collecting and reviewing inventory.

6.3.6. **FORWARD** the Equipment Checklist to Director – EP.

6.3.7. **SIGN** the Equipment Checklist as Director – EP or designee for approval.

7.0 POST-PERFORMANCE ACTIVITIES

None

8.0 BASES

[B1220] IR3-051-226, AIT IR200001056, replace aging ERO radiological survey instruments.

[B2345] NRC Letter, Catherine Haney (NRR) to J. A. Spina (CCNPP), "Calvert Cliffs Nuclear Power Plant, Units 1 & 2 – Mitigation Strategy Assessments and Closure Process for Phases 1, 2, and 3", date October 12, 2006.

9.0 RECORDS

9.1. Records Management

9.1.1. Records generated by this procedure shall be captured and controlled according to CNG-PR-3.01-1000, Records Management. Before transferring records for retention, legibility, and completeness for the records shall be verified by the transmitting organization.

9.2. Record Forms

9.2.1. The forms which are attachments to this procedure are representative of the forms used to implement the process to this procedure. These forms may be revised or computer generated without requiring a change or revision to this procedure providing the intent is not changed and the information required from the procedure is not deleted from the existing forms.

9.3. Record Retention

9.3.1. Records generated by this procedure may be permanent, non-permanent, or lifetime radiological records depending on the circumstances under which they are generated. Records shall be captured and controlled as follows:

1. During an actual event as described in the purpose statement of this procedure, Records shall be considered permanent records and submitted to EPU for final disposition according to CNG-PR-3.01-1000, Records Management.

   - Attachments 1 through 21 Equipment Checklists

2. During a drill or exercise, records shall be considered non-permanent records and submitted to EPU for evaluation and retention according to CNG-PR-3.01-1000, Records Management.

Records	Retention
Attachments 1 through 21, Equipment Checklists	2 Years – Non-actual Event Lifetime - Actual Event

Attachment 1, AMBULANCE KIT (MAIN GATE)

☐ Quarter: 1 2 3 4 (Circle One) ☐ Post Drill/Exercise/Event (Circle one): _____ (date)

Year: _____ ☐ Other: _____

Batteries

Item	Quantity	Status	Item	Quantity	Status
D Cell	4	Expires:			
AA Cell	4	Expires:			
C Cell	3	Expires:			

DOCUMENTS:

☐ Ambulance Partial ERPIP Manual (1 binder)

☐ Calvert County Rad Exposure Record Forms (Ample)

Dosimetry

Item	Quantity	Status	Calibration
SRD 0-50 R	5		Within Cal? _____(date)
DLRs	10		Within Cal? _____(date)
Control DLRs	5		Within Cal? _____(date)
Dosimeter Charger	1	Op. Check _____	Spare Battery (1) Exp Date:

Radiological Monitoring Instrumentation

Item	Calibration	Battery Check	Source Check
**E-600 Meter	Within Cal? _____(date)		N/A
**SHP-270	Within Cal? _____(date)	N/A	
**SHP-360	Within Cal? _____(date)	N/A	
Cs-137 Source	SN:	N/A	N/A

Protective Clothing & Accessories

Item	Quantity	Status	Item	Quantity	Status
Gloves Liners	5 sets		Radiation Rope	50 ft.	
Paper Anti-Cs	5		Radiation Signs w/inserts	1 set	
Paper Smears	1 box		Radiation Tape	1 roll	
Plastic Shoe Covers	5 sets		Rubber Gloves[1]	5 pair	
Plastic Bags	5		Masking Tape	1 roll	
Flashlight Op. Check:_____	1				

REMARKS:

Completed: _____ Date: _____

Reviewed : _____ Date: _____

*Approved: _____ Date: _____

Tamper seal replaced (if required) (Circle one)? Yes No

*All inventories, scheduled or otherwise, must have approval by signature.

**See ERPIP-903 for source check instructions.

[1] – Rubber gloves shall be checked every year first quarter and replaced as needed

Attachment 2, CALVERT MEMORIAL HOSPITAL

☐ Quarter: 1 2 3 4 (Circle One) ☐ Post Drill/Exercise/Event (Circle one): _____ (date)

Year: _____ ☐ Other: _____

Batteries

Item	Quantity	Status	Item	Quantity	Status
D Cell	4				

Documents

☐ Hospital Partial ERPIP Manual (2 binders)

☐ RSP-1-107, Personnel Contamination Assessment /Decontamination (2 binder)

Equipment

Item	Status	Item	Status
Plastic Bags		Scissors	
Bowls		Irrigation Syringe	
Fingernail Clippers		Marker	
Toenail Clippers		Pen	
Decontamination Manual		Small Containers	
Decontamination Solutions		Shampoo	
Dropper Bottle		Tweezers	
Labels, Pre-Printed			
Pencils			

Item (Quantity)

Protective Clothing & Accessories

Item	Quantity	Status	Item	Quantity	Status
Aprons, White Disposable	12		Plastic Sheeting	1 roll	
Barrel, 32 gal. (Plastic)	2		Radiation Warning Signs	2 sets	
Decontamination Table Top	1		Radioactive Material Tape	1 roll	
Masking Tape	1 roll		Radioactive Waste Bags	12	
Glove Liners	1 bag		Rope, Yellow/Magenta	2 rolls	
Herculite Floor Coverings	1 set		Surgical Gloves[1]	1 box	
Herculite Roll	1		Shower Head w/Hose	1	
Lead Sample Container	1		Smears	1 box	
Massilin Cloth	4 pks		Step-off Pads	4	
Paper Gowns	1 box		Surgeon's Cap	1 box	
Paper Suits	1 box		Surgical Masks	1 box	
Plastic Bags	12		Wall Clock	1	
Plastic Booties	1 bag		Window Shield	1	

Attachment 2, CALVERT MEMORIAL HOSPITAL (Continued)

Radiological Monitoring Instrumentation

Item	Calibration	Battery Check	Source Check
**E-600 Meter	Within Cal? _____(date)		N/A
**RM-14	Within Cal? _____(date)		
**SHP-270	Within Cal? _____(date)	N/A	
**SHP-360	Within Cal? _____(date)	N/A	
Cs-137 Source	SN:	N/A	N/A

Item	Quantity	Status	Calibration
DLR, Wrist-type	16		Within Cal? _____(date)
DLR, W.B.	20		Within Cal? _____(date)
DLR, Control	5		Within Cal? _____(date)
DRD, 0-200 mR	10		Within Cal? _____(date)
DRD, 0-200 R	10		Within Cal? _____(date)
DRD, 0-5 R	10		Within Cal? _____(date)
Dosimeter Charger	Status:_____		Op. Check _____

REMARKS:

Completed: _____ Date: _____

Reviewed : _____ Date: _____

*Approved: _____ Date: _____

*All inventories, scheduled or otherwise, must have approval by signature.
**See ERPIP-903 for source check instructions.
1 – Rubber gloves shall be checked every first quarter and replaced every two years as needed.

Attachment 3, CONTROL ROOM - ADMINISTRATIVE

☐ Quarter: 1 2 3 4 (Circle One)	☐ Post Drill/Exercise/Event (Circle one): _____ (date)
Year: _____	☐ Other: _____

SHIFT SUPERVISOR'S OFFICE

☐ Emergency Response Plan (ERP) (1 binder)	Rev
☐ Control Room Partial ERPIP Manual (1 binder)	
☐ EAL Technical Basis Document (EAL) (1 binder)	Rev
☐ Immediate Actions ERPIP Manual (1 binder)	Rev

CONTROL ROOM

Item	Quantity	Status	
10 Mile EPZ Map (Framed and Mounted to Wall)	1 set		N/A
50 Mile EPZ Map (Framed and Mounted to Wall)	1 set		Right side wall, behind U1 Panel
Computer Cabinet, RADDOSE Computer & Printer	1		N/A
Meteorological Display Terminal	1		N/A
Meteorological Data Printer	1		N/A
Plant Parameters Workstation	1		Power check:
Fax Machine Speed Dial Card (at fax machine)			

☐ Control Room Partial ERPIP Manual (one book located in Computer Cabinet) (4 binders)
☐ ERPIP, Full Set (3 vols) (1 set)
☐ Immediate Actions ERPIP Manual (1 binder) Rev
☐ EAL Technical Basis Document (EAL) (1 binder) Rev
☐ RADDOSE Manual (Located in Computer Cabinet) (1 binder)

UNIT 1 DAS ROOM

Two Drawer File Cabinet					
Item	Quantity	Status	Item	Quantity	Status
10 Mile Folded EPZ Map	10		Notepad	Ample	
Pencils	Ample				
Pens	Ample				

REMARKS:

Completed: _____ Date: _____

Reviewed : _____ Date: _____

*Approved: _____ Date: _____

*All inventories, scheduled or otherwise, must have approval by signature.

Attachment 4, CONTROL ROOM - TECHNICAL

Emergency Cabinet (Located Behind Unit 1 Panel)

☐ Quarter: 1 2 3 4 (Circle One) ☐ Post Drill/Exercise/Event (Circle one): _____ (date)

Year: _____ ☐ Other: _____

Batteries

Item	Quantity	Status	Item	Quantity	Status
D Cell	4	Expires:			

Documents

☐ CR/TSC Monitor Partial ERPIP Manual (Located in Control Room Cabinet) 1 binder

☐ Control Room Partial ERPIP Manual (Located in Control Room Cabinet) 1 binder

Dosimetry

Item	Quantity	Status	Calibration
Control DLRs	5		Within Cal? _____(date)
DLRs	10		Within Cal? _____(date)
DRD 0-200 mR	10		Within Cal? _____(date)
DRD 0-1 R	10		Within Cal? _____(date)

Dosimeter Charger Status: Op. Check _____ Spare Bat: (1) Exp Date:

Protective Clothing & Accessories

Item	Quantity	Status	Item	Quantity	Status
Air Sample Envelopes	Ample		Particulate Filters	1 box	
Anti-Cs Complete Sets	10		Plastic Bags, Small	10	
Masking Tape	1 roll		Plastic Anti-C	10	
Paper	1 pack		Smears	1 box	
Paper Suits	10		Flashlight Op Check :___	1	
Millipore Filters	1 box		Ground Fault Circuit Interrupter	1	
Log Book (GS-NPO)	1		Tweezers	1	
Charcoal Cartridges	10	Expiration Date:	Sealed: Yes	No	
Silver Zeolite Cartridges	10	Expiration Date:	Sealed: Yes	No	
Hard Hats	3		Safety Glasses	3	

Attachment 4, CONTROL ROOM - TECHNICAL (Continued)

Emergency Cabinet (Located Behind Unit 1 Panel)

Radiological Monitoring Instrumentation

Item	Calibration	Battery Check	Source Check
**E-600	Within Cal? _____(date)		N/A
**SHP-270	Within Cal? _____(date)	N/A	
**SHP-310	Within Cal? _____(date)	N/A	
**SHP-360	Within Cal? _____(date)	N/A	
**SPA-9	Within Cal? _____(date)	N/A	
RM-14**	Within Cal? _____(date)		
Air Sampler (AC power)	Within Cal? _____(date)	N/A	N/A
Cs-137 Source	SN:	N/A	N/A
Ba-133 Source	SN:	N/A	N/A

Respiratory Protection Equipment & Accessories

Item	Quantity		
Negative Pressure Respirator w/Iodine Filters	5	Expires:	N/A
Negative Pressure Respirators w/Particulate Filters	5	Status:	N/A
SCBAs (8 in hallway to TSC, 15 Unit I&II - Computer Room)	23	Status:	N/A
Off-site Survey Point Location Manual	2	N/A	N/A
Razors	1 pkg	Status:	
Shaving Cream[1]	1 can	N/A	Op. Check:
Spare Iodine Respirator Filters	5	Expires:	N/A
Spare Particulate Respirator Filters	5	Status:	N/A

REMARKS:

Completed: _____ Date: _____

Reviewed : _____ Date: _____

*Approved: _____ Date: _____

Tamper seal replaced (if required) (Circle one)? Yes No

*All inventories, scheduled or otherwise, must have approval by signature.
**See ERPIP-903 for source check instructions.
1 – Shaving Cream shall be replaced every year in the first quarter

Attachment 5, FARM DEMONSTRATION BUILDING [B1220]

Note: Equipment maintained for: (1) OFMT use in the event onsite radiological conditions prohibit access to emergency equipment kits, (2) controlled access to site by required recall personnel and (3) decontamination purposes.

☐ Quarter: 1 2 3 4 (Circle One) ☐ Post Drill/Exercise/Event (Circle one): _____ (date)					
Year: _____ ☐ Other: _____					
Batteries					
Item	**Quantity**	**Status**	**Item**	**Quantity**	**Status**
D Cell	6	Expires:			
Documents					
☐ Farm Demo Partial ERPIP Manual (1 binder)					
☐ Radiation Safety Procedures (RSP) (1 set)					

Dosimetry			
Item	**Quantity**	**Status**	**Calibration**
Control DLRs (5)	5		Within Cal? _____(date)
DLRs (25)	25		Within Cal? _____(date)
DRD 0-200 mR (25)	25		Within Cal? _____(date)
DRD 0-5 R (25)	25		Within Cal? _____(date)
DRD 0-50 R (25)	25		Within Cal? _____(date)
DRD 0-200 R (25)	25		Within Cal? _____(date)
Dosimeter Charger	Status:	Op. Check _____	Spare Bat: (1) Exp Date:

Hand-Held Radios (3)		
Item		**Remarks**
Radio ID# _____		
Radio ID# _____		
Radio ID# _____		
Radio Batteries (6)		

Instrumentation & Accessories			
Item	**Calibration**	**Battery Check**	**Source Check**
**E-600	Within Cal? _____(date)		N/A
**SHP-270	Within Cal? _____(date)	N/A	
**SHP-310	Within Cal? _____(date)	N/A	
**SHP-360	Within Cal? _____(date)	N/A	
**SPA-9	Within Cal? _____(date)	N/A	
**RM-14	Within Cal? _____(date)		
Air sampler (DC)	Within Cal? _____(date)	N/A	N/A
Cs-137 Source	SN:	N/A	N/A
Ba-133 Source	SN:	N/A	N/A

Attachment 5, FARM DEMONSTRATION BUILDING [B1220] (Continued)

Protective Equipment & Supplies

Item	Quantity	Status	Item	Quantity	Status
Anti-Cs Complete Sets	15		Plastic Anti-C's	1 box	
Calculators	2	Op. Ck.:	Povidine Surgical Solution	1 bottle	Expires:
Masking Tape	1 roll		Radiation Tape	2 rolls	
Rubber Gloves[1]	20 pair		Raincoats	12	
Glove Liners	20 pair		Flashlight:	2	Op. Ck.:
Ground Fault Circuit Interrupter	1		Soap, Bars	10	
Notepads/Paper (Misc. sizes)	5		Soft Bristle Brush	10	
Paper Suits	4 boxes		Step-Off Pads	3	
Pens	1 box		Towels	10	
Potassium Iodide, 130 mg case 1400 Doses				1 case	Expires:

Radiological Air Sampling Materials

Item	Quantity	Status	Item	Quantity	Status
Air Sample Envelopes	Ample		Millipore Filters	1 box	
Small Plastic Bags	Ample		Particulate Filters	1 box	
Large Plastic Bags	10		Tweezers	1	
Air Sampler Filter heads	2		Smears	2 boxes	
Charcoal cartridge	15		Expires:		
Silver Zeolite Cartridges	15		Expires:		

Respiratory Protective Equipment & Accessories

Item	Quantity	Status	Item	Quantity	Status
SCBAs	36		Air Cylinders, Spares	72	
Negative Pressure Respirators	15		Particulate Respirator Filters, Spares	15	
Razors	1 pkg		Shaving Cream[2]	1 can	Op. Ck.:

REMARKS:

Completed: _____ Date: _____

Reviewed : _____ Date: _____

*Approved: _____ Date: _____

Tamper seal replaced (if required) (Circle one)? Yes No

*All inventories, scheduled or otherwise, must have approval by signature.
**See ERPIP-903 for source check instructions.
1 – Rubber gloves shall be checked every year first quarter and replaced as needed
2 – Shaving Cream shall be replaced every year in the first quarter

Attachment 6, MOBILE MONITORING KIT [B1220]

Check One:
☐ Kit # 1 Vehicle_____ ☐ Kit # 2 Vehicle_____ ☐ Kit # 3 NOF 1 Closet
☐ Kit # 4 NOF 1 Closet

☐ Quarter: 1 2 3 4 (Circle One) ☐ Post Drill/Exercise/Event (Circle one): _____ (date)
Year: _____ ☐ Other: _____

(a) Batteries

Item	Quantity	Status	Item	Quantity	Status
D Cell	4	Expires:			

Documents

Monitoring Team Partial ERPIP Manual (each kit)		1 binder	
ERPIP-903, Attachment 5 & 6, Instrument Source Check	Rev	AMPLE	
ERPIP-507, Attachment 5, Exposure Rate	Rev	AMPLE	
ERPIP-507, Attachment 6, Airborne Activity Log	Rev	AMPLE	
ERPIP-507, Attachment 7, Ground Deposition Survey	Rev	AMPLE	
ERPIP-B.1, Attachment 5, Mobile Monitoring Kit	Rev	AMPLE	

Dosimetry

Item	Quantity	Status	Calibration
Control DLRs (5)	5		Within Cal? _____(date)
DLRs (3)	3		Within Cal? _____(date)
DRD 0-200 mR (3)	3		Within Cal? _____(date)
DRD 0-5 R (3)	3		Within Cal? _____(date)
DRD 0-50 R (3)	3		Within Cal? _____(date)
DRD 0-200 R (3)	3		Within Cal? _____(date)

Dosimeter Charger Status: Op. Check _____ Spare Bat: (1) Exp Date:

KEYS (The Following Keys Are Found In The NOF-1 Key Cabinet Inventory With NOF Vehicle Kits Only)

Item	Quantity	Status
Emergency keys sets consisting of: KI expiration date: _____ Vehicle (1 for each vehicle), farm demo bldg., farm demo gate & KI key chain fob.	2 SETS	

PHONES (The Following Phones Are Found In The NOF-1 Key Cabinet Inventory With NOF Vehicle Kits Only)

2 Cellular phones: Ensure plugged into AC outlet: **Status:**

Instrumentation (All located in NOF closet)

Item	W/in Cal?	Battery Check	Source Check
**E-600	Within Cal? _____(date)		N/A
**SHP-270	Within Cal? _____(date)	N/A	
**SHP-310	Within Cal? _____(date)	N/A	
**SHP-360	Within Cal? _____(date)	N/A	
**SPA-9	Within Cal? _____(date)	N/A	
Air Sampler	Within Cal? _____(date)	N/A	N/A
Cs-137 Source	SN:	N/A	N/A
Ba-133 Source	SN:	N/A	N/A

Attachment 6, MOBILE MONITORING KIT [B1220]

Check One:
☐ Kit # 1 Vehicle_____ ☐ Kit # 2 Vehicle_____ ☐ Kit # 3 NOF 1 Storage Area
☐ Kit # 4 NOF 1 Stairwell

Radiological Monitoring Equipment & Accessories

Item	Quantity	Status		
Calculator	2		Op. Ck.:	N/A
Charcoal Cartridges	10		Expires:	Sealed:
Silver Zeolite Cartridges	10		Expires:	Sealed:
Filter Head	2		N/A	N/A
Millipore Filters	1 box		N/A	N/A
Smears	1 box		N/A	N/A
Particulate Filters	1 box		N/A	N/A
Tweezers	1		N/A	N/A
Plastic Bags, Large	5		N/A	N/A
Plastic Bags, Small	20		N/A	N/A

Protective Clothing & Miscellaneous

Item	Quantity	Status	Item	Quantity	Status
12" Ruler	1		Radiation Tape	1 roll	
Clipboards	2		Razors	1 pkg	
Digital Watch/Stop Watch	1		Road Safety Vests	3	
Masking Tape	1 roll		Reflector Kit	1	
EPZ 10 mi. maps (Folded)	2		Rubber Gloves[1]	4 pair	
Flashlight	1	Op. Ck	Shaving Cream[2]	1 can	
Glove Liners	4 pair		Phone Card	1	
Negative Pressure Respirators w/ Iodine filters	2	Expires	Offsite Survey Point Location Manual with map	1	
Spare Iodine filters for Respirators	2	Expires:	KI (for mobile kits in stairwell only)	1	Expires:
Pen/Notepads	2 (each kit)		Tape Measure	1	
Radiation Signs	1 set				

REMARKS:

Completed: _____ Date: _____

Reviewed : _____ Date: _____

*Approved: _____ Date: _____

Tamper seal replaced (if required) (Circle one)? Yes No

*All inventories, scheduled or otherwise, must have approval by signature.
**See ERPIP-903 for source check instructions.
1 – Rubber gloves shall be checked every year first quarter and replaced as needed
2 – Shaving Cream shall be replaced every year in the first quarter

Attachment 7, NUCLEAR SECURITY FACILITY [B1220]

☐ Quarter: 1 2 3 4 (Circle One) ☐ Post Drill/Exercise/Event (Circle one): _____ (date)

Year: _____ ☐ Other: _____

(a) Batteries

Item	Quantity	Status	Item	Quantity	Status
D Cell	4	Expires:			

(b) Documents

☐ Nuclear Security Facility Partial ERPIP Manual (located in EP Cabinet) 1 binder

Dosimetry Kit

Item	Quantity	Status	Calibration
DLRs	100		Within Cal? _____(date)
DRDs, 0-200 mR	100		Within Cal? _____(date)
DLR Control Badges	5		Within Cal? _____(date)
Dosimeter Charger		Op. Ck.:	
Emergency Dosimeter Log (Ample)		Status:	Spare Bat: (1) Exp Date:

Radiological Monitoring & Air Sampling Equipment

Item	Quantity	Status	Item	Quantity	Status
Charcoal Cartridges	10		Expires:	Sealed	
Silver Zeolite Cartridges	10		Expires:	Sealed:	
Shaving Cream[2]	1 Can		Expires:		
Anti-C Complete Sets	32		Particulate Filters	1 box	
Air Sample Envelopes	Ample		Plastic Bags, Small	20	
Masking Tape	1 roll		Radiation Tape	2 rolls	
Extension Cord	1		Razors	1 pkg	
Millipore Filters	1 box		Rubber Gloves[1]	6 pair	
Glove Liners	6 pair		Smears	1 box	
Fax Machine (in ACS)	1		Power Check:	Verify Time:	
Fax Paper (in ACS)	Ample		Tweezers	1	
Ground Fault Circuit Interrupter	1				

B.5.b Equipment in Secondary Fire Brigade Locker [B2345]

Item	Quantity	Status	Item	Quantity	Status
800 MHz Radios	10		Spare batteries	10	
Steam Generator Level Monitoring Kit	2		Druck, Leads, Flashlight, Phillips head screwdriver, Flathead screwdriver, 4 spare AA batteries, Canvas bag	1	

Attachment 7, NUCLEAR SECURITY FACILITY [B1220] (Continued)

Respiratory Equipment

Item	Quantity	Status
Negative Pressure Respirators w/Iodine Filters	16	Expires:
Negative Pressure Respirators w/Particulate Filters	16	
Spare Respirator Iodine Filters	16	Expires:
Spare Respirator Particulate Filters	16	

REMARKS:

Completed: _____ Date: _____

Reviewed: _____ Date: _____

*Approved: _____ Date: _____

Tamper seal replaced (if required) (Circle one)? Yes No

*All inventories, scheduled or otherwise, must have approval by signature.
1 – Rubber gloves shall be checked every year first quarter and replaced as needed
2 – Shaving Cream shall be replaced every year in the first quarter

Attachment 8, ONSITE MONITORING KIT (NUCLEAR SECURITY FACILITY) [B1220]

These kits are for ONMT use during a loss of onsite power event.

Check One:
☐ Kit #1 ☐ Kit #2

☐ Quarter: 1 2 3 4 (Circle One) ☐ Post Drill/Exercise/Event (Circle one): _____ (date)
Year: _____ ☐ Other: _____

Radiological Monitoring Instruments And Supplies

Item	Quantity	Status	Item	Quantity	Status
8 x 11 Notepad	2		Particulate Filter	1 box	
Air Sampler	1		Plastic Bags, Large	5	
Ball Point Pens	2		Plastic Bags, Small	20	
Masking Tape	1 roll		Rubber Gloves[1]	4 pr	
Filter Head	2		Air Sample Envelopes	Ample	
Glove Liners	4 pair		Smears	1 box	
Millipore Filters	1 box		Tweezers	1	
Jumper Cable Pig Tail	1				
Item	**Quantity**	**Status**			
Charcoal Cartridges	10		Expires:	Sealed:	
Silver Zeolite Cartridges	10		Expires:	Sealed:	
D Batteries:	2		Expires:		
Flashlight:	1		Op. Ck.:		

Document

☐ Onsite Monitoring Team (ONMT) Partial ERPIP Manual (1 binder)

REMARKS: _____

Completed: _____ Date: _____

Reviewed : _____ Date: _____

*Approved: _____ Date: _____

Tamper seal replaced (if required) (Circle one)? Yes No

*All inventories, scheduled or otherwise, must have approval by signature.

1 – Rubber gloves shall be checked every year first quarter and replaced as needed

Attachment 9, OPERATIONAL SUPPORT CENTER - ADMINISTRATIVE

☐ Quarter: 1 2 3 4 (Circle One) ☐ Post Drill/Exercise/Event (Circle one): _____ (date)

Year: _____ ☐ Other: _____

Item		Quantity	Status	
Facsimile Machine		1	Power Ck.:	
Paper		Ample		
Plant Parameter PC Workstation		1	Power Ck.:	
White board markers		Ample		
Log Books	Chemistry Team Leader	1 each		
	Dosimetry Team Leader	1 each		
	Electrical Maintenance Team Leader	1 each		
	Engineering Director	1 each		
	Instrument Maintenance Team Leader	1 each		
	Mechanical Engineering Director	1 each		
	Mechanical Maintenance Team Leader	1 each		
	Onsite Monitoring Team Leader	1 each		
	Operational Support Center Director	1 each		
	Radiation Protection Director	1 each		
	Safety Services	1 each		

Documents
☐ Emergency Action Levels Technical Basis Document (EAL) (1 binder) Rev
☐ Emergency Operating Procedures (EOP) (1 set)
☐ Emergency Response Plan (ERP) (1 binder) Rev
☐ Emergency Response Preparedness Implementation Procedures (ERPIPs) (3 vols) (1 set)
☐ ERPIP-611 Partial Manual (1 binder)
☐ Final Safety Analysis Report (FSAR) (1 set)
☐ Fire Fighting Strategy Manual (1 set)
☐ Hard Copy Drawing File (1 set)
☐ INPO Emergency Resources Manual (1 binder)
☐ Operating Procedures (OP) (1 set)
☐ OSC Partial ERPIP Manuals (15 binders)
☐ Technical Specifications (1 set)
☐ Radiation Safety Procedures (RSP) (1 set)

Attachment 9, OPERATIONAL SUPPORT CENTER - ADMINISTRATIVE (Continued)

Status Boards (Ensure status boards are clean and free of writing)	Quantity	Status
Calvert Cliffs Nuclear Power Plant Layout	1	

Office Supplies (Ensure Supplies Are Provided In Adequate Quantities)

Item	Quantity	Status	Item	Quantity	Status
12" Rulers	2		Graph Paper	Ample	
8 1/2 X 11 writing paper	Ample		Mark's Standard Handbook for Mechanical Engineers	1	
Architect's Scale	1		NAVCO Piping Data log	1	
Engineer's Scale	1		Paper Clips, Large	Ample	
Binder Clips, Large	Ample		Paper Clips, Small	Ample	
Binder Clips, Small	Ample		Pencils	Ample	
Butterfly Clamps	Ample		Pens	Ample	
Calculators:	4	Op. Ck.:	Rubber Bands	Ample	
Scissors	Ample		Staplers	Ample	
Clear Tape & Dispenser	Ample		Staples	Ample	
Clipboards	Ample		Steam Tables Manual	1	
Crane Flow of Fluids	1		Fax Machine Speed Dial Card (at fax machine)		
ASME Steam Tablets	1				
Hard Hats	3		Safety Glasses	3	

REMARKS:

Completed: _____ Date: _____

Reviewed : _____ Date: _____

*Approved: _____ Date: _____

*All inventories, scheduled or otherwise, must have approval by signature.

Attachment 10, OPERATIONAL SUPPORT CENTER - TECHNICAL

☐ Quarter: 1 2 3 4 (Circle One)		☐ Post Drill/Exercise/Event (Circle one): _____ (date)			
Year: _____		☐ Other: _____			
Batteries					
Item	**Quantity**	**Status**	**Item**	**Quantity**	**Status**
D Cell	12	Expires:			

Dosimetry & Accessories			
Item	**Quantity**	**Status**	**Calibration**
DLR Control Badges	5		Within Cal? _____(date)
DLR Special	15 Sets (includes 3 Hi-Range SRDS)		Within Cal? _____(date)
DLR Specials	15 Sets (no Hi-Range DRDs)		Within Cal? _____(date)
DLR Whole Body Badges	50		Within Cal? _____(date)
DLR Surveillance Badges	20		Within Cal? _____(date)
DRD, 0-200 mR	30		Within Cal? _____(date)
DRD, 0-5 R	30		Within Cal? _____(date)
DRD, 0-50 R	30		Within Cal? _____(date)
DRD, 0-200 R	30		Within Cal? _____(date)

Dosimeter Chargers (2) Spare Bat: (1 each)	Exp Date:	Op. Check _____
Access Entry Cards (ample)		
Calvert Cliffs Dosimetry Records (ample)		

Keys		
Item	**Quantity**	**Status**
Chemistry Safety Storage Area	1	
Containment Air Sx	14	
Emergency Vehicle Keys (1 set for each vehicle), KI (in the key chain fob)	1 each	KI expires: _____ Vehicle #: _____ Vehicle #: _____
Farm Demo Building	2	
Hot Leg Sx	2	
S.I.A.S. Override	1	
Back Up Met Tower	2	

Attachment 10, OPERATIONAL SUPPORT CENTER - TECHNICAL (Continued)

Radiological Monitoring Instrumentation Kits			
Item	Calibration	Battery Check	Source Check
KIT			
**E-600	Within Cal? _____(date)		N/A
**SHP-270	Within Cal? _____ (date)	N/A	
**SHP-310	Within Cal? _____ (date)	N/A	
**SHP-360	Within Cal? _____ (date)	N/A	
KIT			
**E-600	Within Cal? _____ (date)		N/A
**SHP-270	Within Cal? _____ (date)	N/A	
**SHP-310	Within Cal? _____ (date)	N/A	
**SHP-360	Within Cal? _____ (date)	N/A	
SPA-9	Within Cal? _____ (date)	N/A	
KIT			
**E-600	Within Cal? _____ (date)		N/A
**SHP-270	Within Cal? _____ (date)	N/A	
**SHP-310	Within Cal? _____ (date)	N/A	
**SHP-360	Within Cal? _____ (date)	N/A	
KIT			
**E-600	Within Cal? _____ (date)		N/A
**SHP-270	Within Cal? _____ (date)	N/A	
**SHP-310	Within Cal? _____ (date)	N/A	
**SHP-360	Within Cal? _____ (date)	N/A	

Attachment 10, OPERATIONAL SUPPORT CENTER - TECHNICAL (Continued)

Radiological Monitoring Instrumentation Kits (Continued)

Item	Calibration	Battery Check	Source Check
KIT (OSC/NSF MONITOR'S)			
**E-600	Within Cal? _____ (date)		N/A
**SHP-270	Within Cal? _____ (date)	N/A	
**SHP-360	Within Cal? _____ (date)	N/A	

Radiological Monitoring Instrumentation

Item	Calibration	Battery Check	Source Check
**RM-14 (includes probe & cable)	Within Cal? _____ (date)		
**SMARTPOLE	Within Cal? _____ (date)	N/A	
**SMARTPOLE	Within Cal? _____ (date)	N/A	
RO-7	Within Cal? _____ (date)		N/A
Air Sampler 1 (AC)	Within Cal? _____ (date)	N/A	N/A
Air Sampler 2 (AC)	Within Cal? _____ (date)	N/A	N/A
Cs-137 Source	SN:	N/A	N/A
Ba-133 Source	SN:	N/A	N/A

Medical Treatment Room 69' Auxiliary Building

Item	Quantity	Status	Calibration
DLR Controls	5		Within Cal?____ _____ (date)
DLR	15		Within Cal?____ _____ (date)
DRD's (0-5R)	5		Within Cal? ___ _____ (date)
DRD's (0-200R)	5		Within Cal? ___ _____ (date)

Medical (OTF)

Item	Quantity	Status
Potassium Iodide, 130 mg case 1400 Doses (350 Pre-distributed to security)	1 case	Expires: _____

OSC Communicator Desk

Item	Quantity	Status
Cell Phone	1	
Cell phone charger	1	
Blackberry computer charger	1	

Attachment 10, OPERATIONAL SUPPORT CENTER - TECHNICAL (Continued)

Radiological Monitoring Equipment & Sampling Materials (Continued)					
Item	Quantity	Status	Item	Quantity	Status
Anti-C Complete	25 sets		Spare Rubber Gloves	1 bag	
Plastic Anti-C Sets	25 sets		Paper Suits	1 box	
Cotton Gloves	50 sets		Disc Septum	3 vials	
Pressure Lock Gas Syringe 1 ml capacity	4		Pressure Lock Gas Syringe 5 ml capacity	2	
Pressure Lock Gas Syringe Needle Side Port	2 boxes		Pressure Lock Gas Syringe 2 ml capacity	2	
Air Sample Envelopes	Ample		Glass Fiber Filters	2 boxes	
Plastic Bags, Large	10		Spare Plastic Booties	1 bag	
Plastic Bags, Small	25		Millipore Filters	2 boxes	
Shaving Cream[2]	1 can	Op. Ck.:	Smears	1 box	
			Razors	1 pkg	
Flashlight	10		Op. Ck.:		
Povidine surgical solution	1 bottle		Expires:_____		
Charcoal Cartridges	20		Expires:	Sealed:	
Silver Zeolite Cartridges	10		Expires:	Sealed:	

RADIOS	Status	Remarks
Radio ID# _____		
Radio ID# _____		
Radio ID# _____		
Radio Batteries (6)		
DESKSET SEL 3		
DESKSET SEL 15		
DESKSET SEL 16		

Attachment 10, OPERATIONAL SUPPORT CENTER - TECHNICAL (Continued)

Respiratory Equipment & Accessories

Item	Quantity	Status	Mat Pro Initials
SCBAs Tagged for Emergency Use only***	5		N/A
Negative Pressure Respirators w/ Particulate Filters	10		N/A
Negative Pressure Respirators w/Iodine Filters	10	Expires	
Spare Respirator Iodine Filters	10	Expires	
Spare Respirator Particulate Filters	10		

WRNG Sample Kit

Item	Quantity	Status	Item	Quantity	Status
1/4" Combination Wrench	1		Marking Pen	1	
1/2" Nut Driver	1		Plastic Bag	1	
3/4" Combination Wrench	1		Pre-filter Papers	2	
8" Crescent Wrench	1		Small Jewelers Screw Driver	1	

REMARKS:

Completed: _____ Date: _____

Reviewed : _____ Date: _____

*Approved: _____ Date: _____

*All inventories, scheduled or otherwise, must have approval by signature.
**See ERPIP-903 for source check instructions.
***Stored at NSF Entry from Protected Area
1 – Rubber gloves shall be checked every year first quarter and replaced as needed
2 – Shaving Cream shall be replaced every year in the first quarter

Attachment 11, OPERATIONAL SUPPORT CENTER ALTERNATE

☐ Quarter: 1 2 3 4 (Circle One) ☐ Post Drill/Exercise/Event (Circle one): _____ (date)

Year: _____ ☐ Other: _____

Administrative Supplies

Item	Quantity	Status	Item	Quantity	Status
12" Ruler	1		Pencils	Ample	
Paper Pad	Ample		Pens	Ample	
9 x 5½ notepads	2		Stapler	1	
Clipboard	1		Staples	Ample	
Paper Clips	Ample		Tape & Dispenser	1	
Paper Clamps	Ample				

Batteries

Item	Quantity	Status	Item	Quantity	Status
AA Cell	6	Expires	D Cell	4	Expires:

Documents

☐ Operation Support Center (OSC) Partial ERPIP Manual (1 binder)

☐ Full Set ERPIPs (3 Vols) (ERPIP)(1 set)

☐ EAL Technical Basis Document (EAL) (1 binder) Rev

Radiological Monitoring Equipment & Accessories

Item	Quantity	Status	Item	Quantity	Status
Anti-CS Complete Sets	4		Ground Fault Circuit Interrupter	1	
Clean Tags	1 box		Millipore Filters	2 boxes	
Masking Tape	1 roll		Smears	1 box	
Rubber Gloves[1]	50 pair		Particulate Filters	1 box	
Glove Liners	50 pair		Paper Suits	1 box	
Silver Zeolite Cartridges	20		Expires:	Sealed:	
Charcoal Cartridge	20		Expires:	Sealed:	

Attachment 11, OPERATIONAL SUPPORT CENTER ALTERNATE (Continued)

Respiratory Equipment & Accessories

Item	Quantity	Status	Mat Pro Initials
Negative Pressure Respirators w/ Iodine Filters	5	Expires:	
Negative Pressure Respirators w/ Particulate Filters	5		
Spare Iodine Respirator Filters	5	Expires:	
Spare Particulate Respirator Filters	5		
Razors	1 pkg.		N/A
Shaving Cream[2]	1 can	Op. Ck.:	N/A

Signs

Item	Quantity	Status	Item	Quantity	Status
Airborne Radiation Inserts	12		Radioactive Material Inserts	12	
Contaminated Area Inserts	12		Radiation Area Inserts	12	
Caution Radiation Tri-foil Signs	9		Respiratory Protection Required Inserts	12	
Caution Radiation Tri-foil Signs with Insert Slots	21		Unauthorized Persons Inserts	12	
High Radiation Area Inserts	12				

REMARKS:

Completed: _____ Date: _____

Reviewed : _____ Date: _____

*Approved: _____ Date: _____

Tamper seal replaced (if required) (Circle one)? Yes No

*All inventories, scheduled or otherwise, must have approval by signature.
1 – Rubber gloves shall be checked every year first quarter and replaced as needed
2 – Shaving Cream shall be replaced every year in the first quarter

Attachment 12, POST ACCIDENT SAMPLING AIR SAMPLE KIT

(69' Chemistry Hot Lab)

☐ Quarter: 1 2 3 4 (Circle One) ☐ Post Drill/Exercise/Event (Circle one): _____ date)

Year: _____ ☐ Other: _____

Sampling Materials

Item	Quantity	Status	Item	Quantity	Status
25' Sample Hose	1		Millipore Filters	1 box	
Air Sampler Head	2		Plastic Bags, small	10	
Particulate Filters	1 box		Air Sample Envelope	10	
Charcoal Cartridges	4		Expires:	Sealed:	

REMARKS:

Completed: _____ Date: _____

Reviewed : _____ Date: _____

*Approved: _____ Date: _____

Tamper seal replaced (if required) (Circle one)? Yes No

*All inventories, scheduled or otherwise, must have approval by signature.

Attachment 13, REENTRY LOCKER 45' LEVEL TURBINE BUILDING

(Located At Door 810, South End)

☐ Quarter: 1 2 3 4 (Circle One) ☐ Post Drill/Exercise/Event (Circle one): _____ (date)

Year: _____ ☐ Other: _____

(a) Batteries

Item	Quantity	Status	Item	Quantity	Status
D Cell	4	Expires:	C Cell	2	Expires:

Dosimetry Kit

Item	Quantity	Status	Calibration
DLR, Control	5		Within Cal? _____(date)
DLR , Special	10		Within Cal? _____(date)
DRD, 0-5 R	10		Within Cal? _____(date)
DRD, 0-50 R	10		Within Cal? _____(date)
DRD, 0-200 R	10		Within Cal? _____(date)

Dosimeter Charger	Op. Ck.:	Spare Battery (1)	Exp date:_____
Emergency Dosimeter Log (Ample)			

Protective Clothing & Accessories

Item	Required	Status	Item	Quantity	Status
Anti-Cs Complete Sets	10		Paper Suits	10	
Masking Tape	1 roll		Plastic Anti-Cs Sets	10	
Ground Fault Circuit Interrupter	1		Smears	1 box	
Lead Blanket	2				

Item	Quantity	Status
Calculator:	1	Op. Ck.:

Respiratory Equipment

Item	Quantity	Status	Mat Pro Initials
Negative Pressure Respirators w/ Iodine Filters	5	Expires:	
Negative Pressure Respirators w/Particulate Filters	5		
Spare Iodine Respirator Filters	5	Expires:	
Spare Particulate Respirator Filters	5		
Razors	1 pkg.		N/A
Shaving Cream[1]	1 can	Op. Ck:	N/A

REMARKS:

Completed: _____ Date: _____

Reviewed: _____ Date: _____

*Approved: _____ Date: _____

Tamper seal replaced (if required) (Circle one)? Yes No

*All inventories, scheduled or otherwise, must have approval by signature.

1 – Shaving Cream shall be replaced every year in the first quarter

Attachment 14, CAFETERIA ASSEMBLY AREA

(South Service Building)

Note: Equipment maintained in two drawer file cabinet.

☐ Quarter: 1 2 3 4 (Circle One) ☐ Post Drill/Exercise/Event (Circle one): _____ (date)

Year: _____ ☐ Other: _____

Administrative Supplies

Item	Quantity	Status	Item	Quantity	Status
Calculator:	1	Op. Ck.:	Stapler	1	
Paper (various)	Ample		Staples	Ample	
Pencils	Ample				
Pens	Ample		Attached to clip board		
Team Rosters	Survey Team		Attached to clip board		
	Chemistry Team		Attached to clip board		
	Electrical Maintenance Team		Attached to clip board		
	I & C Maintenance Team		Attached to clip board		
	Mechanical Maintenance Team		Attached to clip board		
	Operations Team		Attached to clip board		

Document

SSB Cafeteria Partial ERPIP Manual (2 binders)

Miscellaneous

Item	Quantity	Status	Item	Quantity	Status
Bullhorn:	1	Op. Ck.	D Cell Batteries	4	Expires:
C Cell Batteries	6	Expires:	Flashlights	2	Op.Ck.

REMARKS:

Completed: _____ Date: _____

Reviewed : _____ Date: _____

*Approved: _____ Date: _____

*All inventories, scheduled or otherwise, must have approval by signature.

Attachment 15, SIMULATOR - CONTROL ROOM

☐ Quarter: 1 2 3 4 (Circle One) ☐ Post Drill/Exercise/Event (Circle one): _____ (date)
Year: _____ ☐ Other: _____
☐ Control Room Partial ERPIP Manual (one book located in Computer Cabinet) (2 binders)
☐ Full Set ERPIP (3 vols) (1 set)
☐ EAL Technical Basis Document (EAL) (1 binder) Rev
☐ RADDOSE Manual (Located in Computer Cabinet) (1 binder)

Item	Quantity	Status	
10 Mile EPZ Map (Framed and Mounted)	1 copy		
10 Mile Folded EPZ Map	10		
50 Mile EPZ Map (Framed and Mounted)	1 copy		Right side wall, behind U1 Panel
Computer Cabinet RADDOSE Computer & Printer	1		
Meteorological Display Terminal	1		
Meteorological Data Printer	1		
Phone (Meridian) (On table next to file cabinet)	1		
Plant Parameters Workstation	1		Power Ck:

REMARKS:

Completed: _____ Date: _____

Reviewed : _____ Date: _____

*Approved: _____ Date: _____

*All inventories, scheduled or otherwise, must have approval by signature.

Attachment 16, EMERGENCY OPERATIONS FACILITY

(Located at Calvert Industrial Park on Rt. 231 west of Prince Frederick)

☐ Quarter: 1 2 3 4 (Circle One)	☐ Post Drill/Exercise/Event (Circle one): _____ (date)
Year: _____	☐ Other: _____

(a) CLERICAL SUPPORT OFFICE

Item	Quantity	Status	
3-Hole Punch	1		
Copier/Instructions	1		Power Ck:
Flashlights	8		Op. Ck.:
Copier Paper	Ample		
Laser Jet Toner Cartridges	1		

LOG BOOKS (located in each desk)

Item		Quantity	Status	
Log Book	Administrative Support Manager	1		
	Telecommunications Support Manager	1		
	Emergency Operations Facility Director	1		
	Emergency Director/Recovery Manager	1		

DOSE ASSESSMENT ROOM

Item		Quantity	Status	
3-Hole Punch		1		N/A
Calculators		4		Op. Ck.:
Data Recording & Display Terminal (DRDT)		1		Power Ck.:
Dose Assessment Computers with ability to print		2		Print test: Sat Unsat
DRDT Printer (Dedicated to the DRDT)		1		N/A
Paper		Ample		Power Ck.:
Laptop Computer (RADDOSE loaded)		1		Power Ck: Batt. Ck:
Log Books	Radiological Assessment Director	1		N/A
EOF Partial ERPIP Manual		1 binder		
Offsite Survey Point Location Manual		3		
Pencil Sharpener		1		

Dose Assessment Room Hand Held Radios

Item	Quantity	Status
Radio ID# _____	1	
Radio ID# _____	1	
Radio Desk Set 1N	1	Power Ck.:
Radio Desk Set SEL 6	1	Power Ck.:
Radio batteries	4	

Attachment 16, EMERGENCY OPERATIONS FACILITY (Continued)

DOSE ASSESSMENT ROOM (continued)

Documents	
☐ EAL Technical Basis Document (EAL) (1 binders)	Rev
☐ ERPIP, Full Set (5 Vols.) (2set)	
☐ Radiation Safety Procedures (RSP) (1 set)	
☐ Emergency Response Plan (ERP) (1 binder)	Rev
☐ RADDOSE Manual (2 binders)	
Forms (Maintain forms in ample quantity)	
☐ Emergency Actions Form	

CONFERENCE ROOM

Item	Quantity	Status	
Radio	1		Power Ck.:
Television	1		Power Ck.:

STATUS ROOM

Administrative Supplies (Ample quantities, on the tables and /or in desks)

Item	Item		
Paper	Pencils	Phone Books	Staplers
Paper Clips	Pens	Scissors	Tape & Dispensers
Batteries	Fax Machine Speed Dial Card (at fax machine)		

Item	Quantity	Status	Item	Quantity	Status
AA Cell	4	Expires:	C Cell	4	Expires:
D Cell	8	Expires:			

Item	Quantity	Status	
130 mg Potassium Iodide, (1400 doses)	1 case		Expires:
Calculators	3		Op. Ck.
Facsimile Machine	2		Power Ck.:
TSC Computer Workstation (computer, printer, CRT)	1		Power Ck.:
TSC Computer Operator's Guide	1		N/A
Satellite Phone	1		Power Ck:

Documents	
☐ EAL Technical Basis Document (EAL) (2 copies)	Rev
☐ Emergency Operations Facility (EOF) Partial ERPIP Manual (1 binder)	
☐ Emergency Response Plan (ERP) (1 binder)	Rev
☐ ERPIPs, Full Set (3 vols) (1 set)	
☐ Final Safety Analysis Report (6 vols) (UFSAR) (1 set)	
☐ Hard Copy Plant Prints (cabinet)	
☐ Industrial Safety Manual (ISM) (1 binder)	Rev
☐ Spill Prevention Plan Manual (1 binder)	Plan date:
☐ Technical Specifications /Bases (2 vols) (1 set)	
☐ INPO Emergency Resources Manual	
☐ Joint Information Center Standards (1 binder)	

Attachment 16, EMERGENCY OPERATIONS FACILITY (Continued)

LUNCH ROOM

ITEM	Quantity	Status	
Television	1		Power Ck.:

SECURITY OFFICE

Item	Quantity	Status	
Radio Desk set 1N	1		Power Ck.:
Radio Desk set SEL 7	1		Power Ck.:

MDE STATE ROOM (upstairs)

☐ RADDOSE Manual (1 binder)	☐ ERPIPs, Full Set (3 vols) (1 set)

NRC ROOM

☐ ERPIPs, Full Set (3 vols) (1 set)

EOF Communicator Desk

Item	Quantity	Status	
Cell phone	1		
Cell phone charger	1		
Blackberry computer charger	2		
Blackberry charger	2		

REMARKS:

Completed: _____ Date: _____

Reviewed : _____ Date: _____

*Approved: _____ Date: _____

*All inventories, scheduled or otherwise, must have approval by signature.

Attachment 17, JOINT INFORMATION CENTER (JIC)

☐ Quarter: 1 2 3 4 (Circle One)	☐ Post Drill/Exercise/Event (Circle one): _____ (date)
Year: _____	☐ Other: _____

Constellation Energy Office

Item	Quantity	Status	Comments
8 1/2 X 11 Writing Paper	Ample		
Paper clips, pencils, pens, rubber bands, ruler, scissors, stapler, tape, staples.	Ample		
Managed Print – Copier/Fax	1		
Paper (copier and fax)	Ample		
Pencil Sharpener	1		
PCs	8		Op Check:
Simulator Control Room Phone Directory	Ample		
Box of Various Stamps & Pads	----		
Phone Books (Calvert, St. Mary's/Charles, Anne Arundel Counties)	5		Check for current year:
Quick Reference Direct Dial Numbers (placards)	Ample		
Telephone Message Pads	Ample		
Name Tags	------		
Box of various dry erase markers	1		ensure pens are not dried out
Radiological Emergency Plan	1		
Offsite Conference Speaker Phone	1		
Joint Information Center Director Log Book	1		
Ten Mile EPZ maps	-----		
Press Kits	Ample		
EPA Booklets	Ample		
RV Head Booklets	Ample		
Fax Machine Speed Dial Card (at fax machine)	-----		

Documents (Ensure binders are in good condition))	
☐ Emergency Action Levels Technical Basis Document (EAL) (1 binder)	Rev
☐ Emergency Response Plan (ERP) (1 binder)	Rev
☐ Emergency Response Plan Implementation Procedures (ERPIP) (3 vols.) (1 set)	
☐ Final Safety Analysis Report (6 vols) (FSAR) (1 set)	
☐ Joint Information Center Partial ERPIP Manual (2 binders)	
☐ Joint Information Center Standards (5 binders)	
☐ Technical Specifications/Bases (2 vols) (1 set)	

Attachment 17, JOINT INFORMATION CENTER (JIC) (Continued)

Government Officials Office

Item	Quantity	Status	Comments
8 1/2 X 11 Writing Paper	Ample		
Paper clips, pencils, pens, rubber bands, ruler, scissors, stapler, tape, staples.	Ample		
Managed Print (Copier/Fax)	1		
Paper (copier/fax)	Ample		
Pencil Sharpener	1		
PCs	3		Op Ck:
Telephone Message Pads	Ample		
Fifty Mile EPZ maps	----		
Ten Mile EPZ maps	----		

Technical Advisor Desk

Item	Quantity	Status	Comments
Cell phone	1		
Cell phone charger	1		
Blackberry charger	1		
Blackberry computer charger	2		

Auditorium

Item	Quantity	Status	Comments
Easels	5		
Plant Aerial View Photo	1		Wall Mountable
Simple Plant Schematic			
Maps (ten & fifty mile maps)	1		Wall Mountable
Various Desk Top Signs	----		
Laser Pointer	1		Op Ck.:

REMARKS:

Completed: _____ Date: _____

Reviewed: _____ Date: _____

*Approved: _____ Date: _____

*All inventories, scheduled or otherwise, need to have approval by signature.

Attachment 18, TECHNICAL SUPPORT CENTER

(55' Level Auxiliary Building)

☐ Quarter: 1 2 3 4 (Circle One) ☐ Post Drill/Exercise/Event (Circle one): _____ (date)

Year: _____ ☐ Other: _____

Batteries

Item	Quantity	Status	Item	Quantity	Status
AA Cell	4	Expires:	C Cell	4	Expires:

Documents

- ☐ ASME Steam Tables Manual, Fifth Edition (2 copies)
- ☐ Calvert Cliffs Nuclear Power Plant, Operations Manual, Abnormal Operating Procedures (AOPs) (AOPs 001-013) (1 Set) 859-10
- ☐ Calvert Cliffs Nuclear Power Plant, Operations Manual, Emergency Operating Procedures (EOPs) (EOPs 001-005) (1 Set) 859-10
- ☐ Calvert Cliffs Operations Manual: Operating Instructions (CCOMs) (OIs 001-022) (1 set)
- ☐ Calvert Cliffs Operations Manual: Operating Procedures (OPs) (OP 001-002) (1 set) 859-10
- ☐ Calvert Spill Prevention Controls & Counter Measures Plan and Storm Water Pollution Prevention Plan Counter Measures Plan (1 binder) 859-8
- ☐ Calvert Cliffs Nuclear Power Plant Technical Requirements Manual (TRM) (1 binder)
- ☐ Emergency Action Levels Technical Basis Document (EAL) (2 binder) 859-9
- ☐ Emergency Response Plan (ERP) (1 binder)
- ☐ Emergency Response Plan Implementation Procedure (ERPIPs) (3 vols.) (1 set)
- ☐ ERPIP-600 series ERPIPs (ERPIP-600 - 613) (2 binders each (except 1 binder ERPIP-600)
- ☐ Final Safety Analysis Report (6 Vols) (UFSAR) (1 set)
- ☐ Fire Fighting Strategies Manual & Drawings (1 set) 859-8
- ☐ Industrial Safety Manual (ISM) (1 binder)
- ☐ Interactive Cable Analysis (ICAM) (ICAM 001 & 002) (1 set)
- ☐ INPO Emergency Resources Manual (1 binder)
- ☐ Mark Standard Handbook for Mechanical Engineers (1 book)
- ☐ Nuclear Engineering Operating Procedures Manual (NEOP) (1 binder)
- ☐ Offsite Dose Calculation Manual (ODCM) (1 binder)
- ☐ Plant Prints/Drawings (1 set)
- ☐ Safety Parameters Display System (SPDS) Alarm Manual (1 binder)
- ☐ Technical Specifications/Bases (1 set)
- ☐ Technical Support Center Partial ERPIP Manual (ERPIP) (7 copies)
- ☐ TSC Computer Operators Guide (Located with the TSC Computers) (2 copies)

Attachment 18, TECHNICAL SUPPORT CENTER (Continued)

Forms

- ☐ Emergency Message Forms (Ample)
- ☐ ERPIP-3.0, Attachment 3, Initial Notification Form
- ☐ ERPIP-3.0, Attachment 6, Follow-Up Sheet Communications Form
- ☐ ERPIP-3.0, Attachment 7, Detailed Follow-Up Communications Form

IT Equipment

Item	Quantity	Status	Remarks
FAX Machine	Power Ck:	Verify Time:	
TSC Computer # 1	Op. Ck:		
TSC Computer # 2	Op. Ck:		
PPC Computer	Op. Ck:		
Lap Top Computer (2)	Available:		Located in Supply Filing Cabinet

Supplies (Located In Filing Cabinet)

Item	Quantity	Status	Item	Quantity	Status
Calculators	4		Masking Tape	1 roll	
DC Power Supply	3		Notepad Paper	Ample	
Dry Erase Markers	Ample		Paper	Ample	
Erasers	Ample		Paper Clips	Ample	
Extension Cord	1		Pens	Ample	
Evacuation Time Estimate	1		Pencils	Ample	
Flashlights	4	Op. Ck:	Phone Book, Annapolis/Calvert Counties	1	
Flow of Fluids Manual	1		Plastic Bags	Ample	
Graph Paper	Ample		Power Strip	1	
Ground Fault Circuit Interrupter	1		Rulers	5	
Highlight Markers	Ample		Fax Machine Speed Dial Card (at fax machine)	-----	
Hard Hats	3		Safety Glasses	3	

TSC Communicator Desk

Item	Quantity	Status	Remarks
Cell phone	1		
Cell phone charger	1		

Attachment 18, TECHNICAL SUPPORT CENTER (Continued)

Supplies

Item		Quantity	Status	Item	Quantity	Status
Screwdrivers		3		Tape	2 rolls	
Smears		1 box		Tape Dispenser	1	
Staplers		3		Ten Mile EPZ Maps (folded)	10	
Staples		Ample		Test Leads	3	
Log Book	Plant General Manager					
	Technical Support Center Director					
	Chemistry					

Status Boards

Status Boards (Ensure status boards are clean and free of writing)	Quantity	Status
Core Damage Assessment Characteristics Chart (Chemistry Director's Desk & Reactor Engineer's Desk)	2	
Environmental Status Board	1	
Plant Equipment Status Board	1	
Plant Parameters Status Board	1	

REMARKS:

Completed: _____ Date: _____

Reviewed : _____ Date: _____

*Approved: _____ Date: _____

Tamper seal replaced (if required) (Circle one)? Yes No

*All inventories, scheduled or otherwise, must have approval by signature.

Attachment 19, TECHNICAL SUPPORT CENTER ANNEX

(58' Level, Auxiliary Building Outside of Central Alarm Station)

☐ Quarter: 1 2 3 4 (Circle One) ☐ Post Drill/Exercise/Event (Circle one): _____ (date)

Year: _____ ☐ Other: _____

Administrative/Office Supplies

Item	Quantity	Status	Item	Quantity	Status
12" Ruler	1		Pens	Ample	
Clipboard	1		Notepad Paper	Ample	
Computer cabinet key	1		Stapler	1	
Desk Key	1		Staples	Ample	
Paper Clamps	Ample		Tape & Dispenser	1 roll	
Paper Clips	Ample				
Pencils	Ample				

Miscellaneous Equipment

Item	Quantity	Status
10 Mile EPZ Map	1	Map Condition Sat / Unsat
50 Mile EPZ Map	1	Map Condition Sat / Unsat
Calculator	1	Op. Ck.:
Computer cabinet containing the following:		
RADDOSE Computer	1	
Met. Display Terminal	1	
Printers	2	
D Cell Batteries	4	Expires:
Desk Set 1N radio	1	
Flashlight	1	Op. Ck.:
Offsite Survey Point Location Manual	1	
State of Maryland Radiological Emergency Plan Manual	1	Rev

Documents

☐ Emergency Response Plan Implementation Procedures (ERPIPs) (3 Vols) (1 set)

REMARKS:

Completed: _____ Date: _____

Reviewed : _____ Date: _____

*Approved: _____ Date: _____

*All inventories, scheduled or otherwise must have approval by signature.

Attachment 20, PORTABLE RADIATION SURVEY INSTRUMENTS AIR SAMPLERS AND DOSIMETERS ASSIGNED TO THE EMERGENCY RESPONSE PLAN [B1220]

LOCATION	TYPE	QUANTITY
Calvert Memorial Hospital	RM-14 w/HP-210	1
	E-600	1
	SHP-270	1
	SHP-360	1
Control Room	E-600	1
	SHP-270	1
	SHP-310	1
	SHP-360	1
	SPA-9	1
	Air Sampler (AC power)	1
	RM-14	1
Farm Demonstration Building	E-600	1
	SHP-270	1
	SHP-310	1
	SHP-360	1
	SPA-9	1
	Air Sampler (DC power)	1
	RM-14	1
Mobile Monitoring Kit	E-600	4
	SHP-270	4
	SHP-310	4
	SHP-360	4
	SPA-9	4
	Air Sampler (DC power)	4
Operational Support Center	E-600	4
	SHP-270	4
	SHP-310	3
	SHP-360	4
	SPA-9	1
	Air Sampler (AC power)	3
	RM-14	1

Attachment 20, PORTABLE RADIATION SURVEY INSTRUMENTS AIR SAMPLERS AND DOSIMETERS ASSIGNED TO THE EMERGENCY RESPONSE PLAN [B1220] (Continued)

LOCATION	TYPE	QUANTITY
Dorchester Hospital	RM-14	1
	E-520	1
	PIC-6	1
St. Mary's Hospital	RM-14	1
	E-520	1
	PIC-6	1
**** Cushman Kit-D.C.**	Air Sampler (DC Power)	2
Calvert County Emergency Operation Center	PIC 6	4
	E-520	4
	*Inspector EXP	8
	*Ludlum 14C	2
	*Portal Walkthrough Monitors	2
	CDV 715/700 or equivalent	25 (CCNPP funds calibration
St. Mary's County Emergency Operation Center	PIC 6	2
	E-520	2
	Walk Through Monitors	2
	CDV 715/700 or equivalent	25 (CCNPP funds calibration
Dorchester County Emergency Operation Center	PIC 6	6
	E-520	2
	Walk Through Monitors	2 (1*) One device owned by County
	CDV 715/700 or equivalent	6 (CCNPP funds calibration

* Owned by County/State

**Cushman Kits 1 & 2 are Identical

Attachment 20, PORTABLE RADIATION SURVEY INSTRUMENTS AIR SAMPLERS AND (Continued)

LOCATION	TYPE	QUANTITY
MDE	PIC 6	**6**
	E-520	**6**
	Micro R	**4**
	RM-14	**4**
	MS2/SPA3	**4**
	RADECO A/S	**4**

Portable Radiological Monitoring Equipment for ERP

Instrument	Total for ERP	In ERPIP B.1 Inv	Spares	Instrument	Total for ERP	In ERPIP B.1 Inv	Spares
E-600	21	15	6	A.C. Air Sx	7	4	3
SHP-270	19	15	4	D.C. Air Sx	19	11	8
RM-14	16	5	11	DLR	115	115	0
SPA-9	9	7	2	SMARTPOLE	3	2	1

Attachment 20, PORTABLE RADIATION SURVEY INSTRUMENTS AIR SAMPLERS AND DOSIMETERS ASSIGNED TO THE EMERGENCY RESPONSE PLAN [B1220] (Continued)

TOTAL AMOUNT OF DOSIMETRY FOR ERPIP

	DRD					DLR
LOCATION	(0-200MR)	(0-1R)	(0-5R)	(0-50R)	(0-200R)	
69' First Aid Room	0	0	5	0	5	5 Specials 5 Control
Calvert Memorial Hospital	10	0	10	0	10	16-Wrist 20-WB 5 Control
Control Room	10	10	0	0	0	10 WB 5 Control
45' Reentry-Locker	0	0	10	10	10	10 Special 5 Control
Fire Brigade (45' turbine building)						12 WB 5 Control
Mobile Kit(s) #1-4	12	0	12	12	12	12 WB 20 Control
Farm Demo	25	0	25	25	25	25 WB 5 Control
Nuclear Security Facility	100	0	0	0	0	100 WB 5 Control
Operational Support Center	30	0	30	30	30	50-WB 20-Surveillance 30-Specials 5-Control
Ambulance Kit	0	0	0	5	0	10-WB 5-Control
Dorchester Hospital	10	0	10	0	10	16-Wrist 20-WB 5-Control

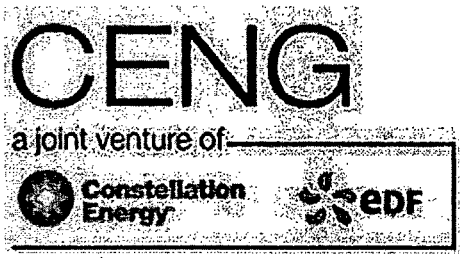
* Mobile Kits 1-4 are Identical

Attachment 21, B.5.b PUMP AND AUXILIARY EQUIPMENT [B2345]

NOTE

Owner organization performs routine inventory and preventative maintenance on this equipment. Also, equipment is periodically relocated as required for maintenance and services.

LOCATION	TYPE	QUANTITY
***Waterfront Maintenance Shed (normal) or Heavy Duty/Transportation Shop (alternate) ** Outside Sewage Treatment Plant**	*Diesel Pump	1
	**Hose Trailer	1
	5" Fire Hose	2300 feet
	SFP NST Hard Pipe	2
	SFP NST Hard Pipe and Monitor Nozzle Tie Downs	4
	SFP 5" – 4" Hose Adapter	1
	SFP Monitor Nozzle	1
	SFP NST 3" Fire Hose	700 feet
	5" Hose Connector Short Coupling	1
	Fuel Spill Containment Device	1
	Check Valve Bonnet Replacement 5" Stortz Adapter	1
	5" Stortz to 2.5" NST Wye fitting	1
	2.5" NST to 1.5" adapter	2
	2.5" NST cap	1
	*Emergency Fuel Tank	1
	2.5 " NST to 2.5 NST Double Female Adapter	1
	Hydrant Wrench	1
	Suction Strainer	1



Calvert Cliffs Nuclear Power Plant
TECHNICAL PROCEDURE

ERPIP-105

CONTROL ROOM COMMUNICATOR (CR)

Revision 01801

Safety Related

REFERENCE USE

Applicable To:

- **Calvert Cliffs Nuclear Power Plant**

Approval Authority:
Plant General Manager

SUMMARY OF ALTERATIONS

018	01	Cover Page – removed 50.59 review. Attachment 1 - Corrected numbering scheme
018	00	1.0 – added "EAL" changed "notification" to "declaration" changed "called" to "declared" 2.1.1.3 – added "Per ERPIP-3.0, Immediate Action" and clarified the step 4.2.1 – deleted "as that time entered in" and added the word "on" and clarified step 6.1.1 – added "(SM)" 6.1.1 – changed "full time" to "ERO" 6.1.1.1 – deleted "Shift Manager/Control Room Supervisor" added – "SM/CRS" 6.2.1.2 – changed "send" to "transmit" and added "to offsite agencies" 6.2.1.2 bullets – added "ERPIP-3.0" after each form. 6.2.3 – added new step and Note to instruct Control Room Communicators to Perform and Maintain Control Room Accountability of all ERO members in the Control Room using the "Control Room Roster". (PCR-09-06137/CR-2009-007515) Attachment 1 – Note – Changed title to ERPIP-3.0 Attachment 1 step 1.A.1 – added "from ERPIP-3.0" Attachment 1 step 1.A.8.d – added new step – "Enter Declaration Time" Attachment 1.A.10 – added new ERONs instructions and added "Roster" after "ERO" Attachment 1 step 1.A.4.bullet 3 – changed "Hit Login" to "Click Log on" Attachment 1 step 1.D.3.bullet 3 – changed "Hit Login" to "Click Log on" Attachment 1 – step 1.D.9 – added "Roster" after "ERO" Attachment 1 step 1.D.12 – made this a sub step of 1.A.11 Attachment 1 step 1.E.1.b – added "or "2" to re-enter" Attachment 2 – Note – Corrected title to ERPIP-3.0

SUMMARY OF ALTERATIONS (Continued)

018	00	Attachment 2 step A.1 and A.1.a – added new steps Attachment 2 – Note – Corrected title to ERPIP-3.0 Attachment 2 step A.1 and A.1.a – added new steps Attachment 2 step A.2.a – added new step "**IF** any form is incomplete, **THEN DIRECT** the initiator to complete and return the form." Attachment 2 step A.3.a – added new step "**IF** any form is incomplete, **THEN DIRECT** the initiator to complete and return the form." Attachment 2 step A.3 of previous revision – this step was deleted Attachment 2 step A.4.c – added steps 1 and 2 – " 1. **IF** an agency did not answer, **THEN PLACE** a separate call using the outside line phone after providing the Initial or Follow-up Notification information to the agencies on line. 2. **IF** none of the agencies answer the primary or the backup conference call, then go to A.4.q of this attachment. Attachment 2 step A.4.f and g – moved these steps to Step A.4.c Attachment 2 steps A.4.n and A.4.n.1 have been moved to be a sub step of A.4.k. Attachment 2 step A.4.o – this step was deleted. Duplicate. Attachment 2 step A.4.l – added "on the dedicated offsite phone" Attachment 2 step A.4.t – changed step – t. **WHEN** the agency gets the form, **THEN GIVE** only the information as listed from the appropriate form: • Initial Notification Form, Items A.1 through A.7 • Follow-Up Communications Form, Items A.1 through A.11 • Detailed Follow-Up Communications Form, Items A.1 through A.23. Attachment 2 – step B.5 – added "the applicable Attachment 2 step E – deleted " **VERIFY** the EOF **AND** JIC are manned **AND**" Attachment 7 – step D.2– Deleted Step D.2 Attachment 7 – moved note "The Speed dial feature is for the standard phone lines only. It is not available using the Dedicated Offsite Agency Lines." to the beginning of Attachment 7

TABLE OF CONTENTS

1.0 PURPOSE

This procedure provides emergency response instructions to the Control Room Communicator (CR) for initial and follow-up communications with offsite agencies when an emergency action level (EAL) is declared at Calvert Cliffs Nuclear Power Plant and initiating Emergency Response Organization (ERO) personnel recall on declaration of event.

2.0 APPLICABILITY/SCOPE

This procedure applies to the Control Room Communicator (CR).

2.1. Responsibilities

2.1.1. The Control Room Communicator (CR) shall:

1. Report directly to the Control Room Supervisor, Shift Manager, or General Supervisor-Nuclear Plant Operations.
2. Perform ERO personnel recall. **[B1149]**
3. Perform initial and follow-up notifications to offsite agencies per ERPIP-3.0, Immediate Actions. **[B1149]**

2.1.2. The Security Shift Supervisor shall:

1. Perform actions in accordance with this procedure to activate Initial Notification of the ERO in the event that the Control Room is uninhabitable due to an adversary action impacting plant personnel ability to maintain safety function criteria. **[B2338]**

3.0 REFERENCES AND DEFINITIONS

3.1. Developmental References

3.1.1. NUREG 0654, Criteria for Preparation and Evaluation of Radiological Emergency response Plans and Preparedness in Support of Nuclear Power Plants

3.1.2. 10 CFR 20, Standard for Protection Against Radiation

3.1.3. 10 CFR 50.47, Emergency Plans

3.1.4. 10 CFR 50 Appendix E to Part 50, Emergency Planning and Preparedness for Production and Utilization Facilities

3.1.5. Calvert Cliffs Nuclear Power Plant Emergency Response Plan

3.1.6. CNG-PR-1.01-1011, Control of Station-Specific Procedure Change Process

3.1.7. CNG-PR-1.01-1005, Control of Constellation Nuclear Generation Technical Procedure Format and Content

3.1.8. CNG-PR-1.01-1009, Procedure Use and Adherence Requirements

3.1.9. Technical Procedures Writer's Manual

3.2. **Performance References**

3.2.1. Calvert Cliffs Nuclear Power Plant Emergency Response Plan

3.2.2. ERPIP-901, Communications Equipment

3.2.3. ERPIP-3.0, Immediate Actions

3.2.4. CNG-PR-3.01-1000, Records Management

3.3. **Definitions**

None

4.0 PREREQUISITES

4.1. **Training and Qualification**

4.1.1. Personnel performing this procedure shall be qualified on the tasks or activities contained in this procedure.

4.2. **Specifications**

4.2.1. All offsite agencies shall be verbally contacted within 15 minutes of the declaration time of the emergency. The declaration time of the emergency is recorded on ERPIP-3.0, Attachment 3, Initial Notification, item number 7.

4.3. **Initial Conditions**

4.3.1. One of the following Emergency Action Levels (EAL) is called at Calvert Cliffs Nuclear Power Plant:

- Unusual Event
- Alert
- Site Area Emergency
- General Emergency

5.0 PRECAUTIONS AND LIMITATIONS

5.1. Declared pregnant women and minors are not authorized to perform emergency functions.

6.0 PERFORMANCE

6.1. Activation

6.1.1. The person assigned by the Shift Manager (SM)/Control Room Supervisor (CRS) shall carry out these actions until relieved by the ERO Control Room Communicator (CR).

1. When relieved, the interim communicator should report to the SM/CRS for reassignment.

6.2. Operation

6.2.1. **PERFORM** Control Room Communicator (CR) functions as follows:

NOTE

The Dedicated Communicator and General Supervisor – Nuclear Plant Operations speed dial telephones are located on an equipment cart behind 1C17/18/19. If desired, speed dial telephones and speed dial telephone numbers card can be moved to the CRS desk by plugging phones into designated jacks located on the back of the cabinet behind the CRS desk.

These actions assume that the Dedicated Offsite Agency phones and/or standard telephones are operable. If these circuits are not operable, then communications must be by radio (See ERPIP 901, Communications Equipment, for radio operation instructions).

1. **IF** directed to notify ERO personnel, **THEN GO TO** Attachment 1, Personnel Notification. **[B1149]**

   a. The above action may be delegated.

2. **IF** directed to transmit <u>any</u> of the following to offsite agencies, **THEN GO TO** Attachment 2, Offsite Agency Notifications:

   - Initial Notification Form (ERPIP-3.0)
   - Follow-Up Communications Form (ERPIP-3.0)
   - Detailed Follow-Up Communications Form (ERPIP-3.0)

3. **IF** answering or placing calls that are not Offsite Agency Notifications or Personnel Notifications, **THEN GO TO** Attachment 6, General Telephone Communications.

6.2.2. **REFER** to the following attachments as needed to complete tasks:

- Attachment 7, Dedicated Offsite Agency Telephone
- ERPIP-901, Communications Equipment, Attachment 3, Speed Dial Telephone
- Attachment 9, Emergency Message Form Instructions

NOTE

Actions may be delegated to Control Room Staff.

6.2.3. **PERFORM** and **MAINTAIN** Control Room Accountability of all ERO members in the Control Room using the "Control Room Roster".

1. **INITIATE** personnel accountability using CR Roster.

2. **ENSURE** the whereabouts of CR Personnel are known continuously after accountability is established.

   a. **INSTRUCT** other personnel to check out with yourself or designee before leaving the Control Room.

6.3. **Deactivation**

6.3.1. **WHEN** notified of event termination, **THEN:**

1. **COLLECT** records and documentation generated during the event.

2. **RETURN** equipment and unused material to the designated storage locations **AND DISPOSE** of trash in the appropriate locations.

3. **FORWARD** records and documentation generated to the General Supervisor-Nuclear Plant Operations for turnover to the Director – Emergency Preparedness.

7.0 POST-PERFORMANCE ACTIVITIES

None

8.0 BASES

[B1149] IR4-000-588, AIT IR200200637, The ERO personnel recall pager activation was not timely.

[B2338] NRC Letter from Catherine Haney to Jim Spina, October 12, 2006, Mitigation Strategy Assessment and Closure Process for Phases 1, 2, and 3; Enclosure 3, Section C., Mitigating Strategies Table, Applicable License Condition Element B.1.

9.0 RECORDS

9.1. Records generated by this procedure may be permanent, non-permanent, or lifetime radiological records depending on the circumstances under which they are generated. Records shall be captured and controlled as follows:

9.1.1. During an actual event as described in the purpose statement of this procedure, the following records shall be considered **permanent** records and submitted to the Emergency Preparedness Unit for final disposition according to CNG-PR-3.01-1000, *Records Management*.

- Personnel Notification Form
- Offsite Agency Notification Form
- Emergency Message Form

9.1.2. During an actual event as described in the purpose statement of this procedure, dosimetry records, that is, any dose-related record including access history records, are considered **radiological lifetime records** and are to be handled and maintained according to standard practices and unit procedures.

None

9.1.3. During a drill or exercise, the following generated records shall be considered **non-permanent** records and submitted to the Emergency Preparedness Unit for evaluation and retention according to CNG-PR-3.01-1000, *Records Management*.

- Personnel Notification Form
- Offsite Agency Notification Form
- Emergency Message Form

Attachment 1; Personnel Notification

NOTE

This attachment provides details associated with making personnel notifications.

Normally for initial EAL declarations, personnel notifications will occur as part of implementing the ERPIP-3.0 Immediate Actions attachments.

This attachment will be used for initial notification for Severe Weather Recall and for Contaminated Injury.

1. **IF** this attachment is being implemented by Security because a hostile action has made the Control Room uninhabitable, **THEN GO** directly to Step D. **[B2338]**

A. **ACTIVATE** the Emergency Response Organization Notification System (ERONS).

1. **HAVE** the Initial Notification Form from ERPIP-3.0 immediately available for reference.
2. **ACCESS** a computer with Internet capability.
   a) **IF** at any time the Internet cannot be accessed, **THEN IMMEDIATELY GO** to step B of this attachment.
3. **CLICK** the Internet Explorer icon and **TYPE** the following into the address bar: http://www.envoyprofiles.com/ce/

NOTE

The user name and password are case sensitive.

4. **WHEN** the NotiFind log in page appears, enter:
   - Username: CCNPP
   - Password: NOW4$event
   - Click "Log on"
5. On the "Welcome to Notifind" screen, **CLICK** on "Activation"
6. On the NotiFind Main Menu screen, **CLICK** on "Activate System"
7. On the Create Notification/Select Notification Type screen, **SELECT** "ERO Notification System" **AND CLICK** on "Next".
8. On the Create Notification/Notification Details screen **PERFORM** the following:
   a) **SELECT** the "Event" indicated on the Initial Notification Form (Section B).
   b) **SELECT** the "Unit" indicated on the Initial Notification Form (Section B).
   c) **SELECT** "Reason for Notification" indicated on the Initial Notification Form (Section B).

Attachment 1, Personnel Notification (Continued)

d) **ENTER** Declaration time.

e) **SELECT** ERO personnel "Action" indicated on the Initial Notification Form (Section B).

f) **VERIFY** that the message in the "Message Text" box is correct.

g) **UTILIZE** the "Back" button as required to correct errors.

NOTE

The selection under "Polling Options" and "Security Options" are pre-populated and should not be altered.

9. Under "Sender Information" **ENTER** the following:
   - Name: leave blank
   - Caller ID: 410-495-4444
   - Email: CCNPP_EP@constellation.com
   - Click on the "Next" button

10. On the Create Notification/Notification Lists screen;
    a) **CLICK** on "Add List to Notification".
    b) **SELECT** "CCNPP ERO Roster" (click on box).
    c) **CLICK** "Add to Notification".
    d) **VERIFY** "CCNPP ERO Roster" is selected and **CLICK** "Next".

11. On the Create Notification/Notification Verify and Send Screen **VERIFY** information is accurate **AND CLICK** on the "SEND" button.
    a) **RECORD** the time sent from the Track Delivery Summary page: _____(Time).

12. **CHECK** Status is "Delivery in Progress" from the Track Delivery Summary page.
    a) **IF** the status is not "Delivery in Progress", **THEN GO TO** Step 1.B.

13. **INFORM** Security (4695) that ERONS has been activated.

Attachment 1, Personnel Notification (Continued)

NOTE

The following actions are steps which activate ERONS if the internet is non-functional. This method does NOT have all the selection features as the internet-based ERONS.

B. **IF** the internet is non-functional, **THEN ACTIVATE** the back-up process for ERONS:

1. Using the initial notification form **DETERMINE** which action is required:
   a) **NOTIFY** the ERO of an emergency and direct them to staff the normal emergency facilities
   b) **NOTIFY** the ERO of an emergency and direct them to staff the alternate emergency facilities
2. **DIAL** the following number on ANY working telephone: **8-1-800-735-0318**
   a) **WHEN** prompted, **THEN PRESS** "2" for Scenario Activation Line.
   b) **WHEN** prompted, **THEN ENTER** the Account Number for Calvert - 4955201#.
   c) **WHEN** prompted, **THEN ENTER** the PIN number as follows: 00000#.
   d) **WHEN** prompted, **THEN ENTER** the access code as follows:
      1) To direct the ERO to staff normal emergency facilities, enter access code: 5555#
      2) To direct the ERO to staff alternate emergency facilities, enter access code: 6666#
      3) To notify ERO of an emergency, but no response is required, enter access code: 7777#
3. **WHEN** ERONS reads the "Subject" line of the message, **THEN PRESS** "1" to accept the message or "2" to re-enter.
4. **WHEN** prompted, **THEN PRESS** "1" to send the message.
5. **RECORD** the time that you completed step 4 above _____ (Time).
6. **INFORM** Security (4695) that ERONS has been activated.

NOTE

This step should not delay transmittal of offsite information per Attachment 2.

C. **VERIFY** the Control Room pager activation via ERONS.

1. **IF** the pager in the Control Room does not receive the intended ERO notification within 5 minutes of the message being sent, **THEN REPEAT** step A or B as appropriate.

Attachment 1, Personnel Notification (Continued)

D. **SECURITY ONLY**

1. **ACCESS** a computer with Internet capability.

NOTE
If at any time the internet cannot be accessed, go immediately to step E.

2. **CLICK** the Internet Explorer icon and **TYPE** the following into the address bar:

   http://www.envoyprofiles.com/ce/

NOTE
The user name and password are case sensitive.

3. **WHEN** the NotiFind log in page appears, enter:
   - Username: CCNPP
   - Password: NOW4$event
   - Click "Log on"
4. On the "Welcome to Notifind" screen, **CLICK** on "Activation".
5. On the NotiFind Main Menu screen, **CLICK** on "Activate System".
6. On the Create Notification/Select Notification Type screen, **SELECT** "ERO Notification System" **AND CLICK** on "Next".
7. On the Create Notification/Notification Details screen **PERFORM** the following:
   a) **SELECT** Event: ACTUAL
   b) **SELECT** Unit: CALVERT CLIFFS
   c) **SELECT** Reason for Notification: GENERAL EMERGENCY
   d) **SELECT** Action: STAFF ALTERNATE EMERGENCY FACILITIES
   e) **VERIFY**: MESSAGE TEXT IS CORRECT
   f) **UTILIZE**: THE BACK BUTTON AS REQUIRED TO CORRECT ERRORS
8. Under "Sender Information" **ENTER** the following:
   - Name: leave blank
   - Caller ID: 410-495-4444
   - Email: CCNPP_EP@constellation.com

   CLICK on the "Next " button

Attachment 1, Personnel Notification (Continued)

9. On the Create Notification/Notification Lists Screen, **CHECK** the box next to the "CCNPP ERO Roster" **AND CLICK** on the "Next" button.
10. On the Create Notification/Notification Verify and Send Screen **VERIFY** information is accurate **AND CLICK** on the "SEND" button.
    1. **RECORD** the time sent from the Track Delivery Summary page:

       _____ (Time)
11. **CHECK** Status is "Delivery in Progress" from the Track Delivery Summary page.
    a) **IF** the Status is not "Delivery in Progress", **THEN GO TO** Step 1.E.

NOTE

The following actions are steps which activate ERONS if the internet is non-functional. This method does NOT have all the selection features as the internet-based ERONS.

E. **ACTIVATION OF THE BACKUP PROCESS FOR ERONS:**

1. **NOTIFY** the ERO of an emergency and direct them to staff the alternate emergency facilities by perform the following actions:
   a) **DIAL** the following number on ANY working telephone: **8-1-800-735-0318**
      1. **WHEN** prompted, **THEN PRESS** "2" for Scenario Activation Line.
      2. **WHEN** prompted **THEN ENTER** the Account Number for Calvert-4955201#.
      3. **WHEN** prompted, **THEN ENTER** the PIN number as follows: 00000#.
      4. **WHEN** prompted, **THEN ENTER** the access code as follows:
         a. To direct the ERO to staff alternate emergency facilities, enter access code: 6666#
   b) **WHEN** ERONS reads the "Subject" line of the message, **THEN PRESS** "1" to accept the message or "2" to re-enter.
   c) **WHEN** prompted, **THEN PRESS** "1" to send the message.
      1. **RECORD** the time that you completed step E.1.c above _____.(Time)

Attachment 2, Offsite Agency Notifications

NOTE

Initial Notification will normally be performed by the ERPIP-3.0 Immediate Actions attachments. This attachment provides details and can be referenced if having difficulty with making notifications. This Offsite Agency Notifications attachment will normally be used for transmitting follow-up communications.

A. **CHECK** form for completion as follows:

NOTE

The Follow-Up Communications Form and Detailed Follow-up Communications Form are not to be used for emergency upgrade or downgrade.

1. Initial Notification Form, items A.1 through A.7
    a. **IF** any form is incomplete, **THEN DIRECT** the initiator to complete and return the form.
2. Follow-Up Communications Form, items A.1 through A.11.
    a. **IF** any form is incomplete, **THEN DIRECT** the initiator to complete and return the form.
3. Detailed Follow-Up Communications Form, items A.1 through A.23.
    a. **IF** any form is incomplete, **THEN DIRECT** the initiator to complete and return the form.

NOTE

During off-hours, the Maryland Department of the Environment (MDE) Emergency Center is not staffed. The phone will not be answered. MEMA will forward information to MDE until offices are manned.

Attachment 7, *Dedicated Offsite Agency Telephone*, provides a description of the Dedicated Offsite Agency Phone System.

4. At Dedicated Offsite Agency Phone (CRS desk or on equipment cart behind 1C17/18/19):
    a. **LIFT** receiver.
        1. **DEPRESS** "OFFSITE CONFERENCE" (this rings the 5 State/County agencies simultaneously).

Attachment 2, Offsite Agency Notifications (Continued)

b. **IF** no ringing is heard, **THEN DEPRESS "B/U OFFSITE CONFERENCE"** (this rings the 5 State/County agencies simultaneously via alternate call routing).

c. **AS** each agency answers, **THEN SAY,** "This is Calvert Cliffs. Standby for an emergency message."

1. **IF** an agency did not answer, **THEN PLACE** a separate call using the outside line phone after providing the Initial or Follow-up Notification information to the agencies on line.
2. **IF** none of the agencies answer the primary or the backup conference call, then go to A.4.q of this attachment.
    a. Separate calls must be made.

d. **REQUEST** agency name and name of person.

e. **RECORD** name and time agency is contacted.

NOTE

The NRC need only be notified if transmitting Initial Notification Form.

	LOCATION	TIME	RECEIVED BY	DEDICATED PHONE	RADIO	OUTSIDE LINE
a.	CALVERT					(410-535-3491)
b.	ST. MARY'S					(301-475-8016)
c.	DORCHESTER					(410-228-2222)
d.	MEMA					(410-517-3600)
e.	MDE					(410-537-3975)
NOTIFY the NRC immediately after the above agencies have been notified.						
f.	NRC					(301-816-5100)
RECORD time all calls to above agencies were completed:						
Printed Name & Signature: _____						
FORWARD completed forms to Emergency Preparedness at event termination.						

f. **AFTER** all agencies are on line, **THEN SAY**:

1. "Please get a(n) _____ (*Initial Notification Form, Follow-Up Communication Form* or *Detailed Follow-up Communication Form* corresponding to the form provided to the Communicator)."
2. "I will wait for you to get the form."

Attachment 2, Offsite Agency Notifications (Continued)

g. **AFTER** all agencies get the form **OR** about 1 minute, **THEN SAY**:
   1. "I will give all information once then repeat it a second time."
   2. "If information is missed, please stay on line and I will repeat what is missed."

h. **GIVE** only the information as listed from the appropriate form:
   - Initial Notification Form, Items A.1 through A.7
   - Follow-Up Communications Form, Items A.1 through A.11
   - Detailed Follow-Up Communications Form, Items A.1 through A.23

i. **REPEAT** only information on form used in step A.4.h.

j. **ASK** each agency if full message was received.
   1. **IF** an agency does not answer during this query, **THEN PRESUME** that all information was missed.
      a. **GO TO** step A.4.p of this attachment **AND MAKE** a separate agency call.

k. **PROVIDE** any missed information to respective agency.

l. **IF** separate calls must be made on the dedicated offsite phone, **THEN DEPRESS** button for respective agency:

Calvert County	=	"CALVERT"
St. Mary's County	=	"ST. MARYS"
Dorchester County	=	"DORCH"
Maryland Emergency Management Agency	=	"MEMA"
Maryland Department of the Environment	=	"MDE"

m. **WHEN** agency answers, **THEN IDENTIFY** yourself as "Calvert Cliffs."

n. **REQUEST** person's name.

o. **RECORD** name and time in step A.4.e.

Attachment 2, Offsite Agency Notifications (Continued)

p. **IF** agency does not answer, **THEN CALL** agency on any outside line phone:

Calvert County	=	410-535-3491
St. Mary's County	=	301-475-8016
Dorchester County	=	410-228-2222
Maryland Emergency Management Agency	=	410-517-3600
Maryland Department of the Environment	=	410-537-3975

q. **IF** agency does not answer call, **THEN CONTACT** agency on Radio Communications Console (CRS desk) or Radio Desk set Control Unit Technical Support Center Annex (see ERPIP 901, *Communications Equipment*, for radio operating instructions).

r. **SET** Talk Group to the following:

Calvert County	=	"EMR RSP2"
St. Mary's County	=	"EMR RSP2"
Dorchester County	=	"EMR RSP2"
Maryland Emergency Management Agency	=	Deskset "EMR RSP2"/CR Console "153.44MHz"
Maryland Department of the Environment	=	TSCA "EMR RSP2"/CR Console "153.44MHz"

s. **WITH** agency on line, **THEN SAY**:

1. "This is Calvert Cliffs with an emergency message."
2. "Please get an *Initial Notification Form*, *Follow-Up Communication Form*, or *Detailed Follow-up Communication Form*."

t. **WHEN** the agency gets the form, **THEN GIVE** only the information as listed from the appropriate form:

- Initial Notification Form, Items A.1 through A.7
- Follow-Up Communications Form, Items A.1 through A.11
- Detailed Follow-Up Communications Form, Items A.1 through A.23.

u. **ASK** the agency if full message was received.

1. **PROVIDE** any missed information.

v. **MARK** in step A.4.e the method of contact ("Dedicated, Radio, Outside Line") for each agency.

Attachment 2, Offsite Agency Notifications (Continued)

NOTE

Initial Notification to the NRC is to be done within 1 hour of the time entered in *Time Declared* on the form.
NRC is last because it is expected that they will ask you to stay on the line. If this occurs, then stay on the phone with them until relieved by the NRC ENS Communicator.
Follow-Up Communication Form and *Detailed Follow-up Communications Form* are not sent to NRC.

B. **AT** the NRC Emergency Notification System (ENS) phone (CRS desk), **THEN:**

1. **LIFT** receiver **AND DIAL** the number listed on label attached to phone.
2. **IF** NRC does *not* answer, **THEN CALL** NRC on any outside line phone. Phone numbers are on the ENS phone itself and are listed in the Facility Phone Numbers List.
3. **WHEN** NRC answers, **THEN IDENTIFY** yourself.
4. **REQUEST** person's name.
5. **RECORD** name and time on the applicable form.
6. **WITH** NRC on line, **THEN PROVIDE** all information.
   a. **RESPOND** to NRC inquiries.
7. **REPORT** any problem with the ENS phone.

C. **SIGN** form.

NOTE

Fax machine operating instructions and phone numbers for EOF and JIC are on the machine itself.

D. **FAX** form to the Plant Parameter Communicators for the TSC.

E. **FAX** the form to the EOF **AND** JIC.

F. **KEEP** completed forms with communications records.

Attachment 3, Deleted

Use ERPIP-3.0, Attachment 3, Initial Notification Form

Attachment 4, Deleted

Use ERPIP-3.0, Attachment 6, Follow-Up Communications Form

Attachment 5, Deleted

Use ERPIP-3.0, Attachment 7, Detailed Follow-Up Communications Form

Attachment 6, General Telephone Communications

A. **ANSWER** the Dedicated Offsite Agency telephone (lift receiver; depress button adjacent to flashing LCD line indicator) and/or the Emergency Response Speed Dial phone (lift receiver).

B. **IF** person being called is available to speak, **THEN HAVE** the person come to the phone.

OR

IF using the Speed Dial phone, **THEN TRANSFER** the call to the person's number (see Speed Dial directory).

1. ERPIP-901, *Communications Equipment*, provides transfer instructions.

C. **IF** person being called is *not* available to speak, **THEN RECORD** message on an *Emergency Message Form*.

1. **RETAIN** one copy of the *Emergency Message Form*.

2. **GIVE** message to person called.

NOTE

ERPIP-901 provides a description of the Speed Dial phone system. Attachment 9, *Emergency Message Form*, may be used to document outgoing calls.

D. **IF** using the Speed Dial phone for outgoing calls, **THEN FOLLOW** instructions posted on the telephone or described in ERPIP-901, Attachment 3, *Speed Dial Telephone*.

E. **REPORT** phone problems to the Telecommunications Support Manager at the Emergency Operations Facility.

1. **IF** Telecommunications Support Manager is not staffed, **THEN REPORT** phone problems to telecommunications 24-hour trouble number, 410-495-4300 to request immediate repair.

Attachment 7, Dedicated Offsite Agency Telephone

NOTE

The Speed dial feature is for the standard phone lines only. It is not available using the Dedicated Offsite Agency Lines.

A. DESCRIPTION:

1. Provides direct communications from CCNPP locations to off-site emergency facilities.

2. Provides offsite agencies with capability to independently dial other outside agencies and CCNPP centers.

3. Uses dedicated, leased telephone lines via company telephone system network.

4. Battery-backed power supply provides for full system operability in the event of loss of AC power.

5. Dedicated Offsite Agency phones located onsite are equipped with one or more standard outside telephone lines for access to Administrative Telephone System features (for example, plant page, speed dial, and so forth) and routine outside system dialing.

B. LOCATION:

1. CCNPP Centers:

   a. Control Room

   b. Safe Shutdown Panels (45' Unit 1 and Unit 2 Switchgear Rooms)

   c. Technical Support Center

   d. Technical Support Center Annex

   e. Emergency Operations Facility

2. Off-site Agency Emergency Operations Centers (EOC):

   a. Calvert County*

   b. St. Mary's County*

   c. Dorchester County *

   d. Maryland Emergency Management Agency (MEMA)

Attachment 7, Dedicated Offsite Agency Telephone (Continued)

e. Maryland Department of the Environment (MDE)**

* Extension line located in County 911 for off-hours notifications.
** MEMA answers for MDE after normal work hours

C. OPERATION

1. Calls using the Dedicated Offsite Agency line

a. **FOR** outgoing calls to offsite agencies, **THEN**:

1. **LIFT** handset

2. **PRESS** button for desired location:

"OFFSITE CONFERENCE"	rings all 5 offsite agencies simultaneously
"B/U OFFSITE CONFERENCE"	rings all 5 offsite agencies simultaneously via alternate call routing
"CALVERT"	rings Calvert County EOC
"ST MARYS"	rings St. Mary's County EOC
"DORCH"	rings Dorchester County EOC
"MEMA"	rings Maryland Emergency Management Agency
"MDE"	rings Maryland Department of the Environment

3. **PRESS** "RLS" or hang-up to terminate call.

b. **FOR** incoming calls, **THEN:**

NOTE

Incoming calls from outside agencies to Calvert Cliffs simultaneously ring all Calvert Cliffs phones (Control Room, TSC, and Safe Shutdown Panels).

1. **DEPRESS** button adjacent to flashing LCD line indicator.

2. **LIFT** handset.

3. **SAY**, "This is Calvert Cliffs."

4. **GIVE** your location (CR, TSC, EOF, and so forth).

Attachment 7, Dedicated Offsite Agency Telephone (Continued)

5. **TERMINATE** call by either pressing "RLS" or hanging-up.

2. Calls using standard outside telephone lines: **EXERCISE** standard company telephone operating instructions for making and receiving calls.

D. FEATURES:

1. Automatic Hold

   If incoming call is received while already on a call, depressing the line button for the incoming call will automatically place the original call on hold.

Attachment 8, Deleted

Use Attachment 3, Speed Dial Telephone, in ERPIP-901, Communications Equipment.

Attachment 9, Emergency Message Form Instructions

A. Date: **ENTER** today's date.

B. **FOR** Incoming messages, **THEN**:

NOTE

Steps B.1 through 4 of this attachment refer to boxed information on the *Emergency Message Form.*

1. **CHECK** "INCOMING."
2. "Received:" **ENTER** time message is received.
3. "By:" **SIGN** your name.
4. "From:" **ASK** the person calling for the number on their *Emergency Message Form*. It is located in the upper left corner of the form. Record this number. **IF** person calling is *not* using an *Emergency Message Form,* **THEN WRITE** "NA."
5. "FROM:" **ENTER** name or title of person that originated the message (for example, Emergency Director/Recovery Manager, Operational Support Center Director, and so forth)
6. "TO:" **ENTER** name(s) or title(s) of person(s) intended to get the message.
7. "Receipt Acknowledged": each person intended to get the message should acknowledge that the message was received by initialing and dating here.

C. **FOR** Outgoing messages, **THEN**:

NOTE

Steps C.1 through C.4 of this attachment refer to boxed information on the *Emergency Message Form.*

1. **CHECK** "OUTGOING."
2. "Transmitted:" **ENTER** time message is sent.

Attachment 9, Emergency Message Form Instructions (Continued)

3. "By:" **SIGN** your name.

4. "To:" **ASK** the person that is receiving the call for their *Emergency Message Form* number. It is located in the upper left corner of the form. **RECORD** this number

5. "FROM:" **ENTER** name or title of person that originated the message.

6. "TO:" **ENTER** name(s) or title(s) of person(s) intended to get the message.

D. **FOR** Intra-Center messages, **THEN**:

NOTE

Steps D.1 through D.4 of this attachment refer to boxed information on the *Emergency Message Form.*

It is expected that a copy or the original of Intra-Center messages would be hand delivered within the center.

1. **CHECK** "INTRA-CENTER."

2. "Written:" **ENTER** time that message is written.

3. "By:" **SIGN** your name.

4. "FROM:" **ENTER** name of person that originated the message.

5. "TO:" **ENTER** name(s) or title(s) of person(s) intended to get message.

CENG

a joint venture of

Constellation Energy · EDF

Calvert Cliffs Nuclear Power Plant
TECHNICAL PROCEDURE

ERPIP-106

CONTROL ROOM PLANT PARAMETERS COMMUNICATOR (CR)

Revision 00600

Safety Related

REFERENCE USE

Applicable To:

- **Calvert Cliffs Nuclear Power Plant**

Approval Authority:
Plant General Manager

SUMMARY OF ALTERATIONS

Revision	Change	Summary of Revision or Change
006	00	2.2 – added "Update and maintain Control Room ERF log entries on the Emergency Response Organization (ERO) SharePoint." and GS-NPO 3.2 Deleted TSC Computer Operators Guide 6.2 – added guidance on how to access and update plant parameters 6.2.3 - added "Update and maintain Control Room log entries on the Emergency Response Organization (ERO) SharePoint." (PCR-09-05804)

TABLE OF CONTENTS

1.0 PURPOSE

1.1. This procedure provides emergency response instructions to the Control Room Plant Parameters Communicator (CR) when responding during an emergency action level called at Calvert Cliffs Nuclear Power Plant.

2.0 APPLICABILITY/SCOPE

2.1. Applicability

2.1.1. This procedure applies to the Control Room Plant Parameters Communicator (CR).

2.1.2. Performance of this procedure is in the order of Activation (Subsection 6.1), Operation (Subsection 6.2), and Deactivation (Subsection 6.3).

2.2. Responsibilities

The Control Room Plant Parameters Communicator (CR) shall:

- Report directly to the GS-Nuclear Plant Operations or Shift Manager (CR).
- Obtain plant parameters and environmental status information.
- Maintain documentation for records retention.
- Update and maintain Control Room ERF log entries on the Emergency Response Organization (ERO) SharePoint.

3.0 REFERENCES AND DEFINITIONS

3.1. Developmental References

3.1.1. NUREG 0654, Criteria for Preparation and Evaluation of Radiological Emergency response Plans and Preparedness in Support of Nuclear Power Plants

3.1.2. 10 CFR 20, Standard for Protection Against Radiation

3.1.3. 10 CFR 50.47, Emergency Plans

3.1.4. 10 CFR 50 Appendix E to Part 50, Emergency Planning and Preparedness for Production and Utilization Facilities

3.1.5. Calvert Cliffs Nuclear Power Plant Emergency Response Plan

3.1.6. CNG-PR-1.01-1005, Control of Constellation Nuclear Generation Technical Procedure Format and Content

3.1.7. CNG-PR-1.01-1009, Procedure Use and Adherence Requirements

3.1.8. Technical Procedures Writer's Manual

3.2. **Performance References**

3.2.1. Calvert Cliffs Nuclear Power Plant Emergency Response Plan

3.2.2. CNG-PR-3.01-1000, Records Management

3.3. **Definitions**

None.

4.0 PREREQUISITES

4.1. **Training and Qualification**

4.1.1. Personnel performing this procedure shall be qualified on the tasks or activities contained in this procedure.

4.2. **Initial Conditions**

4.2.1. One of the following emergency events is called at Calvert Cliffs Nuclear Power Plant:

- Alert
- Site Area Emergency
- General Emergency

4.3. **Documentation and Support**

4.3.1. The forms in this procedure are representative of the forms used to implement the process to this procedure. Forms may be computer generated or revised without requiring a change or revision to this procedure, providing the intent is not changed, and the required information is not deleted from the existing forms.

5.0 PRECAUTIONS AND LIMITATIONS

5.1. Declared pregnant women and minors are not authorized to perform emergency functions.

6.0 PERFORMANCE

6.1. Activation

6.1.1. **REPORT** to the Control Room on notification of an Alert, Site Area Emergency, or General Emergency.

6.1.2. **NOTIFY** GS-Nuclear Plant Operations (CR) or Shift Manager (CR) of your presence.

6.2. Operation

6.2.1. **ACCESS** the ERO SharePoint.

1. **CLICK** on the "CCNPP Drill/Event Data" tab.

> **NOTE**
>
> Plant parameter data is located on the right side of the page under the heading "Plant Parameters".

2. **CLICK** on link titled "U1 Control Room Plant Parameters" or "U2 Control Room Plant Parameters".

3. **CLICK** on "Update Status Button".

> **NOTE**
>
> The format for input of information is very specific. An example is as follows: 05-Oct-07 11:25:00. The Month is always 3 letters (for example, Aug, Sep, Oct).

4. **UPDATE** the applicable information.

- Emergency Class
- Time Declared
- Applicable Unit Mode
- Offsite Power
- 1A Diesel
- 1B Diesel
- 2A Diesel
- 2B Diesel
- 0C Diesel

6.2.2. Continuously **ASSESS** plant parameters data for unexpected values and trends.

1. **COMPARE** Plant Parameter Auto Log readings to Panel readings, where available.

2. **INFORM** GS-NPO of unexpected values and trends.

6.2.3. **UPDATE** and **MAINTAIN** Control Room ERF log entries on the Emergency Response Organization (ERO) SharePoint.

6.2.4. **IF** ERO SharePoint is <u>not</u> operable, **THEN COMPLETE** the following:

- Attachment 1, Plant Parameters Form
- Attachment 2, Environmental Status Form (if EOF is not activated)

1. **SEND** Plant Parameter Status Form and Environmental Status Form to the following centers by any means possible (for example, facsimile machine, telephone, or runner).

   - Technical Support Center
   - Emergency Operations Facility
   - Operational Support Center
   - Joint Information Center

2. **NOTIFY** the centers of the data transmission method that was used.

6.3. **Deactivation**

6.3.1. **WHEN** notified of event termination, **THEN**:

1. **COLLECT** records generated during the event.

2. **RETURN** equipment and unused material to the designated storage locations and

3. **DISPOSE** of trash in the appropriate locations.

4. **FORWARD** records to the Shift Manager (CR) for turnover to the Director – Emergency Preparedness.

7.0 POST-PERFORMANCE ACTIVITIES

7.1. None

8.0 BASES

8.1. None

9.0 RECORDS

9.1. Records generated by this procedure may be permanent, non-permanent, or lifetime radiological records depending on the circumstances under which they are generated. Records shall be captured and controlled as follows:

9.1.1. During an actual event as described in the purpose statement of this procedure, records shall be considered **permanent** records and submitted to the Emergency Preparedness Unit for final disposition according to CNG-PR-3.01-1000, Records Management.

- Attachment 1, Plant Parameters Status Form
- Attachment 2, Environmental Status

9.1.2. During an actual event as described in the purpose statement of this procedure, dosimetry records, that is, any dose-related record including access history records, are considered **radiological lifetime records** and are to be handled and maintained according to standard practices and unit procedures.

- None

9.1.3. During a drill or exercise, records generated shall be considered **non-permanent** records and submitted to the Emergency Preparedness Unit for evaluation.

- Attachment 1, Plant Parameters Status Form
- Attachment 2, Environmental Status Form

Attachment 1, Plant Parameters Status Form

EMERGENCY CLASS: _____ TIME DECLARED: _____ AFFECTED UNIT: #_____ REACTOR STATUS: CRITICAL _____ SHUTDOWN _____

REACTOR COOLANT SYSTEM

PPSTAT1

TIME	RCS FLOW LOOP (%) 1 F111A	RCS FLOW LOOP (%) 2 F121A	SUBCOOLED MARGIN (°F) 1 TSCM RCSA	SUBCOOLED MARGIN (°F) 2 TSCM RCSB	PZR LEVELS (INCHES) HOT L110X L110Y	PZR LEVELS (INCHES) COLD/ COMP L110XI L110YI	PZR PRESS (PSIA) P105A	COOLANT TEMP. °F LOOP 1 TH (°F) T112 HA	LOOP 1 Tc (°F) T112 CA	LOOP 1 Tc (°F) T112 CB	LOOP2 TH (°F) T122 HA	LOOP2 Tc (°F) T122 CA	LOOP2 Tc (°F) T122 CB	CORE EXIT TEMP (°F) Q1CHA MAX	(°F) Q2CHB MAX	(°F) Q3CHA MAX	(°F) Q4CHB MAX	CVCS LETDN. FLOW (gpm) F202	CVCS CHARGE FLOW (gpm) F212	RVLMS CH A (IN) L21A – L28A	RVLMS CH B (IN) L21B – L28B

UNAFFECTED UNIT STATUS	
UNIT #_____	
OPERATING	_____
PWR	_____ %
SHUTDOWN	_____
MODE	

STEAM GENERATOR STATUS

EMERGENCY SYSTEMS

PPSTAT2

TIME	S/G LEVEL (inches) 1 L1114D	S/G LEVEL (inches) 2 L1124D	S/G PRESSURE (psig) 1 P3991	S/G PRESSURE (psig) 2 P4008	AUX FEED FLOW (gpm) 1 F4509 TURB	AUX FEED FLOW (gpm) 2 F4510 TURB	AUX FEED FLOW (gpm) 1 F4524 MTR	AUX FEED FLOW (gpm) 2 F4534 MTR	HPSI FLOW (gpm) 1 A F311%	HPSI FLOW (gpm) 1 B F321%	HPSI FLOW (gpm) 2 A F331%	HPSI FLOW (gpm) 2 B F341%	LPSI FLOW (gpm) F306	CNTMT. SPRAY (gpm) 1 F4148%	CNTMT. SPRAY (gpm) 2 F4149%	RWT LEVEL (ft) L4143

MISCELLANEOUS DATA		
OFFSITE POWER: AVAILABLE ( ) NOT AVAILABLE ( )		
DIESEL GENERATOR	OPERABLE	NON-OPERABLE
1A	( )	( )
1B	( )	( )
2A	( )	( )
2B	( )	( )
0C	( )	( )

Forward record to Emergency Preparedness at activation termination

Date:_____

*If using Control Board indications, then convert to KCPM by cpm indication / 1000

Page 2 of 2

Attachment 1, Plant Parameters Status Form (Continued)

CONTAINMENT STATUS **RMS DATA**

PPSTAT2

TIME	CNTMT PRESS	TEMP	H_2 --	H_2	H_2	H_2	CONTAINMENT SUMP LEVEL		MN VENT GAS (KCPM) U-2 TSC only*		WRNG (uCi/sec)	CONTAINMENT HI RANGE (R/h)		MAIN STEAM RAD. MONITOR (R/h)	
	(psig)	(°F)	(%)	(Volts)	(%)	(Volts)	WR (IN.)		U-1	U-2		CH A	CH B	R5421!	R5422!
	P5310	T5309	A6519X	A6519Y	A6527X	A6527Y	L4146	L4147	R5415A	R5415B	R5415!	R5317A!	R5317B!		

SIGNIFICANT PLANT PROBLEMS

TIME	

Forward record to Emergency Preparedness at activation termination

Date:_____

*If using Control Board indications, then convert to KCPM by $\frac{\text{cpm indication}}{1000}$

Page 1 of 1

Attachment 2, Environmental Status Form

METEOROLOGICAL DATA

TIME	Δ T (°C)	WIND DIRECTION (0°)	WIND SPEED		STABILITY CLASS (if being used)
			MPH	M/S	

RADIOLOGICAL RELEASE DATA
TIME OF RELEASE:
TYPE OF RELEASE:
RELEASE POINT:
EST. RELEASE DURATION:
RELEASE COMPOSITION:

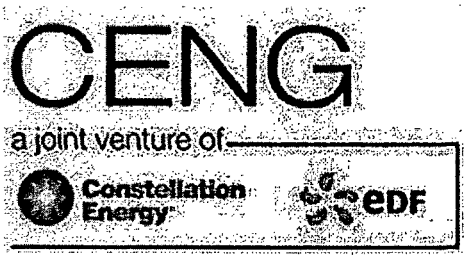
WEATHER CONDITIONS

PROTECTIVE ACTION RECOMMENDATIONS

LOCATION (SECTOR/ZONE)	ACTION	TIME	DATE

Forward record to Emergency Preparedness at activation termination.

Date:_____



Calvert Cliffs Nuclear Power Plant
TECHNICAL PROCEDURE

ERPIP-109

RADIATION MONITORING SYSTEM COMMUNICATOR (CR)

Revision 00801

Safety Related

REFERENCE USE

Applicable To:

- **Calvert Cliffs Nuclear Power Plant**

Approval Authority:
Plant General Manager

SUMMARY OF ALTERATIONS

Revision	Change	Summary of Revision or Change
008	01	Attachment 1 – Added rows to allow additional data to be documented (PCR-10-04712)
008	00	Updated Section 2.0. Removed the Scope of the procedure. The Scope indicated that steps in section 6.2, Operations, could be performed in any order, however, the steps must to be performed in the order they are presented. Updated Section 3.1, Developmental References. Changed 3.1.6 from PR-1-101, Preparation and Control of Calvert Cliffs Technical Procedures to CNG-PR-1.01-1005, Control of Constellation Nuclear Generation Technical Procedure Format and Content. (RPA-2007-1499). PR-1-101 is no longer used. CNG-PR-1.01-1005 is the new fleet procedure. Updated Section 3.1, Developmental References. Changed 3.1.7 from PR-1-103, Use of Procedures, to CNG-PR-1.01-1009, Procedure Use and Adherence Requirements. (RPA-2007-1499). PR-1-103 is no longer used. CNG-PR-1.01-1009 is the new fleet procedure. Updated Section 3.2, Performance References. Added CNG-PR-3.01-1000, Records Management. This reference, formally, PR-3-100 was referred to in Section 9.0, Records and was never referenced in the performance section. 6.2 Note Deleted "The steps in Subsection 6.2 may be performed in any order." This does not apply to section 6.2. 6.2.1 Added "Refer to Attachment 2, RMS Setpoint to obtain additional information as needed" 6.2.2.1, 6.2.2.2, and 6.2.2.3 Updated Steps to correct the out of date instructions for transmitting data for the Radiation Monitoring System Communicator. (PCR-09-01984) (PCR-09-05884) 6.2.4.1 Added Note to correct the out of date instructions for transmitting data for the Radiation Monitoring System Communicator. (PCR-09-01984) (PCR-09-05884) 6.2.4.1 Deleted Emergency Operations Facility, Environmental Assessment Office because it no longer exists. The position is located in the DAO. (PCR-09-01984) 8.1.2 Added "according to CNG-PR-3.01-1000, Records Management" Added Attachment 2, RMS Setpoints, to Table of Contents. This is not currently in Revision 00703. The Attachment is in Revision 00703 but not stated in the Table of Contents. Changed all references from "web page" to SharePoint to comply with current usage. Converted the procedure into the CEG template.

TABLE OF CONTENTS

1.0 PURPOSE

This procedure provides emergency response instructions to the Radiation Monitoring System (RMS) Communicator (CR) at the Control Room when responding to an emergency action level called at Calvert Cliffs Nuclear Power Plant.

2.0 APPLICABILITY/SCOPE

2.1. Applicability

2.1.1. This procedure applies to the RMS Communicator (CR).

2.1.2. Performance of this procedure is in the order of Activation (Subsection 6.1), Operation (Subsection 6.2) and Deactivation (Subsection 6.3).

2.2. Responsibilities

2.2.1. The RMS Communicator (CR) shall:

1. Report directly to the Shift Manager (CR).
2. Record RMS data.
3. Transmit RMS data for other Emergency Response Centers.
4. Update RMS data for other Emergency Response Centers.

3.0 REFERENCES AND DEFINITIONS

3.1. Developmental References

3.1.1. NUREG 0654, Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants

3.1.2. 10 CFR 20, Standard for Protection Against Radiation

3.1.3. 10 CFR 50.47, Emergency Plans

3.1.4. 10 CFR 50 Appendix E to Part 50, Emergency Planning and Preparedness for Production and Utilization Facilities

3.1.5. Calvert Cliffs Nuclear Power Plant Emergency Response Plan

3.1.6. CNG-PR-1.01-1005, Control of Constellation Nuclear Generation Technical Procedure Format and Content

3.1.7. CNG-PR-1.01-1009, Procedure Uses and Adherence Requirements

3.1.8. CNG-PR-3.01-1000, Records Management

3.2. **Performance References**

3.2.1. Calvert Cliffs Nuclear Power Plant Emergency Response Plan

3.3. **Definitions**

None

4.0 PREREQUISITES

4.1. **Training and Qualification**

4.1.1. Personnel performing this procedure shall be qualified on the tasks or activities contained in this procedure.

4.2. **Initial Conditions**

4.2.1. One of the following emergency action levels is called at Calvert Cliffs Nuclear Power Plant:

- Alert
- Site Area Emergency
- General Emergency

4.3. **Documentation and Support**

4.3.1. Forms needed to implement this procedure are contained as attachments to this procedure. Forms may be computer generated or revised without requiring a change or revision to this procedure, providing the intent is not changed, and the required information is not deleted from the existing forms.

5.0 PRECAUTIONS

5.1. Declared pregnant women and minors are not authorized to perform emergency functions.

6.0 PERFORMANCE

6.1. **Activation**

6.1.1. **REPORT** to Control Room on notification of an Alert, Site Area Emergency, **OR** General Emergency.

6.1.2. **NOTIFY** GS - Nuclear Plant Operations (GS-NPO) (CR) **OR** Shift Manager (CR) of your presence for accountability.

6.2. Operation

NOTE

Additional Attachment 1, RMS Status forms are stored in the "Emergency Forms" file cabinet located in Unit-1 DAS.

6.2.1. **RECORD** information specified on Attachment 1, RMS Status, from the control panels. Refer to Attachment 2, RMS Setpoints to obtain additional information as needed.

6.2.2. **UPDATE** the Emergency Response SharePoint RMS Status information (this may be delegated) at approximately 15 minute intervals by performing the following steps:

1. Using Copier, **E-MAIL** RMS Status form to your email address.
2. **OPEN** file and **SAVE** RMS data file to your desktop as "rms01", "rms02", "rms03", and so forth.
3. **UPLOAD** the RMS data file to the ERO SharePoint at: http://moss.constellation.com/cgg/home/ero/ccnpp/default.aspx

6.2.3. **SUBMIT** updates to the Emergency Response SharePoint at approximately 15 minute intervals.

6.2.4. **IF** the Emergency Response SharePoint is not operable, **THEN TRANSMIT** RMS Status to the centers listed below by any means possible (for example, telephone; facsimile machine; runner).

NOTE

Phone and Fax Numbers are available in the Emergency Response Facility Phone Book located on the ERO SharePoint under CCNPP Drill/Event Data tab titled ERF Contac Information.

1. **NOTIFY** the following respective centers of the data transmission method being used:
   - Operational Support Center
   - Emergency Operations Facility, Dose Assessment Office

6.3. **Deactivation**

6.3.1. **WHEN** notified of event termination, **THEN**

1. **COLLECT** records generated during the event.

2. **RETURN** equipment **AND** unused material to the designated storage locations **AND DISPOSE** of trash in the appropriate locations.

3. **FORWARD** records to Shift Manager (CR) for turnover to the Director – Emergency Preparedness.

7.0 BASES

None

8.0 RECORDS

8.1. Records generated by this procedure may be permanent, non-permanent, or lifetime radiological records depending on the circumstances under which they are generated. Records shall be captured and controlled as follows:

8.1.1. During an actual event as described in the purpose statement of this procedure, records shall be considered **permanent** records and submitted to the Emergency Preparedness Unit for final disposition according to CNG-PR-3.01-1000, Records Management.

Attachment 1, RMS Status

8.1.2. During an actual event as described in the purpose statement of this procedure, dosimetry records, that is, any dose-related record including access history records, are considered **radiological lifetime records** and are to be handled and maintained according to CNG–3.01-1000, Records Management.

8.1.3. During a drill or exercise, records generated shall be considered **non-permanent** records and submitted to the Emergency Preparedness Unit for evaluation and retention according to CNG-PR-3.01-1000, Records Management.

Attachment 1, RMS Status

Attachment 1, RMS STATUS

Date: _____

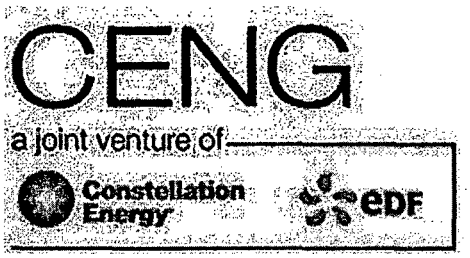
Time	1-RR-11		0-RR-11			2-RR-21	
	1-RI-7004 (51) R/HR U-1 East ECCS PpRm	1-RI-5316A (61) R/HR U-1 Cntmt	0-RI-7017 (51) R/HR RC Waste PP RM	0-RI-7020 (56) R/HR SFP HX Rm		2-RI-7004 (51) R/HR U-2 East ECCS PpRm	2-RI-5316A (61) R/HR U-2 Cntmt
	1-RI-7005 (52) R/HR U-1 West ECCS PpRm	1-RI-5415 (66) CPM Main Vent Gaseous	0-RI-7016 (52) R/HR Misc Waste PP RM	0-RI-7023 (57) R/HR Chem Lab	0-RI-7027 (62) R/HR Gas Anal Equip RM	2-RI-7005 (52) R/HR U-2 West ECCS PpRm	2-RI-5415 (66) CPM Main Vent Gaseous
	1-RI-7006 (53) R/HR Sample RM	1-RI-5410 (70) CPM WP Vent -			0-RI-5420 (65) CPM Fuel Hand Area Vent	2-RI-7006 (53) R/HR Sample RM	2-RI-5410 (70) CPM WP Vent -
		1-RI-5406 (71) CPM U-1 ECCS PP Vent	0-RI-7018(54) R/HR Waste Gas Equip RM	0-RI-7025 (59) R/HR Spent Fuel Handling Mach	0-RI-5425 (66) CPM Access Cont Area Vent		2-RI-5406 (71) CPM U2 ECCS PP Vent
	1-RI-7011 (60) R/HR U-1 West Pen Rm			0-RI-7024 (60) R/HR SFP Area RM	0-RI-5350 (67) CPM Cont Rm Vent	2-RI-7011 (60) R/HR U-2 West Pen Rm	

Attachment 2, RMS SETPOINTS

Time	1-RR-11		0-RR-11			2-RR-21	
Device Location Scale Range High Alarm	1-RI-7004 U-1 East ECCS PpRm R/HR E-4/E1 100 mr/hr	1-RI-5316A U-1 Cntmt R/HR E-4/E1 150 mr/hr	0-RI-7017 RC Waste PP RM R/HR E-4/E1 5 mr/hr	0-RI-7020 SFP HX Rm R/HR E-4/E1 6 mr/hr	0-RI-7026 New Fuel Storage Area R/HR E-4/E1 5 mr/hr	2-RI-7004 U-2 East ECCS Pp Rm R/HR E-4/E1 100 mr/hr	2-RI-5316A U-2 Cntmt R/HR E-4/E1 150 mr/hr
Device Location Scale Range High Alarm	1-RI-7005 U-1 Westt ECCS PpRm R/HR E-4/E1 100 mr/hr	1-RI-5415 Main Vent Gaseous CPM E1/E6 30,000 cpm	0-RI-7016 Misc Waste PP RM R/HR E-4/E1 25 mr/hr	0-RI-7023 Chem Lab R/HR E-4/E1 1 mr/hr	0-RI-7027 Gas Anal Equip RM R/HR E-4/E1 2 mr/hr	2-RI-7005 U-2 West ECCS Pp Rm R/HR E-4/E1 100 mr/hr	2-RI-5415 Main Vent Gaseous CPM E1/E6 30,000 cpm
Device Location Scale Range High Alarm	1-RI-7006 Sample RM R/HR E-4/E1 60 mr/hr	1-RI-5410 WP Vent CPM E1/E6 600 cpm	0-RI-7019 Decon RM R/HR E-4/E1 5 mr/hr	0-RI-7022 Liquid Waste Evap Rm R/HR E-4/E1 20 mr/hr	0-RI-5420 Fuel Hand Area Vent CPM E1/E6 600 cpm	2-RI-7006 Sample RM R/HR E-4/E1 60 mr/hr	2-RI-5410 WP Vent CPM E1/E6 600 cpm

Attachment 2, RMS SETPOINTS (Continued)

Time	1-RR-11		0-RR-11			2-RR-21	
Device Location Scale Range High Alarm	1-RI-7010 U-1 BAST RM R/HR E-4/E1 20 mr/hr	1-RI-5406 U-1 ECCS PP Vent CPM E1/E6 2000 cpm	0-RI-7018 Waste Gas Equip RM R/HR E-4/E1 10 mr/hr	0-RI-7025 Spent Fuel Handling Mach R/HR E-4/E1 10 mr/hr	0-RI-5425 Access Cont Area Vent CPM E1/E6 100 cpm	2-RI-7010 U-2 BAST RM R/HR E-4/E1 20 mr/hr	2-RI-5406 U2 ECCS PP Vent CPM E1/E6 1,000 cpm
Device Location Scale Range High Alarm	1-RI-7011 U-1 West Pen Rm R/HR E-4/E1 75 mr/hr		0-RI-7021 Drum Storage RM R/HR E-4/E1 10 mr/hr	0-RI-7024 SFP Area RM R/HR E-4/E1 5 mr/hr	0-RI-5350 Cont Rm Vent CPM E1/E6 120 cpm	2-RI-7011 U-2 West Pen Rm R/HR E-4/E1 50 mr/hr	
Device Location Scale Range High Alarm	1-RI-5317A U-1 Cntmt Hi Range R/H E0/E8 6 r/hr	1-RIC-5421 11 Main Stm Eff R/H E-4/E4 10 mr/hr				2-RI-5317A U-2 Cntmt Hi Range R/H E0/E8 6 r/hr	2-RIC-5421 21 Main Stm Eff R/H E-4/E4 10 mr/hr
Device Location Scale Range High Alarm	1-RIC-5415 U-1 PLT Vent Eff Noble Gas UCi/Sec E1/E8 137,000 uci/sec	1-RIC-5422 R/H 12 Main Stm Eff R/H E-4/E4 10 mr/hr				2-RIC-5415 U-2 PLT Vent Eff Noble Gas UCi/Sec E1/E8 137,000 uci/sec	2-RIC-5422 22 Main Stm Eff R/H E-4/E4 10 mr/hr



Calvert Cliffs Nuclear Power Plant
TECHNICAL PROCEDURE

ERPIP-750

SECURITY

Revision 01100

Safety Related

REFERENCE USE

Applicable To:

- **Calvert Cliffs Nuclear Power Plant**

Approval Authority:
Plant General Manager

SUMMARY OF ALTERATIONS

Revision	Change	Summary of Revision or Change
011	00	Entire procedure – Changed "Site Emergency" to "Site Area Emergency"
		1.1 - added "EAL" and "CCNPP" changed "called" to "declared"
		2.3.1.4 – clarified/simplified step
		3.2.1 – updated reference
		4.2 – simplified step (added acronyms) changed "called" to "declared"
		6.1.1 – changed "to inform him or her" to "AND INFORM them"
		6.2.1 Note – removed references to actual steps
		6.2.1.1 Warning – Changed "Access Control Station" to "Security"
		6.2.2.1 update phone numbers
		6.2.2.2 – Clarified step – (ERONs)
		6.2.2.3 – Clarified step – (ERONs)
		6.2.2.3.a Note – deleted "Access Control Station"
		6.2.2.3.b – Combined steps/ Changed "NOTIFY" to "INFORM"
		6.2.2.3.c – Added step instructing ERF Directors to initiate recalling ERO using ERO Recall list
		6.2.4.3 – updated title to "Radiation Protection Director"
		6.2.4.4 – clarified step
		6.2.K.5 (previous revision) – deleted step that allowed offsite teams to re-enter Protected Area and pick-up their dosimetry.
		6.3.1.3 bullets – deleted bullet that references Reports generated from the automated recall system
		9.1.1 – updated performance reference and deleted bullet that references Reports generated from the automated recall system
		9.1.3 – updated performance reference and deleted bullet that references Reports generated from the automated recall system
		Attachment 2 – A.1 Note – added "Secondary"
		Attachment 2 – A.2.a – deleted "Overlook" and Changed "Visitors Center/Educational Center" to Welcome Center"
		Attachment 2 – A.2.c(2) – changed "CEG" to "CENG"
		Attachment 2 – B.1.a – changed "All Personnel Onsite Report" to "All Personnel in the Protected Area Report"
		Attachment 2 – B.1.b – deleted "Onsite Monitoring Team and Dosimetry Team" added "Survey Team"
		Attachment 2 – B.2.a – deleted "Access Control Station"
		Attachment 2 – C.1. and C.1.a – combined/simplify these steps and changed PGM to TSC Manager
		Attachment 4 – Changed references to "Emergency Organization" to "Emergency Response Organizations"

TABLE OF CONTENTS

1.0 PURPOSE

1.1. This procedure provides emergency response instructions to the Security Shift Supervisor when responding to an emergency action level (EAL) declared at Calvert Cliffs Nuclear Power Plant (CCNPP).

2.0 APPLICABILITY/SCOPE

2.1. Applicability

This procedure applies to the Security Shift Supervisor.

2.2. Scope

2.2.1. Performance of this procedure is in the order of Activation (Subsection 6.1), Operation (Subsection 6.2), and Deactivation (Subsection 6.3).

2.2.2. Performance of the actions in the order they are presented in Subsection 6.2, Operation, is not mandatory provided Subsection 6.1, Activation, has been accomplished.

2.3. Responsibilities

2.3.1. The Security Shift Supervisor shall:

1. Report to the Operational Support Center Director.
2. Maintain a chronological log of events (may be delegated). **[B1230]**
3. Perform required tasks and evolutions, appropriate to the situation. **[B1230]**
4. Maintain accountability of the Nuclear Security Officers responding to an EAL declared at CCNPP. This responsibility can be delegated to the Security Representative dispatched to the Operational Support Center. **[B1229]**

3.0 REFERENCES AND DEFINITIONS

3.1. Developmental References

3.1.1. NUREG 0654, Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants

3.1.2. 10 CFR 20, Standard for Protection Against Radiation

3.1.3. 10 CFR 50.47, Emergency Plans

3.1.4. 10 CFR 50 Appendix E to Part 50, Emergency Planning and Preparedness for Production and Utilization Facilities

3.1.5. Calvert Cliffs Nuclear Power Plant Emergency Response Plan

3.1.6. PR-1-101, Preparation and Control of Calvert Cliffs Technical Procedures

3.1.7. PR-1-103, Use of Procedures

3.1.8. Technical Procedures Writer's Manual

3.2. **Performance References**

3.2.1. CNG-SE-1.01-1001, Fitness For Duty Program

3.3. **Definitions**

3.3.1. None

4.0 PREREQUISITES

4.1. **Training and Qualifications**

Personnel performing this procedure shall be qualified on the tasks or activities contained in this procedure.

4.2. **Initial Conditions**

One of the following EALs is declared at CCNPP:

- Unusual Event
- Alert
- Site Area Emergency
- General Emergency

4.3. **Documentation and Support**

Forms needed to implement this procedure are contained as attachments to this procedure. Forms may be computer generated or revised without requiring a change or revision to this procedure, providing the intent is not changed, and the required information is not deleted from the existing form.

5.0 PRECAUTIONS AND LIMITATIONS

5.1. Declared pregnant women and minors are not authorized to perform emergency functions.

5.2. This procedure assumes a radiological emergency exists. If a security event exists, then actions addressed herein may not be possible or practical. Alternate strategies are either ad hoc or designated in the procedure. **[B1230]**

5.3. Failure to execute personnel recall support actions (action steps 6.2.2 - 6.2.3) as soon as possible may result in delayed staff recall.

6.0 PERFORMANCE

6.1. Activation

NOTE

The steps may be performed in any order and only appropriate actions implemented considering the situation in Subsection 6.1, Activation, and Subsection 6.2, Operations.

6.1.1. **CONTACT** the Operational Support Center Director **AND INFORM** them of your presence in the Nuclear Security Facility.

6.1.2. **RECORD** in the Security Shift Supervisor's log, a chronological history of significant events. For example: **[B1228]**

1. Briefing and dispatch of Security Representatives to the Operational Support Center (that is, details of briefing and time of dispatch).
2. Significant changes or trends (for example, changes in emergency classification).
3. Task requests and completion information.
4. Major decisions (for example, release of site personnel, issue of KI).
5. Other significant events affecting Security operations.

NOTE

Nuclear Security operations supports many functions. As many people as possible are to be used to accomplish actions in parallel, rather than one after the other.

The Control Room calls Nuclear Security when personnel recall has been initiated. The Control Room indicates which recall system was used for recall.

Signs referred to in step 6.2.1 are to be kept in the Secondary Alarm Station.

6.2. Operation

NOTE

The actions in Subsection 6.2, Operation may be performed in any order and only appropriate actions implemented considering the situation.

6.2.1. **IF** a Site Area Emergency or General Emergency has been declared and personnel assembly has not been performed, **THEN ALLOW** personnel exiting the Protected Area to go through the Protected Area exit radiation monitors without stopping. **[B1226]**

WARNING

These tasks may be skipped during a back shift security event, if security officers are occupied with defensive actions. **[B1230]**

1. **POST** signs on the radiation monitors to facilitate personnel leaving the Protected Area. **[B1226]**

2. **REMOVE** any signs on the monitors that conflict with this action. **[B1226]**

6.2.2. **RECORD** time in the appropriate Security Logs that personnel recall was initiated by Control Room.

1. **IF** call is *not* received within about 15 minutes of the declaration of the emergency, **THEN INITIATE** call to the Control Room (ext. 5203 or 5204) for this purpose.

2. **IF** ERONs is functioning as expected, **THEN PROCEED** to step 6.2.3

3. **IF** ERONs (primary and backup) both fail, **THEN INITIATE** ad hoc phone tree call up using ERO Recall Roster as last order back-up. **[B1230]**

NOTE

Roster copies are kept in the Security ERPIP document distribution locations only; 2nd Floor NSF Nuclear Security Section administrative office, Security Shift Supervisors' office, and Secondary Alarm Station.

a. **NOTIFY** Shift Manager that manual ad hoc phone calling is in effect.

b. **INFORM** the following Emergency Response Facility Directors that the primary and backup notification systems are inoperable.

- Operational Support Center Directors
- Technical Support Center Directors
- Emergency Operations Facility Directors
- Emergency Directors/Recovery Managers
- Corporate Communications Directors
- Joint Information Center Directors.

c. **INSTRUCT** the Emergency Response Facility Directors to initiate recalling the ERO using the CCNPP – Emergency Organization Recall list in their ERPIP manual.

d. **NOTIFY** additional ERO personnel (as time permits) while ERF Directors are enroute to the ERFs, to assist the Directors in ad hoc staffing.

e. **CONTINUE** to assist in ad hoc staffing (as time permits) until ERF Directors verify that staffing is complete.

6.2.3. **ACCOUNT** for personnel reporting to Nuclear Security Facility using the Nuclear Security Facility roster.

WARNING

During a Security event, the duty officer may be engaged in defensive response and will not be dispatched to the Operation Support Center. These tasks will be accomplished as a result of defensive deployment by other means as is appropriate to the situation. **[B1230]**

6.2.4. **BRIEF** and **DISPATCH** a Security Representative to Operational Support Center. Briefing should include the following: **[B1228] [B1229]**

1. Maintaining accountability of Nuclear Security Officers responding to the event including tracking. **[B1229]**

2. Consulting with Radiation Protection Director concerning movements of Nuclear Security Officers once an Alert level emergency or higher has been declared to prevent undue radiation exposure to personnel and violation of ALARA principles. **[B1229]**

3. Notification to the Radiation Protection Director of changes in location of Nuclear Security Officers. **[B1229]**

4. Maintaining a chronological history of significant events in the Operational Support Center Log. For example: **[B1228]**

   a. Briefing and dispatch of Nuclear Security Officers (that is, details of briefing and time of dispatch).

   b. Significant changes or trends (for example, changes in emergency classification).

   c. Task request and completion information (for example, dispatch of Nuclear Security Officers at the request of ERO Directors).

   d. Major decisions (for example, release of site personnel, issue of KI).

   e. Other significant events affecting Security operations in the Operational Support Center.

WARNING

The nature of the emergency (for example Security Events, Fire, Natural Phenomena, Other Hazards) is to be taken into consideration in determining if people can be assembled and accounted for in the normal assembly areas. The release of personnel from alternate assembly areas that may require alternate egress routes is to be considered. **[B1230]**

6.2.5. **ESTABLISH** Access Control Point on access road(s). At Access Control Point:

1. **ADMIT** expected emergency vehicles.

2. **STOP** non-emergency vehicles.

   a. **INFORM** plant workers that personnel assembly/accountability is in effect and to report directly to assembly areas.

NOTE

NRC Incident Response Team (20 ± people) can be expected at Site Area Emergency and General Emergency (response time is about 3 hours). Security Coordinator or Operational Support Center-Director are to be contacted for access instructions.

   b. **DENY** access to plant visitors unless authorized by the Operational Support Center Director, Interim Emergency Director or TSC Manager.

3. **IF** plant evacuation is ordered by the TSC Manager through the Operational Support Center Director, **THEN PROVIDE** recommended actions for evacuation of the site.

   a. **CONSIDER** passability of egress routes, alternate egress routes, removal of vehicle barriers and need to coordinate with county government. **[B1230]**

4. **ADMIT** only Emergency Response Organization personnel unless entry is authorized by Operational Support Center Director, Interim Emergency Director or Plant General Manager.

   a. **RECORD** name and destination of personnel granted access on Attachment 1, Access Control Point Personnel Access.

6.2.6. **EXECUTE** personnel assembly/accountability according to Attachment 2, Personnel Assembly/Accountability.

6.2.7. **UNLOCK** emergency equipment in Nuclear Security Facility.

6.2.8. **SEARCH** for missing persons.

6.2.9. **CONTROL** Protected Area access and egress:

1. **ADMIT** ONLY Emergency Response Organization personnel unless cleared by Operational Support Center Director, Interim Emergency Director, or TSC Manager.

2. **WAIVE** expected emergency vehicle searches after approval of CCNPP Shift Manager with concurrence of the CCNPP Security Shift Supervisor.

3. **ESCORT** all emergency vehicles.

4. **WHEN** multiple emergency vehicles are needed immediately to respond to an emergency, **THEN REQUEST** suspension of safeguards according to 10 CFR 50.54(x) or 50.54(y).

6.2.10. **ASSIST** other emergency workers whenever possible.

6.2.11. **IF** the Nuclear Security Facility becomes a radiologically controlled area, **THEN CONTACT** the Radiation Protection Director for further guidance.

1. **MINIMIZE** building staffing according to ALARA principals.

2. **REVIEW** Attachment 3, Nuclear Security Facility Occupancy, as a Radiologically Controlled Area.

3. **RECORD** team activity and information in Operational Support Center Emergency Actions Log or a Security log or on any paper.

6.3. **Deactivation**

6.3.1. **ON** notification of event termination, **THEN:**

1. **COLLECT** records and documentation generated during the event.

2. **RETURN** equipment and unused material to the designated storage locations and dispose of trash in the appropriate locations.

3. **FORWARD** records and documentation generated from the use of Emergency Response Plan Implementation Procedures to the Director – Emergency Preparedness.

   - Main body of this procedure
   - Attachment 1, Access Control Point Personnel Access
   - Attachment 2, Personnel Assembly/Accountability
   - Attachment 5, Missing Persons
   - ERO Recall Roster, if used for recall purposes

7.0 POST-PERFORMANCE ACTIVITIES

7.1. **CONSIDER REMOVING** posted signs on the radiation monitors that facilitated personnel leaving the Protected Area through the Protected Area exit radiation monitors without stopping.

7.1.1. **RETURN** signs to their storage locations in the Secondary Alarm Station.

7.1.2. **RESTORE** any signs removed from the Protected Area exit radiation monitors.

8.0 BASES

[B1226] IR3-012-007 (IR199700399) add instructions pertaining to radiation monitoring portals use during a Site and General Emergencies.

[B1228] IR3-010-625 (IR200001117) enhance detail of ERPIP log taking instructions.

[B1229] IR3-034-607 (IR200100684) provide specific steps to ensure the Security Representative assigned to the Operational Support Center communicates and coordinates the movements of Nuclear Security Officers with the Radiation Protection Director and the Onsite Monitoring Team Leader. This instruction is provided to prevent undue exposure of Nuclear Security Officers due to changing radiological conditions at an Alert event or higher.

[B1230] NRC Letter, Samuel J. Collins to Charles Cruse, Issuance of Orders for Interim Safeguards and Security Compensatory Measure for Calvert Cliffs Nuclear Power Plants Units 1 and 2, February 25, 2002 (ICM order B.5.d).

9.0 RECORDS

9.1. Records generated by this procedure may be permanent, non-permanent, or lifetime radiological records depending on the circumstances under which they are generated. Records shall be captured and controlled as follows:

9.1.1. During an actual event as described in the purpose statement of this procedure, records shall be considered **permanent** records and submitted to the Emergency Preparedness Unit for final disposition according to CNG-PR-3.01-1000.

- Main body of this procedure.
- Attachment 1, Access Control Point Personnel Access
- Attachment 2, Personnel Assembly/Accountability
- Attachment 5, Missing Persons
- ERO Recall Roster, if used for recall purposes

9.1.2. During an actual event as described in the purpose statement of this procedure, dosimetry records, that is, any dose-related record including access history records, are considered **radiological lifetime records** and are to be handled and maintained according to standard practices and unit procedures.

None

9.1.3. During a drill or exercise, records generated shall be considered **non-permanent** records and submitted to the Emergency Preparedness Unit for evaluation and retention according to CNG-PR-3.01-1000.

- Main body of this procedure.
- Attachment 1, Access Control Point Personnel Access
- Attachment 2, Personnel Assembly/Accountability
- Attachment 5, Missing Persons
- ERO Recall Roster, if used for recall purposes

ATTACHMENT 1, Access Control Point Personnel Access

NAME	DESTINATION	TIME	
		IN	OUT

FORWARD completed form to Emergency Preparedness at event termination.

ATTACHMENT 2, Personnel Assembly/Accountability

A. Personnel Assembly

NOTE

Signs referred to in step A.1 are kept in the Secondary Alarm Station.

1. **IF** a Site Area Emergency or General Emergency has been declared **AND** personnel assembly has not been performed, **THEN ALLOW** personnel exiting the Protected Area to go through the Protected Area exit radiation monitors without stopping. **[B1226]**

   a. **POST** signs on the radiation monitors to facilitate personnel leaving the Protected Area. **[B1226]**

   b. **REMOVE** any signs on the monitors that conflict with this action. **[B1226]**

2. **PASS** the word (using any means appropriate) and **ENSURE** site personnel are aware that assembly has been ordered and are responding:

   a. Welcome Center:

      (1) **INSTRUCT** visitors to leave the site.

      (2) **CLOSE** the facilities.

   b. Camp Conoy/Eagles Den:

      (1) **INSTRUCT** visitors to leave the site.

      (2) **CLOSE** the facilities.

   c. Farm plots, waterfront, laydown area, firing range, Farm Demonstration Building, meteorological tower, Lake Davies, and so forth:

      (1) **INSTRUCT** visitors to leave the site.

      (2) **INSTRUCT** others (CENG; contractors; and so forth) to execute site assembly plans according to Attachment 4, Site Assembly Areas.

   d. Office Training Facility, Nuclear Engineering Facility, Nuclear Office Facility, Materials Processing Facility, Warehouses:

      (1) **INFORM** people that personnel assembly has been ordered.

Attachment 2, Personnel Assembly/Accountability (Continued)

NOTE

The desired goal is to ascertain the names of missing people within 30 minutes of a Site Area Emergency declaration or higher. In anticipation of a Site Area or General Emergency, personnel are assembled at an Alert level emergency.

3. **WHEN** about 25 minutes has elapsed since the Alert or higher emergency was declared **OR** the number of people exiting the Protected Area is nearing zero, whichever occurs first, **THEN DECLARE** personnel assembly complete and **RECORD** time personnel assembly declared complete:_____.

B. Personnel Accountability

1. **ASCERTAIN** the names of missing people in the Protected Area:

a. **OBTAIN** an All Personnel in the Protected Area Report from the security computer.

b. **RECEIVE/OBTAIN** accountability from Protected Area assembly areas:

Control Room _____ (time)

SSB Cafeteria (eight teams assemble in this location): _____ (time)

_____ Operations Team
_____ First Aid Team
_____ Survey Team
_____ Chemistry Team
_____ Mechanical Team
_____ Electrical Team
_____ Instrument and Controls Team

Technical Support Center _____ (time)

Operational Support Center _____ (time)

c. **COMPARE** personnel reported as absent from the Protected Area assembly areas to the security computer printout.

(1) **IF** a person reported absent is in the Protected Area, **THEN RECORD** this person as missing On Attachment 5, Missing Persons.

Attachment 2, Personnel Assembly/Accountability (Continued)

(2) **IF** a person reported absent is not in the Protected Area, **THEN CONSIDER** the person not missing in the Protected Area.

NOTE

Personnel who belong in the Protected Area are annotated on the security computer printout by an "X" in the ERP field.

d. **CHECK** the security computer printout for people that are inside the Protected Area that do not belong there.

(1) **IF** a person is inside the Protected Area that does not belong there, **THEN RECORD** the person as missing on Attachment 5, Missing Persons.

2. **ASCERTAIN** the names of missing people that are outside the Protected Area:

NOTE

"Cliff Notes" Voice mailbox is used for this procedure.

CAUTION

Accessing mailbox administrative or password control options may result in changes to administrative options or passwords. This may prevent messages from being retrieved during an emergency.

a. **GO TO** Emergency Response voice mailbox telephone (Secondary Alarm Station).

Attachment 2, Personnel Assembly/Accountability (Continued)

NOTE

Only one telephone can be used to retrieve messages.

A flashing "MESSAGE WAITING" LED indicates new messages have been recorded.

b. **IF** "MESSAGE WAITING" LED is flashing, **THEN RETRIEVE** new messages:

NOTE

A black indicator arrow appears in the display window next to the mailbox access button when the mailbox is in use at the other location.

Telephones are equipped with "Hands Free" feature. This allows user to listen to calls without picking up handset.

(1) **PRESS** "ACCOUNT MAILBOX" button for access to mailbox.

(2) **IF** necessary, **THEN ADJUST** speaker volume.

(3) At the prompt: "PLEASE ENTER YOUR PASSWORD," **ENTER** 365814.

(4) **PRESS** "1" to listen to new messages.

(a) **PRESS** "9" to increase playback volume.

(5) **RECORD** names of any persons reported as missing in recorded message on Attachment 5, Missing Persons.

(a) To rewind message 10 seconds, **PRESS** "1."

(b) To playback entire message, **PRESS** "11."

(c) To pause/resume message, **PRESS** "2."

(d) To fast-forward message 10 seconds, **PRESS** "3."

(e) To advance to the end of message, **PRESS** "33."

(f) To slow-down message playback, **PRESS** "4."

(g) To speed-up message playback, **PRESS** "6."

Attachment 2, Personnel Assembly/Accountability (Continued)

(6) At the prompt: "END OF MESSAGE ...", **PRESS** "9" to save message.

(7) At the prompt: "END OF NEW MESSAGES ...", **PRESS** "*"

(8) **PRESS** "RLS" to terminate call.

c. **REPEAT** step B.2. of this attachment as necessary to retrieve additional messages.

3. **RECORD** time personnel accountability is complete: _____.

C. Notification Of Missing People

1. **WHEN** the names of missing people have been ascertained, **THEN PROVIDE** the number of missing people inside the Protected Area and the number of missing people outside the Protected Area to the following individuals:

- Operational Support Center Director in Operational Support Center.
- TSC Manager in Technical Support Center.
- Emergency Director/Recovery Manager in Emergency Operations Facility.

ATTACHMENT 3, Nuclear Security Facility Occupancy as a Radiologically Controlled Area

CAUTION

Failure to consult the Radiation Protection Director during a radiological emergency may result in undue radiation exposure.

A. Nuclear Security Facility Occupancy as a Radiologically Controlled Area

1. **MINIMIZE** Nuclear Security Facility staffing.

2. **IF** conditions make building occupancy impractical, **THEN**:

   a. **ENSURE** perimeter portals are locked and alarmed.

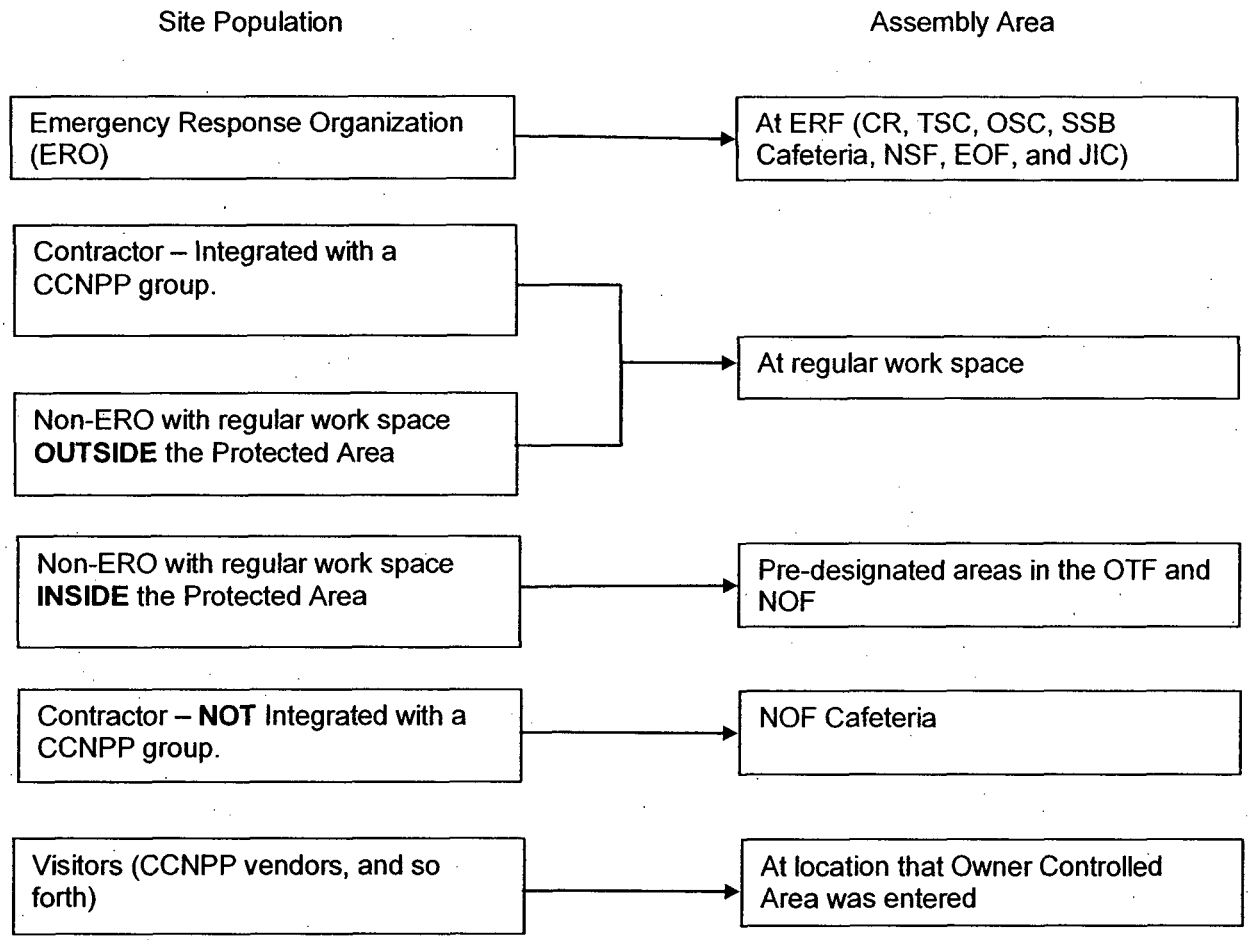
   b. **SECURE** building (if appropriate).

   c. **GO TO** radiologically uncontrolled area or lower radiation controlled area as directed by Health Physics personnel.

If relocating then take the following items, including but not limited to:

- Contingency Locker
- Contingency Ammo Locker
- Master Key Cabinet
- 12 portable radios
- 2 banks of radio chargers
- Other equipment and supplies as needed to support Security operations

ATTACHMENT 4, Site Assembly Areas



ATTACHMENT 5, Missing Persons

NAME	Pertinent Information (for example, Control Number, Unit Name, Last Known Whereabouts, and so forth)
FORWARD completed form to Emergency Preparedness at event termination.	

Calvert Cliffs Nuclear Power Plant

Emergency Response Plan Implementation Procedure

Core Damage Assessment

ERPIP 800

Revision 1

RECORD OF REVISION

REVISION	CHANGE	SUMMARY
1	02	Attachment 1 – typo Major Cladding Failure "I-313" should be "I-131"

CORE DAMAGE ASSESSMENT

RESPONSIBLE INDIVIDUAL: Chemistry Director
Reactor Engineers

1. DISCUSSION

A. Core Damage Assessment (CDA) ERPIPs are used to determine the extent of core damage after a reactor accident has occurred.

1. The extent of core damage determined by these ERPIPs is resolved into four categories:

   a. No Fuel Damage

   b. Cladding Failure

   c. Fuel Pellet Overheating

   d. Fuel Pellet Melt

2. Cladding failure, fuel pellet overheating and fuel pellet melt are subdivided into three categories:

   a. Initial

   b. Intermediate

   c. Major

3. The resulting ten categories of core damage are listed on Attachment 1, Core Damage Characteristics.

B. Four Core Damage Assessment ERPIPs evaluate the phenomena associated with the major categories of core damage. They enable the user to define core damage in terms of the ten categories of Attachment 1.

1. Because heat production distribution in the core is not uniform, various core regions may experience more than one category of damage. Therefore, use of more than one Core Damage Assessment ERPIP is suggested. Considerable engineering judgment must be used before arriving at the final core damage determination.

1. DISCUSSION (Continued)

2. The four Core Damage Assessment ERPIPs are:

   a. ERPIP-801, Core Damage Assessment Using Containment Radiation Dose Rates.

   b. ERPIP-802, Core Damage Assessment Using Core Exit Thermocouples.

   c. ERPIP-803, Core Damage Assessment Using Hydrogen.

   d. ERPIP-804, Core Damage Assessment Using Radiological Analysis of Samples.

3. Because of the time required for these evaluations, use of the ERPIPs should be limited to stable post-accident plant conditions.

2. EXAMPLE CORE DAMAGE SEQUENCE

The following example core damage sequence includes a brief description of core damage phenomena and use of the four Core Damage Assessment ERPIPs. Refer to Attachment 1.

A. If RCS water inventory is sufficient to cover the core, decay heat will be removed by forced convection, natural circulation or reflux boiling. Core damage will result, as described below, if Reactor Vessel water level decreases below the active fuel elevation in the top of the core.

B. Core uncovery indicators include:

   1. Core Exit Thermocouples - increase above T_{sat} for existing RCS Pressure.

   2. Incore Rhodium Neutron Detectors - indicate an output with reactor known to be shutdown.

   3. Excore Nuclear Instruments - indicate erratic or increasing values with reactor known to be shutdown.

C. Core uncovery is followed first by clad burst due to thermal overpressurization of gasses in the fuel pins. This burst releases Noble Gases and Iodines from the pins to the RCS and through the leak to Containment. If the core is recovered by Safety Injection, no further damage results. The ERPIPs that apply in this case are:

   1. ERPIP-801, CDA Using Containment Radiation Dose Rates - Yields the quickest result. This method however is not as accurate as Core Exit Thermocouples or Radiological Analysis of Samples.

   2. ERPIP-802, CDA Using Core Exit Thermocouples - Used to predict percentage of fuel pins damaged by bursting. Medium time requirements.

2. EXAMPLE CORE DAMAGE SEQUENCE (Continued)

3. ERPIP-804, CDA Using Radiological Analysis of Samples. This procedure requires the most time. This method is probably the most accurate.

D. If core uncovery continues, the next phenomenon experienced is fuel pellet overheating. High fuel pellet temperatures cause two effects:

1. Release of fission fragments from the ceramic fuel pellet matrix, first from grain boundaries, then from the grains themselves.

2. Reaction of Zirconium in clad with steam ($Zr + 2H_20 - Zr0_2 + 2H_2$). This results in clad embrittlement and possible fuel pellet dislocation.

E. If the core is recovered by Safety Injection, fuel pellet overheating and $Zr\text{-}H_20$ reaction stop. Quenching due to core covering may cause fuel pellet dislocation due to cladding thermal shock.

The ERPIPs that apply in this case are:

1. ERPIP-801, CDA Using Containment Radiation Dose Rates this is the quickest procedure.

2. ERPIP-803, CDA Using Hydrogen. This procedure can predict small amounts of clad burst but primarily predicts percent of pins damaged by embrittlement. Medium time required.

3. ERPIP-804, CDA Using Radiological Analysis of Samples. This procedure requires the most time.

F. If core uncovery continues, fuel pellet melt is the next effect. The result is release of a class of fission fragments otherwise bound in the ceramic pellet matrix. If the core is recovered no further damage results, but thermal shock will cause some core material dislocation. The ERPIP that is used in this case is ERPIP-804, CDA Using Radiological Analysis of Samples.

G. It is likely that a core uncovery sequence will result in a combination of two or more of the phenomena described. Therefore, engineering judgment must be exercised in the core damage evaluation process. The results obtained from each ERPIP should be combined to provide a "best estimate."

ATTACHMENT 1
CORE DAMAGE CHARACTERISTICS

NRC Fuel Damage Category	RADIOLOGICAL CHARACTERISTICS			CLAD DAMAGE CHARACTERISTICS						CONTAINMENT	
	Release Mech-anism	Release Source	Character-istic Isotope	% Source Inventory Released	Temp. Range (°F)	Damage Mech-anism	Character-istic Measure-ment	Measure-ment Range	% Damaged Rods	% Source Inventory Released to Ctmt.	Fission Product Distri-bution in Ctm.
1. No Fuel Damage	Halogen Spiking & Tramp Uranium	Gas	I 131 Cs 137 Rb 88	Less Than 1	Approx. 750	None	—	—	Less Than 1	Less Than 1	Airborne
2. Initial Cladding Failure	Cladding Burst	Gap	Xe 131m Xe133 I 131 I 133	Less Than 10	1200-1800	Rupture Due To Gas Gap Over Pres-surization	Maximum Core Exit Thermo-Couple Temp.	Less Than 1550°F	Less Than 10	Less Than 10	
3. Intermediate Cladding Failure	Gas Gap Diffusion			10-50				Less Than 1700°F	10-50	10-50	
4. Major Cladding Failure				Greater Than 50				Less Than approx. 2300°F Less Than Approx. 2% oxidation	Greater Than 50	Greater Than 50	
5. Initial Fuel Pellet Overheating	Grain Boundary Diffusion	Fuel	Cs 134 Rb 88 Te 132 Te 129 Ba 140 La 140 La 142 Pr 144	Less Than 10	1800-3350	Loss of Structural Integrity Due To Fuel Clad Oxidation	Amount of Hydro-gen Gas Produced (Equiva-lent to % oxidation of core)	Less Than 3% oxidation	Less Than 10	Less Than 10	Airborne: 100% NG 50% Hal. Plateout 25% Hal. 1% Solids Water: 25% Hal.
6. Intermediate Fuel Pellet Overheating				10-50				Less Than 18% oxidation	10-50	10-50	
7. Major Fuel Pellet Overheating	Diffusional Release from UO_2 grains			Greater Than 50				Less Than Approx. 65% oxidation	Greater Than 50	Greater Than 50	
8. Initial Fuel Pellet Melt	Escape From Molten Fuel	Pellet		Less Than 10							
9. Intermediate Fuel Pellet Melt				10-50							
10. Major Fuel Pellet Melt				Greater Than 50							

Constellation Energy

Calvert Cliffs Nuclear Power Plant
TECHNICAL PROCEDURE

ERPIP-821

ACCIDENTAL RADIOACTIVITY RELEASE MONITORING AND SAMPLING METHODS

Revision 00600

Safety Related

REFERENCE USE

Applicable To:

- **Calvert Cliffs Nuclear Power Plant**

Approval Authority:
Plant General Manager

SUMMARY OF ALTERATIONS

Revision	Change	Summary of Revision or Change
		1.0 – added Interim Radiological Assessment Director
		2.0 – added Interim Radiological Assessment Director
		2.1.1 – added Interim Radiological Assessment Director
		6.2.1.1.a – added "**THEN GO** to step 6.2.1.2, Backup Fuel Handling Incident Monitoring for a fuel handling incident"
		6.2.1.2 – added new step to update alternative monitoring methodology for fuel handling incidents when WRNGM is out of service. Updated step references accordingly.
		Attachment 1 page 2 of 5 – Updated Unit 1 and Unit 2 default vent flow rate (ESP199700003 / CR-2009-006573)
		Attachment 1 – added page for Back up Fuel Handling Incident Monitoring data entry (CA07296)
		Attachment 4 page 1 of 4 - Updated Unit 1 and Unit 2 default vent flow rate (ESP199700003 / CR-2009-006573)

TABLE OF CONTENTS

1.0 PURPOSE

This procedure provides emergency response instructions for the Radiological Assessment Director, Radiological Assessment Specialist, and Interim Radiological Assessment Director (Shift Chemistry Technician) when responding during the following events:

- Radiological Event
- Unusual Event
- Alert
- Site Area Emergency
- General Emergency

2.0 APPLICABILITY/SCOPE

This procedure applies to the Radiological Assessment Director, Radiological Assessment Specialist, and/or Interim Radiological Assessment Director (Shift Chemistry Technician).

2.1. Responsibilities

2.1.1. The Radiological Assessment Director, Radiological Assessment Specialist, and/or Interim Radiological Assessment Director (Shift Chemistry Technician) shall:

1. Report to the General Supervisor-Nuclear Plant Operations in the Control Room and the Emergency Director in the Emergency Operations Facility.

2. Perform required tasks and evolutions.

3.0 REFERENCES AND DEFINITIONS

3.1. Developmental References

3.1.1. NUREG 0654, Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants

3.1.2. 10 CFR 20, Standard for Protection Against Radiation

3.1.3. 10 CFR 50.47, Emergency Plans

3.1.4. 10 CFR 50 Appendix E to Part 50, Emergency Planning and Preparedness for Production and Utilization Facilities

3.1.5. Calvert Cliffs Nuclear Power Plant Emergency Response Plan

3.1.6. PR-1-101, Preparation and Control of Calvert Cliffs Technical Procedures

3.1.7. PR-1-103, Use of Procedures

3.1.8. Technical Procedures Writer's Manual

3.2. **Performance References**

None

3.3. **Definitions**

None

4.0 PREREQUISITES

4.1. **Training and Qualifications**

4.1.1. Personnel performing this procedure shall be qualified on the tasks or activities contained in this procedure.

5.0 PRECAUTIONS

5.1. Declared pregnant women and minors are not authorized to perform emergency functions.

6.0 PERFORMANCE

6.1. **Activation**

NOTE

Determining the exact relationship between detector response and specific isotope mixture released per given time, requires grab sample analysis.

Monitor readings may be tracked with electronic copies, on forms, plain paper, or status boards.

6.1.1. **IF** release point is via the Main Vent, **THEN GO TO** step 6.2.1.

6.1.2. **IF** release point is via the Containment, **THEN GO TO** step 6.2.2.

6.1.3. **IF** release point is via Secondary System, **THEN GO TO** step 6.2.3.

6.1.4. **IF** none of the previously mentioned RMSs are available, **THEN GO TO** step 6.2.4.

6.2. Operation

6.2.1. Main Vent Monitoring

NOTE

Monitoring methods are listed in preferred use order.

1. Wide Range Noble Gas Monitor (WRNGM)

   a. **IF** the Unit 1 Wide Range Noble Gas Monitor (WRNGM) is not in service,
   THEN GO to step 6.2.1.2, Backup Fuel Handling Incident Monitoring for a fuel handling incident **OR** step 6.2.1.3, Main Vent Gaseous Monitor for other accident types.

   b. **IF** the Unit 2 Wide Range Noble Gas Monitor (WRNGM) is not in service,
   THEN GO to step 6.2.1.3, Main Vent Gaseous Monitor.

   c. **IF** the Wide Range Noble Gas Monitor (WRNGM) is in service,
   THEN:

      (1) **READ** the Wide Range Noble Gas Monitor.

      (2) **RECORD** data and calculations on Attachment 1, Radioactivity Release Rate Estimate Based on Main Vent Monitor Readings, Page 1.

      (3) **REPEAT** as release status changes.

2. Backup Fuel Handling Incident Monitoring

NOTE

The backup fuel handling incident monitoring method relies on hand held or mounted survey equipment in the Unit 1 69' Fan room to monitor an incident in the spent fuel pool. See Attachment 1, page 5 for backup SFP monitor placement.

   a. **READ** radiation survey instrument at the Unit 1 69' Fan room.

   b. **RECORD** the survey results and time since the incident on Attachment 1, page 5, Radioactivity Release Rate Estimate Based on Main Vent Monitor Readings.

   c. **PERFORM** calculations as necessary to determine current release rate using Attachment 1.

   d. **REPEAT** as release status changes.

3. Main Vent Gaseous Monitor

NOTE

The Main Vent Gaseous Monitor constitutes a low range back-up monitoring method for the Wide Range Noble Gas Monitor.

a. **IF** the Main Vent Gaseous Monitor is not in service, **THEN GO TO** step 6.2.1.4, Auxiliary Building Gaseous Monitor.

b. **IF** the Main Vent Gaseous Monitor is in service, **THEN:**

(1) **READ** the Main Vent Gaseous Monitor.

(2) **RECORD** data and calculations on Attachment 1, Radioactivity Release Rate Estimate Based on Main Vent Monitor Readings, Page 2.

(3) **SELECT** release coefficient for accident type.

(4) **REPEAT** as release status changes.

4. Auxiliary Building Gaseous Monitor

NOTE

The Auxiliary Building Gaseous Monitor constitutes a low range back-up monitoring method for the Wide Range Noble Gas Monitor.

a. **IF** the Auxiliary Building Gaseous Monitor is not in service, **THEN GO TO** Step 6.2.1.5, Hand Held Radiation Instrument Monitoring.

b. **IF** the Auxiliary Building Gaseous Monitor is in service, **THEN:**

(1) **READ** the selected Auxiliary Building Gaseous Monitor upstream of the Main Vent Gaseous Monitor.

(2) **RECORD** data and calculations on Attachment 1, Radioactivity Release Rate Estimate Based on Main Vent Monitor Readings, Page 3.

(3) **SELECT** response factor for release condition.

(4) **REPEAT** as release status changes.

5. Hand Held Radiation Instrument Monitoring

> **NOTE**
>
> Marks 10 meters from the Main Vents are painted on the Auxiliary Building roof.
>
> Hand held radiation instrument monitoring constitutes a high range back-up monitoring method for the Wide Range Noble Gas Monitor.

a. **READ** portable hand held radiation instrument (SHP 310, Smartpole etc.) on the Auxiliary Building roof 10 meters from the Main Vent. **[B-1]**

b. **RECORD** data and calculations on Attachment 1, Radioactivity Release Rate Estimate Based on Main Vent Monitor Readings, Page 4.

c. **REPEAT** as release status changes.

6.2.2. **Containment Monitoring**

> **NOTE**
>
> Monitoring methods are listed in preferred use order.

1. Containment High Range Radiation Monitor (CHRRM)

a. **IF** the Containment High Range Radiation Monitor is not in service, **THEN GO TO** step 6.2.2.2, Hand Held Radiation Instrument Monitoring.

b. **IF** the Containment High Range Radiation Monitor is in service, **THEN:**

(1) **READ** the Containment High Range Radiation Monitor (CHRRM).

(2) **RECORD** data and calculations on Attachment 2, Radioactive Release Estimate Based on Containment Radiation Readings, Page 1.

(3) **SELECT** release coefficient for accident type.

6.2.2.1 (Continued)

(4) **SELECT** leak rate for release condition.

(5) **REPEAT** as release status changes.

2. Hand Held Radiation Instrument Monitoring

NOTE

This is a back-up monitoring method for the Containment High Range Radiation Monitor.

a. **READ** hand held radiation monitor (SHP 360. Smartpole etc.) on contact with upper (e.g., 69 foot elevation) Containment wall. **[B-1]**

b. **RECORD** data and calculations on Attachment 2, Page 2, Radioactive Release Estimate Based on Containment Radiation Readings.

c. **SELECT** release coefficient for accident type.

d. **SELECT** leak rate for release condition.

e. **REPEAT** as release status changes.

6.2.3. **Main Steam System Monitoring**

NOTE

Monitoring methods are listed in preferred use order.

1. Main Steam System Radiation Monitor (MSSRM)

a. **IF** the Main Steam System Radiation Monitor (MSSRM) is not in service, **THEN GO TO** Step 6.2.3.2, Hand Held Radiation Instrument Monitoring.

b. **IF** the Main Steam System Radiation Monitor (MSSRM) is in service, **THEN:**

(1) **READ** the Main Steam System Radiation Monitor (MSSRM).

(2) **RECORD** data and calculations on Attachment 3, Page 1, Radioactivity Release Rate Estimate Based on Main Steam System Radiation Readings.

6.2.3 (Continued)

(3) **REPEAT** as release status changes.

2. Hand Held Radiation Instrument Monitoring

NOTE

This is a back-up monitoring method for the Main Steam System Radiation Monitor (MSSRM).

When the MSIV's are open the condenser air removal system dumps noble gases to the Main Vent. The iodines remain in the condensate. In this instance, preference is to use Main Vent monitoring methods.

a. **IF** the Main Steam System Isolation Valves (MSIVs) are open, **THEN GO TO** step 6.2.1, Main Vent Monitoring.

b. **IF** the Main Steam System Isolation Valves (MSIVs) are closed, **THEN:**

(1) **OBTAIN** a hand held radiation monitor (SHP 360, Smartpole etc.) reading on contact with Main Steam Line Drains in accordance with Attachment 5, Alternate Method of Monitoring Main Steam System With MSIV's Closed, to this procedure. **[B-1]**

(2) **RECORD** data and calculations on Attachment 3, Radioactivity Release Rate Estimate Based on Main Steam System Radiation Readings, Page 2.

(3) **SELECT** release coefficient for accident type.

(4) **SELECT** leak rate for release condition.

(5) **REPEAT** as release status changes.

6.2.4. **In-Plant Sampling**

1. **OBTAIN** a sample from the Main Vent effluent, containment atmosphere, Reactor Coolant System, or Main Steam System.

a. **RECORD** data and calculations on Attachment 4, Radioactive Release Rate Estimate Based on In-Plant Sampling, as appropriate.

b. **SELECT** flow rates, leak rates, conversion factors, and partition factors as appropriate.

c. **REPEAT** as status changes.

6.3. **Deactivation**

6.3.1. Upon notification of event termination:

1. **COLLECT** documentation.
2. **ROUTE** documentation to the Director-Emergency Preparedness.
3. **ENSURE** all equipment is turned off.
4. **RETURN** equipment to the equipment cabinet.

7.0 POST-PERFORMANCE ACTIVITIES

None

8.0 BASES

[B-1] IR3-051-226, AIT IR200001056, replace aging ERO radiological survey instruments.

9.0 RECORDS

9.1. Records generated by this procedure may be permanent, non-permanent, or lifetime radiological records depending on the circumstances under which they are generated. Records shall be captured and controlled as follows:

9.1.1. During an actual event as described in the purpose statement of this procedure, records shall be considered **permanent** records and submitted to the Emergency Preparedness Unit for final disposition according to CNG-PR-3.01-1000.

- None

9.1.2. During an actual event as described in the purpose statement of this procedure, dosimetry records, that is, any dose-related record including access history records, are considered **radiological lifetime records** and are to be handled and maintained according to standard practices and unit procedures.

- Attachment 1, Radioactive Release Rate estimate Based on Main Vent Monitoring Readings
- Attachment 2, Radioactivity Release Rate Estimate Based on Containment Radiation Readings
- Attachment 3, Radioactivity Release Rate Estimate Based on Main Steam System Radiation Readings
- Attachment 4, Radioactivity Release Rate Estimate Based on In-Plant Sampling

9.1.3. During a drill or exercise, records generated shall be considered **non-permanent** records and submitted to the Emergency Preparedness Unit for evaluation and retention according to CNG-PR-3.01-1000.

- Attachment 1, Radioactive Release Rate estimate Based on Main Vent Monitoring Readings
- Attachment 2, Radioactivity Release Rate Estimate Based on Containment Radiation Readings
- Attachment 3, Radioactivity Release Rate Estimate Based on Main Steam System Radiation Readings
- Attachment 4, Radioactivity Release Rate Estimate Based on In-Plant Sampling

Attachment 1, RADIOACTIVITY RELEASE RATE ESTIMATE BASED ON MAIN VENT MONITOR READINGS

WIDE RANGE NOBLE GAS MONITOR

Wide Range Monitor Reading		Release Rate
1-RIC 5415 U1	=	_____ µCi/s
2-RIC-5415 U2	=	_____ µCi/s
Total Release Rate	=	_____ µCi/s

Date _____

Time _____

FORWARD completed record to Director-Emergency Preparedness at event termination.

Attachment 1, RADIOACTIVITY RELEASE RATE ESTIMATE BASED ON MAIN VENT MONITOR READINGS (Continued)

MAIN VENT GASEOUS MONITOR

Release Coefficient	x x	1-RE-5415 (cpm) 2-RE-5415 (cpm)	x x	U1 Vent flow (cfm) U2 Vent flow (cfm)	= =	U1 Release rate U2 Release rate
_____	x	_____ cpm	x	120,000 cfm	=	_____ µCi/s
_____	x	_____ cpm	x	90,500 cfm	=	_____ µCi/s
				Total Release Rate	=	_____ µCi/s

ACCIDENT TYPE			RELEASE COEFFICIENT	
SGTRR	-	S/G tube rupture releasing RCS activity	6.0E-4	(µCi/s)/(cpm)/(cfm)
SGTRG	-	S/G tube rupture releasing gap activity	3.0E-4	(µCi/s)/(cpm)/(cfm)
SGTRC	-	S/G tube rupture releasing core activity	3.0E-4	(µCi/s)/(cpm)/(cfm)
WGDTR	-	Waste Gas Decay Tank Rupture release	1.2E-3	(µCi/s)/(cpm)/(cfm)
FHI	-	Fuel Handling Incident release	1.8E-3	(µCi/s)/(cpm)/(cfm)
LOCAR	-	LOCA releasing RCS activity	6.0E-4	(µCi/s)/(cpm)/(cfm)
LOCAG	-	LOCA releasing gap activity	3.0E-4	(µCi/s)/(cpm)/(cfm)
LOCAC	-	LOCA releasing core activity	3.0E-4	(µCi/s)/(cpm)/(cfm)

Date _____
Time _____
Calculated by _____
*Reviewed by _____

*IRAD will FAX completed worksheet to RAD for review.

FORWARD completed record to Director-Emergency Preparedness at event termination.

Attachment 1, RADIOACTIVITY RELEASE RATE ESTIMATE BASED ON MAIN VENT MONITOR READINGS (Continued)

AUXILIARY BUILDING GASEOUS MONITORS

Monitor	Monitor reading (cpm)	X	Flow rate (cfm)	X	Response Factor	=	Release Rate
RE-_____	_____	X	_____	X	_____	=	_____µCi/s
RE-_____	_____	X	_____	X	_____	=	_____µCi/s
RE-_____	_____	X	_____	X	_____	=	_____µCi/s
RE-_____	_____	X	_____	X	_____	=	_____µCi/s
RE-_____	_____	X	_____	X	_____	=	_____µCi/s
RE-_____	_____	X	_____	X	_____	=	_____µCi/s

MONITOR	IF ACTUAL FLOW (CFM) IS UNKNOWN, USE	RESPONSE FACTOR
RE-1752 Condenser Vac Dischg	must be actual***	4.8E-3*
RE-5140 Waste Process Area	50,000	1.2E-3**
RE-5281 Cntmt Purge Exh.	50,000	1.2E-3**
RE-2191 Gaseous Waste Dischg	must be actual***	1.2E-3**
RE-5406 ECCS Room	3,000	6.0E-4**
RE-5420 Fuel Pool Area	32,000	1.8E-3
RE-5425 Access Control	14,000	6.0E-4**

* Use 4.6E-3 if accident results in release of Gap activity.
** Use 3.0E-4 if accident results in release of Gap activity.
*** Contact Technical Support Center Director or Control Room Operator for values.

Date _____
Time _____
Calculated by _____
****Reviewed by _____

**** IRAD will FAX completed worksheet to RAD for review.

FORWARD completed record to Director-Emergency Preparedness at event termination.

Attachment 1, RADIOACTIVITY RELEASE RATE ESTIMATE BASED ON MAIN VENT MONITOR READINGS (Continued)

PORTABLE HAND HELD RADIATION MONITOR READING 10 METERS FROM MAIN VENT

Unit_____ Main vent_____ (R/h) x (5.0E+5) (µCi/s)/(R/h) =_____µCi/s

Date _____
Time _____
Calculated by _____
*Reviewed by _____

* IRAD will FAX completed worksheet to RAD for review.

FORWARD completed record to Director-Emergency Preparedness at event termination.

Attachment 1, RADIOACTIVITY RELEASE RATE ESTIMATE BASED ON MAIN VENT MONITOR READINGS (Continued)

BACKUP FUEL HANDLING INCIDENT MONITORING

NOTE

The backup Fuel Handling Monitor should be installed on the narrow side (top or bottom) 47"x35" SFP Exhaust Plenum Duct leading to the Main Exhaust Plenum. The detector should not be placed closer than 3' to either end of the horizontal run of this duct. This duct section is located in the SE end of the Unit 1 69' Fan Room between El. 86' and El. 89'.

Spent Fuel Pool (located in the Unit 1 69' Fan Room)

Spent Fuel Pool reading:_____ (mR/h) x (3.91E+5) (µCi/s)/(mR/h)=_____µCi/s

Date _____
Time since the incident_____
Calculated by _____
*Reviewed by _____

* IRAD will FAX completed worksheet to RAD for review.
FORWARD completed record to Director-Emergency Preparedness at event termination.

Attachment 2, RADIOACTIVITY RELEASE RATE ESTIMATE BASED ON CONTAINMENT RADIATION READINGS

CONTAINMENT HIGH RANGE RADIATION MONITOR

Release Coefficient	x x	1-RI-5317A/B 2-RI-5317A/B	x x	U1 leak rate (cm^3/s) U2 leak rate (cm^3/s)	= =	U1 Release rate U2 Release rate
_____	x	_____ R/h	x	_____ cm^3/s	=	_____ µCi/s
_____	x	_____ R/h	x	_____ cm^3/s	=	_____ µCi/s
				Total Release Rate	=	_____ µCi/s

ACCIDENT TYPE	RELEASE COEFFICIENT
LOCAR (LOCA releasing RCS activity)	8.0E-3 (µCi/cm^3)/(R/h)
LOCAG (LOCA releasing gap activity)	3.7E-3 (µCi/cm^3)/(R/h)
LOCAC (LOCA releasing core activity)	3.3E-3 (µCi/cm^3)/(R/h)

LEAK RATE	VALUE
.1% volume per day (Design @ 25 psig)	1.0E+3 cm^3/s
1% volume per day (Design @ 50 psig)	5.8E+3 cm^3/s
10% volume per day (e.g. <6-$inch^2$ hole)	6.6E+4 cm^3/s
100% volume per day (e.g. 6-8-$inch^2$ hole)	6.6E+5 cm^3/s
100% volume per hour (e.g. 1-$foot^2$ hole)	1.6E+7 cm^3/s

Date _____
Time _____
Calculated by _____
*Reviewed by _____

* IRAD will FAX completed worksheet to RAD for review.

FORWARD completed record to Director-Emergency Preparedness at event termination.

Attachment 2, RADIOACTIVITY RELEASE RATE ESTIMATE BASED ON CONTAINMENT RADIATION READINGS (Continued)

Portable Hand Held Radiation Monitor Reading On Contact with Containment Wall

Unit_____ Contact reading _____ (R/h) x (1.34E+4) = _____ R/h (CTMT reading)

Release Coefficient	x	CTMT reading (R/h)	x	U1 leak rate (cm^3/s)	=	U1 Release rate
	x	CTMT reading (R/h)	x	U2 leak rate (cm^3/s)	=	U2 Release rate
_____	x	_____ R/h	x	_____ cm^3/s	=	_____ µCi/s
_____	x	_____ R/h	x	_____ cm^3/s	=	_____ µCi/s
				Total Release Rate	=	_____ µCi/s

ACCIDENT TYPE	RELEASE COEFFICIENT
LOCAR (LOCA releasing RCS activity)	8.0E-3 (µCi/cm^3)/(R/h)
LOCAG (LOCA releasing gap activity)	3.7E-3 (µCi/cm^3)/(R/h)
LOCAC (LOCA releasing core activity)	3.3E-3 (µCi/cm^3)/(R/h)

LEAK RATE	VALUE
.1% volume per day (Design @ 25 psig)	1.0E+3 cm^3/s
1% volume per day (Design @ 50 psig)	5.8E+3 cm^3/s
10% volume per day (e.g. <6-$inch^2$ hole)	6.6E+4 cm^3/s
100% volume per day (e.g. 6-8-$inch^2$ hole)	6.6E+5 cm^3/s
100% volume per hour (e.g. 1-$foot^2$ hole)	1.6E+7 cm^3/s

Date _____
Time _____
Calculated by _____
*Reviewed by _____

* IRAD will FAX completed worksheet to RAD for review.

FORWARD completed record to Director-Emergency Preparedness at event termination.

Attachment 3, RADIOACTIVITY RELEASE RATE ESTIMATE BASED ON MAIN STEAM SYSTEM RADIATION READINGS

MAIN STEAM SYSTEM RADIATION MONITOR

Release Coefficient	x	1-RIC-5421 or 5422 (R/h) 2-RIC-5421 or 5422 (R/h)	x	flow rate (cm^3/s) flow rate (cm^3/s)	= =	U1 Release rate U2 Release rate
_____	x	_____ R/h	x	_____ cm^3/s	=	_____ µCi/s
_____	x	_____ R/h	x	_____ cm^3/s	=	_____ µCi/s
				Total Release Rate	=	_____ µCi/s

ACCIDENT TYPE	RELEASE COEFFICIENT
SGTRR - S/G tube rupture releasing RCS activity	30 (µCi/cm^3)/(R/h)
SGTRG - S/G tube rupture releasing gap activity	24 (µCi/cm^3)/(R/h)
SGTRC - S/G tube rupture releasing core activity	25 (µCi/cm^3)/(R/h)

FLOW RATE	VALUE
Single stuck open safety valve.	2.4 E+6 cm^3/s
Atmosphere dump valve stuck open.	1.4 E+6 cm^3/s

Date _____
Time _____
Calculated by _____
*Reviewed by _____

* IRAD will FAX completed worksheet to RAD for review.

FORWARD completed record to Director-Emergency Preparedness at event termination.

Attachment 3, RADIOACTIVITY RELEASE RATE ESTIMATE BASED ON MAIN STEAM SYSTEM RADIATION READINGS (Continued)

Portable Hand Held Radiation Monitor Reading on Contact with Main Steam Line Drains (MSIV's Closed)

Release Coefficient	x	monitor reading (R/h)	x	flow rate (cm^3/s)	=	U1 Release rate
	x	monitor reading (R/h)	x	flow rate (cm^3/s)	=	U2 Release rate
_____	x	_____ R/h	x	_____ cm^3/s	=	_____ µCi/s
_____	x	_____ R/h	x	_____ cm^3/s	=	_____ µCi/s
				Total Release Rate		_____ µCi/s

ACCIDENT TYPE	RELEASE COEFFICIENT
SGTRG (S/G tube rupture releasing gap activity)	1.9E+3 (µCi/cm^3)/(R/h)

FLOW RATE	VALUE
Single stuck open safety valve.	2.4 E+6 cm^3/s
Atmosphere dump valve stuck open.	1.4 E+6 cm^3/s

Date _____
Time _____
Calculated by _____
*Reviewed by _____

* IRAD will FAX completed worksheet to RAD for review.

FORWARD completed record to Director-Emergency Preparedness at event termination.

Attachment 4, RADIOACTIVITY RELEASE RATE ESTIMATE BASED ON IN-PLANT SAMPLING

MAIN VENT EFFLUENT SAMPLE

*U1 Sample $\mu Ci/cm^3$ *U2 Sample $\mu Ci/cm^3$	x x	U1 flow rate (cm^3/s) U2 flow rate (cm^3/s)	= =	U1 Release rate U2 Release rate
_____ $\mu Ci/cm^3$	x	_____ cm^3/s	=	_____ µCi/s
_____ $\mu Ci/cm^3$	x	_____ cm^3/s	=	_____ µCi/s
		Total Release Rate	=	_____ µCi/s

* total activity or growth activity

* FLOW RATE			VALUE
U1 Default flow rate	(120,000 cfm) x 472 (cm^3/s)/(cfm)	=	6.2E+7 cm^3/s
U2 Default flow rate	(90,500 cfm) x 472 (cm^3/s)/(cfm)	=	5.6E+7 cm^3/s

Date _____
Time _____
Calculated by _____
*Reviewed by _____

* IRAD will FAX completed worksheet to RAD for review.

FORWARD completed record to Director-Emergency Preparedness at event termination.

Attachment 4, RADIOACTIVITY RELEASE RATE ESTIMATE BASED ON IN-PLANT SAMPLING (Continued)

CONTAINMENT ATMOSPHERE SAMPLE

*U1 Sample µCi/cm^3 *U2 Sample µCi/cm^3	x x	U1 leak rate (cm^3/s) U2 leak rate (cm^3/s)	= =	U1 Release rate U2 Release rate
_____ µCi/cm^3 _____ µCi/cm^3	x x	_____ cm^3/s _____ cm^3/s Total Release Rate	= = =	_____ µCi/s _____ µCi/s _____ µCi/s

* total activity or growth activity

LEAK RATE	VALUE
.1% volume per day (Design @ 25 psig)	1.0E+3 cm^3/s
1% volume per day (Design @ 50 psig)	5.8E+3 cm^3/s
10% volume per day (e.g. <6-inch^2 hole)	6.6E+4 cm^3/s
100% volume per day (e.g. 6-8-inch^2 hole)	6.6E+5 cm^3/s
100% volume per hour (e.g. 1-foot^2 hole)	1.6E+7 cm^3/s

Date _____
Time _____
Calculated by _____
*Reviewed by _____

* IRAD will FAX completed worksheet to RAD for review.

FORWARD completed record to Director-Emergency Preparedness at event termination.

Attachment 4, RADIOACTIVITY RELEASE RATE ESTIMATE BASED ON IN-PLANT SAMPLING (Continued)

RCS SAMPLE - STEAM GENERATOR TUBE RUPTURE

*U1 RCS Sample(µCi/mL) x leak rate(gpm) x CF (mL/s)/(gpm) x PF = release rate (µ Ci/s) *U2 RCS Sample(µCi/mL) x leak rate(gpm) x CF (mL/s)/(gpm) x PF = release rate(µCi/s)								
_____	µCi/mL	x	_____	gpm	x	_____(mL/s)/(gpm)	x	_____PF = _____ µCi/s
_____	µCi/mL	x	_____	gpm	x	_____(mL/s)/(gpm)	x	_____PF = _____ µCi/s
						Total Release Rate	=	_____ µCi/s

* select total noble gas or total iodines and particulates

LEAK RATE	VALUE
Small Leak single charging pump rate	36 gpm
Large Leak single sheared tube	600 gpm

CONVERSION FACTOR (CF)	VALUE
(mL/s)(gpm)	63.1 (mL/s)/(gpm)

**PARTITION FACTOR (PF)	VALUE
Noble Gases	1.0
Non-noble gases (iodines & particulates) full SG.	.02
Non-noble gases (iodines & particulates) tube break above secondary side water level in SG.	.50
Non-noble gases (iodines & particulates) dry primary and secondary side.	1.0

** PF must be consistent with activity sample (i.e., total noble gas vs. total iodines and particulates)

Date _____
Time _____
Calculated by _____
***Reviewed by _____

*** IRAD will FAX completed worksheet to RAD for review.

FORWARD completed record to Director-Emergency Preparedness at event termination.

Attachment 4, RADIOACTIVITY RELEASE RATE ESTIMATE BASED ON IN-PLANT SAMPLING (Continued)

STEAM SAMPLE - STEAM GENERATOR TUBE RUPTURE

U1 Main Steam Sample $\mu Ci/cm^3$ U2 Main Steam Sample $\mu Ci/cm^3$	x x	leak rate cm^3/s leak rate cm^3/s	= =	Release rate $\mu Ci/s$ Release rate $\mu Ci/s$
_____ $\mu Ci/cm^3$	x	_____ cm^3/s	=	_____ $\mu Ci/s$
_____ $\mu Ci/cm^3$	x	_____ cm^3/s	=	_____ $\mu Ci/s$
		Total Release Rate	=	_____ $\mu Ci/s$

LEAK RATE	VALUE
Safety valve stuck open	2.44E+6 cm^3/s
Atmosphere dump valve open	1.35E+6 cm^3/s

Date _____
Time _____
Calculated by _____
***Reviewed by _____

*** IRAD will FAX completed worksheet to RAD for review.

FORWARD completed record to Director-Emergency Preparedness at event termination.

Attachment 5, ALTERNATE METHOD OF MONITORING MAIN STEAM SYSTEM WITH MSIV'S CLOSED

NOTE

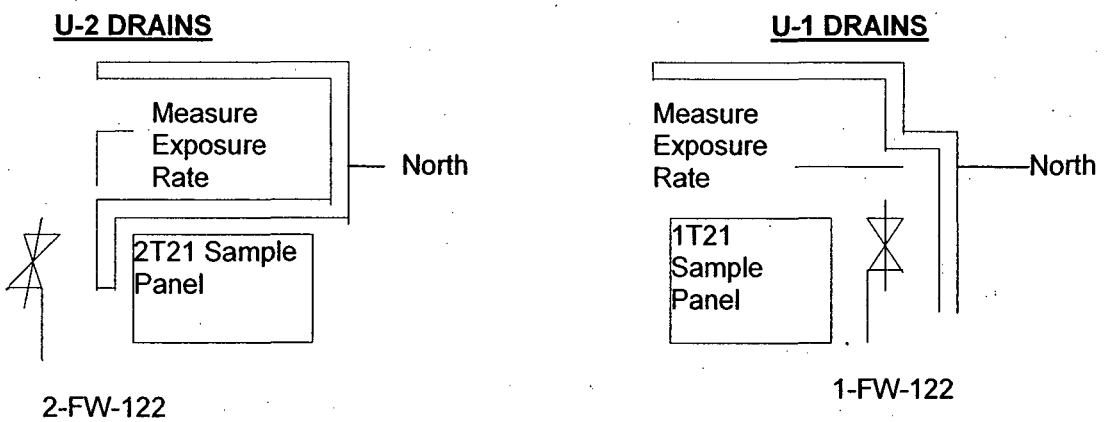
This method may require support by Operations and Radiation Protection to obtain exposure rate readings. This may significantly delay release estimates.

1.0 **BRIEFLY OPEN** MOV 6611 & 6612 at 1/2 T22 **AND THEN** open bypass valve (MOV 6603, DR-5; MOV 6604, DR-6) around flow orifice in the line being monitored (1/2C02 in Control Room or 1/2T22 at Steam Line Drain Panel on 12' EL). This will assure a representative sample of steam in the Main Steam Header.

2.0 **MEASURE** exposure rate with hand held radiation monitor (SHP 360, Smartpole etc.) held 1" from the elbow between the two horizontal drain pipe segments of Main Steam Line drains (DR-5 or DR-6 use the one with the highest reading) adjacent to 16/26B F.W. header inlet hammer valves (1/2-FW-122).

NOTE

Elbows are accessible from 12'EL of Turbine Building behind sample panels.



Calvert Cliffs Nuclear Power Plant
TECHNICAL PROCEDURE

ERPIP-903

MONITORING EQUIPMENT AND INSTRUMENTATION

Revision 00501

Safety Related

REFERENCE USE

Applicable To:

☒ **Calvert Cliffs Nuclear Power Plant, Unit 1 and 2**

Sponsor: Director-Emergency Preparedness (CCNPP)

Approval Authority: Plant General Manager (CCNPP)

SUMMARY OF ALTERATIONS

Revision	Change	Summary of Revision or Change
005	01	Cover Page – changed "memory use" to "reference use" to align with the new CENG template. 2.2 – Scope – removed this section because it was listed as "none" 2.2.1.2 – Changed "Emergency Planning" to "Emergency Preparedness" 6.3.1 – Changed "Emergency Response Center" to "Emergency Response Facility" and "Emergency Planning" to "Emergency Preparedness" 9.1.1 - Changed "Emergency Planning" to "Emergency Preparedness" 9.1.3 - Changed "Emergency Planning" to "Emergency Preparedness" Attachment 5 – Changed "Instrument: HP-310" to "Instrument: SHP-310" This was a typo in a previous revision. Attachment 6 - Revised Source Response Values in Attachment 6, SPA-9 Detector Source Check using BA-133 Source, to correct for Source Decay. (PCR-10-03253)
005	00	Corrected Section 3.1, Developmental and Section 3.2, Performance References, and Section 9.0, Records, that have been superseded by Fleet Procedures identified during the Biennial Procedure Review. Removed List of Effective Pages, as it is no longer required per CNG-PR-1.01-1011, Control of Station Specific Procedure Change Process. Position Titles changed throughout procedure due to RP Re-Organization effective 7/1/2009. Changes apply to communications path. Survey Team report directly to the Radiological Assessment Director (RAD) and Radiation Protection Director (RPD). **(RPA-2008-0353)** Added Attachment Names throughout to provide more consistency. Revised Source Response Values in Attachment 6, SPA-9 Detector Source Check using BA-133 Source, to correct for Source Decay. **(PCR-09-02543)** This Change/Revision is applying a conversion exemption approved by the PGM and Director, Fleet Policies and Procedures.

TABLE OF CONTENTS

1.0 PURPOSE

1.1. This procedure provides emergency response instructions in the use of monitoring equipment and instrumentation.

2.0 APPLICABILITY/SCOPE/RESPONSIBILITIES

2.1. Applicability/Scope

2.1.1. This procedure applies to personnel using monitoring equipment and instrumentation in support of the Calvert Cliffs Emergency Response Plan, including but not limited to the following:

- Survey Team Members
- Center Monitors

2.2. Responsibilities

2.2.1. Personnel using radiological monitoring equipment and instrumentation are responsible for:

1. Ensuring that monitoring equipment and instrumentation designated for emergency use is operational and responding to the source within the appropriate source check scale.

2. Turning in inoperable or faulty equipment to the Emergency Preparedness Unit.

3.0 REFERENCES AND DEFINITIONS

3.1. Developmental References

3.1.1. NUREG 0654, Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants

3.1.2. 10 CFR 20, Standard for Protection Against Radiation

3.1.3. 10 CFR 50.47, Emergency Plans

3.1.4. 10 CFR 50 Appendix E to Part 50, Emergency Preparedness and Preparedness for Production and Utilization Facilities

3.1.5. Calvert Cliffs Nuclear Power Plant Emergency Response Plan

3.1.6. CNG-PR-1.01-1005, Control of Constellation Nuclear Generation Technical Procedure Format and Content

3.1.7. CNG-PR-1.01-1009, Procedure Use and Adherence Requirements

3.2. **Performance References**

3.2.1. CNG-PR-3.01-1000, Records Management

3.2.2. RP-2-103, Sealed Source Control Program

3.3. **Definitions**

None.

4.0 PREREQUISITES

4.1. Personnel Skill Levels Required

4.1.1. Personnel performing this procedure shall be qualified on the tasks or activities contained in this procedure.

5.0 PRECAUTIONS AND LIMITATIONS

5.1. Declared pregnant women and minors are not authorized to perform emergency functions.

6.0 PERFORMANCE

6.1. Activation

None

> **NOTE**
>
> This procedure provides guidance and use instructions to ensure that before use, monitoring equipment and instrumentation designated for emergency use is operational and responding to the source within the appropriate source check scale.

6.2. Process

6.2.1. **IDENTIFY** appropriate activity from listing below **AND GO TO** the indicated attachment for instructions:

- Attachment 1, Monitoring Equipment Use
- Attachment 2, Monitoring Equipment Descriptions
- Attachment 3, Operational Check and Set-Up of E-600 Meter and Detectors
- Attachment 4, Air Sampling Equipment Operation
- Attachment 5, Instrument Source Check Using Cs-137 Source
- Attachment 6, SPA-9 Detector Source Check Using Ba-133 Source
- Attachment 7, Source Check Set-Up
- Attachment 8, Air Sampler Set-Up
- Attachment 9, Operational Check and Set-Up of RM-14

6.3. Deactivation

6.3.1. **WHEN** notified of event termination, **THEN FORWARD** records **AND** documentation generated from the use of Emergency Response Plan Implementation Procedures to either the appropriate Radiological Assessment Director (RAD) **OR** Radiation Protection Director (RPD) **OR** the appropriate Emergency Response Facility Director for turnover to Emergency Preparedness.

7.0 POST-PERFORMANCE ACTIVITIES

None

8.0 BASES

None

9.0 RECORDS

9.1. Records generated by this procedure may be permanent, non-permanent, or lifetime radiological records depending on the circumstances under which they are generated. Records shall be captured and controlled as follows:

9.1.1. During an actual event as described in the purpose statement of this procedure, records shall be considered **permanent** records and submitted to the Emergency Preparedness Unit for final disposition according to CNG-PR-3.01-1000, Records Management.

- Attachment 5, Instrument Source Check Using Cs-137 Source
- Attachment 6, SPA-9 Detector Source Check Using Ba-133 Source

9.1.2. During an actual event as described in the purpose statement of this procedure, dosimetry records, that is, any dose-related record including access history records, are considered **radiological lifetime records** and are to be handled and maintained according to standard practices and unit procedures.

- Attachment 5, Instrument Source Check Using Cs-137 Source
- Attachment 6, SPA-9 Detector Source Check Using Ba-133 Source

9.1.3. During a drill or exercise, records shall be considered **non-permanent** records and submitted to the Emergency Preparedness Unit for evaluation and retention according to CNG-PR-3.01-1000, Records Management.

None

Attachment 1, MONITORING EQUIPMENT USE

A. **OBTAIN** the best available information on activity level **OR** dose rate (**AND** predominant isotopes at the location to be monitored **BEFORE SELECTING** equipment.

B. **SELECT** equipment with monitoring ranges in excess of those expected to be monitored.

1. **SEE** Attachment 2, Monitoring Equipment Descriptions

C. **CHECK** the following **BEFORE USING** equipment:

1. Battery (if portable).

2. Calibration sticker to ensure it is current.

3. Modification **OR** limitations listed on sticker.

4. Response (instruments may also be source checked IAW RSP-1-102):

a. **USE** a Cs-137 button source on all detectors except the SPA-9.

b. For those locations that include a SPA-9 in their inventory, **USE** a Ba-133 source with a SPA-9. This source is included in the location's inventory.

NOTE

Check sources are maintained in the Nuclear Security Facility, Operational Support Center Locker, Control Room Locker, Mobile Monitoring Kits, Farm Demonstration Building, Radiation Safety Office at Access Control Point, and Calvert Memorial Hospital.

5. **DO NOT USE** inoperable **OR** faulty equipment.

a. **TURN IN** inoperable **OR** faulty equipment to the Emergency Planning Unit.

6. **WHEN** using monitoring equipment, **THEN**:

a. **IF** the instrument is pegged at the high end **OR** over ranged **OR** alarming, **THEN LEAVE** the area **AND CONTACT** the following for further instructions:

- Onsite SurveyTeam **AND** Center Monitors — **CONTACT** the Radiation Protection Director (in OSC).
- Offsite Survey Team — **CONTACT** Radiological Assessment Director (in EOF).

Attachment 2, MONITORING EQUIPMENT DESCRIPTIONS

1. **E-600 EBERLINE DIGITAL SURVEY METER**

The Eberline E-600 was designed to replace a wide range of portable radiation measurement instruments. The meter is designed to support a wide range of detectors and to display measurement results in a variety of units and formats. The E-600 will be used in conjunction with all the detectors that are used in the Emergency Response Plan.

2. **HP-270 EBERLINE BETA/GAMMA GM DETECTOR**

The HP-270 detector will be used with the E-600 to take beta/gamma exposure surveys. The detector is capable of detection beta/gamma radiation with an energy range of 30 keV to 6 MeV. The detector has a dose rate range of
3R/hr.

3. **SMART POLE EBERLINE X-RAY/GAMMA GM DETECTOR**

This extender pole is designed to allow safe measurements of high dose rate fields from a distance. The pole extends to 11.9 feet and collapses to 4.05 feet for ease of storage and transportation. The Smart Pole includes two GM tubes in the detector assembly that covers a range from 0.1 mR/hr to 1,000 R/hr.

4. **HP-360 EBERLINE ALPHA/BETA/GAMMA GM DETECTOR**

The HP-360 is a non-compensated GM detector that is used for Alpha/Beta/Gamma surveys. The detector can also be used for frisking items and personnel.

5. **HP-310 EBERLINE HIGH ENERGY GAMMA GM DETECTOR**

The HP-310 is an energy compensated GM detector that is used for high level gamma exposure measurements. The detector covers a range from 10 mR/hr to 100 R/hr.

6. **SPA-9 EBERLINE GAMMA NaI DETECTOR**

The SPA-9 is a NaI detector used for medium sensitive gamma measurements. The detector can also be used to identify I-131.

Attachment 2, MONITORING EQUIPMENT DESCRIPTIONS (Continued)

7. **RM-14 EBERLINE SURVEY METER**

Compact count rate meter operated by AC line power or a Ni-Cd battery. (Battery continuously trickle charges when unit is plugged into AC power.) Battery condition is checked by front panel controls.

This monitor is intended primarily for use with a Geiger-Mueller detector, but, with slight modifications, can be used with scintillation detectors.

Radiation count rate is read on front panel meter with 0-500 counts per minute full scale. Three switch selected ranges of X1, X10, and X100 are provided. Meter response time can be selected by a "FAST-SLOW" response switch.

A high limit alarm is provided. It is adjustable over the meter scale by a control on the rear panel. The alarm, when actuated, does not interrupt or affect meter reading. It is a locking type alarm that continues to alarm until the reset switch is depressed. Alarm loudness is adjustable.

External recorder and scaler outputs are provided on the rear panel.

Attachment 3, OPERATIONAL CHECK AND SET-UP OF E-600 METER AND DETECTORS

A. **CONNECT** the appropriate detector to the E-600 meter.

1. **CHOOSE** the detector that is best suited for the radiation type **AND** range.

B. **TURN** the control knob on the top of the meter to the CHECK position.

1. **VERIFY** the detector model scrolls at the bottom of the meter screen.

a. **IF** the detector model scrolled passed before it was viewed, **THEN TURN** the control knob to OFF **AND** then back to CHECK.

2. **VERIFY** that the battery is above 10% **AND GO TO** step C.

3. **IF** the meter indicates the battery is below 10%, **THEN TURN OFF** the E-600.

a. **REMOVE** the black panel on the bottom of the E-600.

NOTE

Batteries are generally located in the Emergency Response Plan equipment cabinets in the same location as where the E-600s are stored.

b. **REPLACE** the C-cell batteries.

c. **REASSEMBLE** the E-600.

d. **REPEAT** step B.

C. **TURN** the control knob to BACKGD **AND PRESS** the star button on top of the handle.

1. **WHEN** the meter automatically stops at 5.0%, **THEN TURN** the control knob to SCALER (net mode).

OR

2. **WHEN** the background has stabilized, **THEN PRESS** the star button **AND TURN** the control knob to SCALER (net mode).

Attachment 3, OPERATIONAL CHECK AND SET-UP OF E-600 METER AND DETECTORS
(Continued)

D. **USING** the appropriate check source, **THEN PERFORM** source response check on the detector.

NOTE

Pictures on Attachment 7, Source Check Set-Up , show typical sources. Some sources differ in appearance but source use and geometry remain the same.

1. **PLACE** the check source on the detector as described on Attachment 7, Source Check Set-Up, (pictures on Attachment 7 show typical sources, some sources differ in appearance. Source use **AND** geometry remains the same).

2. **PRESS** the star button **AND WAIT** until the meter automatically stops.

3. **RECORD** the reading on the appropriate Attachment (Attachment 5, Instrument Source Check using CS-137 Source, **OR** Attachment 6, SPA-9 Detector Source Check using BA-133 Source).

4. **IF** the meter reading is outside of the range as indicated by the attachment, **THEN CONTACT** the RPD in the OSC **OR** the RAD in the EOF.

E. **REPLACE** the source in the package.

Attachment 4, AIR SAMPLING EQUIPMENT OPERATION

NOTE

Use other filters combinations such as CY-130 silver zeolite filter cartridge and Millipore particulate filter only when directed to do so by the Radiation Protection Director.

A. **OBTAIN** a CP-100 charcoal filter cartridge **AND** a glass fiber particulate filter.

NOTE

The arrow on the side of the filter cartridge points towards the air sampler intake (indicates direction of airflow).

B. **PLACE** the CP-100 charcoal filter cartridge in the back portion of the filter holder.

1. **SEE** Attachment 8, Air Sampler Set-Up, for illustration.

NOTE

The manufacturer typically marks fiber filters on one side. The mark is used to identify one side of the filter from the other. This facilitates proper filter counting/analysis.

C. **CHECK** that the glass fiber filter is marked on one side.

1. **IF** the filter has a manufacturer's mark, **THEN MARK** the other side with a small "x."

NOTE

The filter side you mark is the collection side.

2. **IF** the filter is *not* marked, **THEN MARK** the "fuzzy" side with a small "x."

a. **SEE** Attachment 8, Air Sampler Set-Up, for illustration.

Attachment 4, AIR SAMPLING EQUIPMENT OPERATION (Continued)

D. **PLACE** glass fiber filter (surface with the mark facing front) in the front portion of the filter holder.

1. **SEE** Attachment 8, Air Sampler Set-Up, for illustration.

E. **PLACE** the retaining cover over the glass fiber filter.

1. **ENSURE** the glass fiber filter is securely in place **AND** not torn.

F. **SECURE** the front portion of the filter holder to back portion of the filter holder containing the charcoal filter cartridge.

G. **SET-UP** air sampler in the location described in specific center procedure.

H. **START** the air sampler by plugging it in.

1. **IF** the sampler is equipped with an on/off switch, **THEN TURN** the switch on.

I. **RECORD** the air sample start time **AND** flow rate, as indicated on the air sampler calibration sticker, for: GF, $1m^3$.

NOTE

Run times to collect a $1m^3$ sample is labeled on the air sampler itself.

J. **RUN** sampler long enough to collect a $1m^3$ sample.

Attachment 5, INSTRUMENT SOURCE CHECK USING CS-137 SOURCE

INSTRUMENT: SHP-310
SCALE: mR/hr
RESPONSE: 15 to 27 mR/hr

SERIAL#	READING	BATTERY	CAL. DUE	INITIALS

INSTRUMENT: SHP-270
SCALE: mR/hr
RESPONSE: 5.0 to 10 mR/hr

SERIAL#	READING	BATTERY	CAL. DUE	INITIALS

INSTRUMENT: Smart Pole
SCALE: mR/hr
RESPONSE: 7.0 to 13 mR/hr

SERIAL#	READING	BATTERY	CAL. DUE	INITIALS

INSTRUMENT: SHP-360
SCALE: kcpm
RESPONSE: 7.0 to 20 kcpm

SERIAL#	READING	BATTERY	CAL. DUE	INITIALS

INSTRUMENT: RM-14 w/HP-210 (Approximately 3 inches from probe face)
SCALE: X100; slow response
RESPONSE: 10 to 30 kcpm

SERIAL#	READING	BATTERY	CAL. DUE	INITIALS

FORWARD completed form to Emergency Preparedness at event termination.

Attachment 6, SPA-9 DETECTOR SOURCE CHECK USING BA-133 SOURCE

Source ID: 96BA5001828
SCALE: kcpm
RESPONSE: 39 to 59 kcpm

SERIAL#	READING	BATTERY	CAL. DUE	INITIALS

Source ID: 97BA5000596
SCALE: kcpm
RESPONSE: 332 to 498 kcpm

SERIAL#	READING	BATTERY	CAL. DUE	INITIALS

Source ID: 97BA5000598
SCALE: kcpm
RESPONSE: 319 to 478 kcpm

SERIAL#	READING	BATTERY	CAL. DUE	INITIALS

Source ID: 93BA5002168
SCALE: kcpm
RESPONSE: 274 to 411 kcpm

SERIAL#	READING	BATTERY	CAL. DUE	INITIALS

FORWARD completed form to Emergency Preparedness at event termination.

Attachment 6, SPA-9 DETECTOR SOURCE CHECK USING BA-133 SOURCE (Continued)

Source ID: CCNPP041803
SCALE: kcpm
RESPONSE: 790 to 1185 kcpm (button source on contact with bottom of SPA-9 with label facing away from detector)

SERIAL#	READING	BATTERY	CAL. DUE	INITIALS

Source ID: 93BA5002169
SCALE: kcpm
RESPONSE: 235 to 352 kcpm

SERIAL#	READING	BATTERY	CAL. DUE	INITIALS

Source ID: 93BA5002170
SCALE: kcpm
RESPONSE: 194 to 291 kcpm

SERIAL#	READING	BATTERY	CAL. DUE	INITIALS

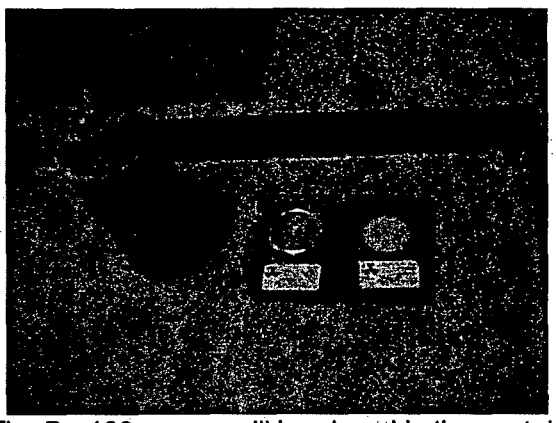
Source ID: 93BA5002171
SCALE: kcpm
RESPONSE: 280 to 420 kcpm

SERIAL#	READING	BATTERY	CAL. DUE	INITIALS

FORWARD completed form to Emergency Preparedness at event termination.

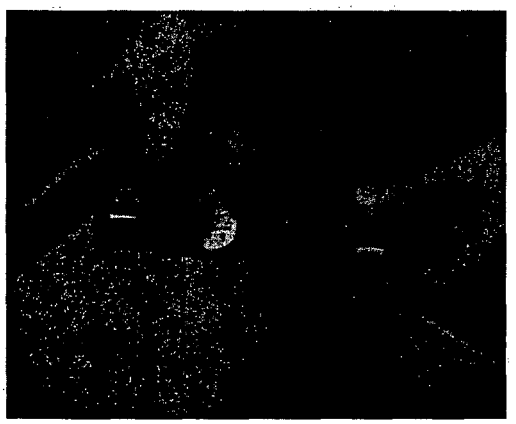
Attachment 7, SOURCE CHECK SET-UP

SPA – 9



The Ba-133 source will be placed in the container face up. The SPA-9 will be placed directly over the source.

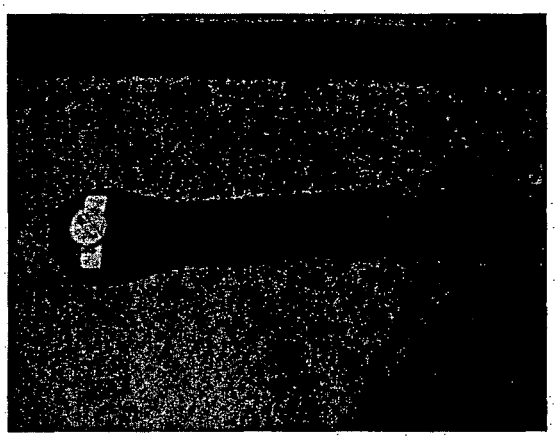
SHP-270

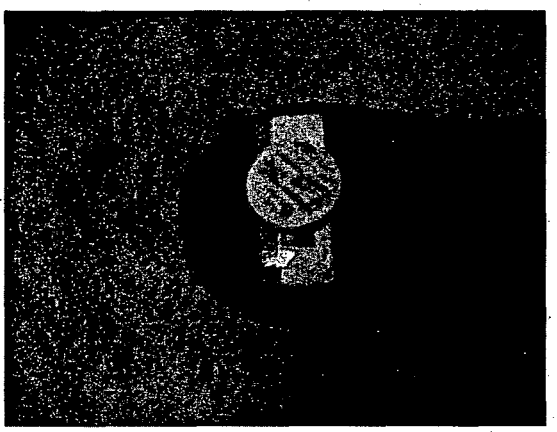


The Cs-137 source will be placed on contact with the detector and centered on the ridge of the closed window.

Attachment 7, SOURCE CHECK SET-UP (Continued)

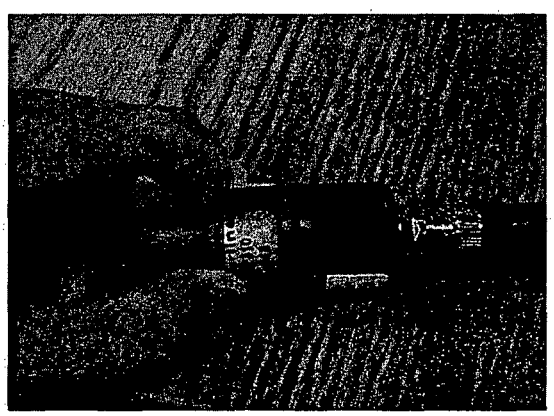
SHP - 360

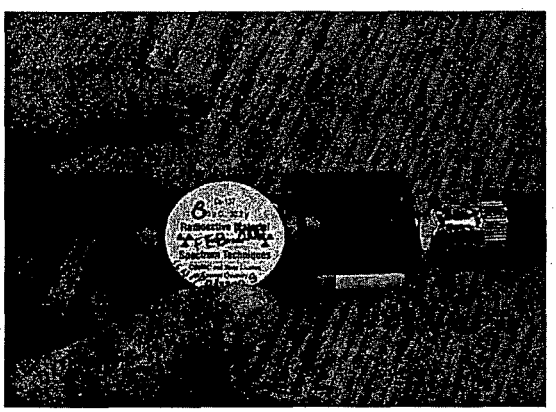




The Cs-137 source will be placed on contact with the backside of the detector.

SHP - 310

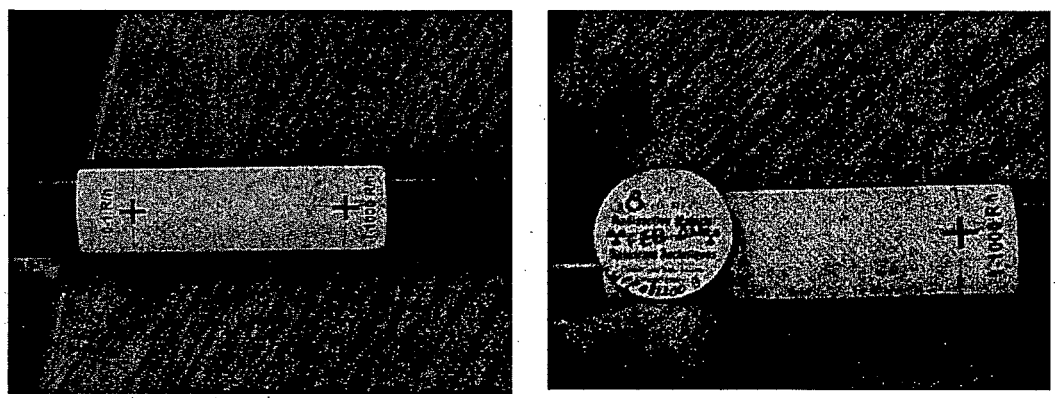




The Cs-137 source will be placed on contact with the edge of the source placed against the edge of the peanut probe.

Attachment 7, SOURCE CHECK SET-UP (Continued)

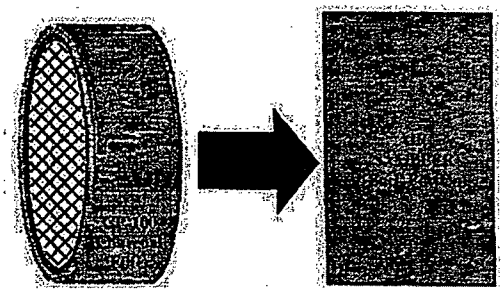
SMART POLE



The Cs-137 source shall be placed on contact with the detector and centered with the low range detector mark (0-1 R/Hr).

Attachment 8, AIR SAMPLER SET-UP

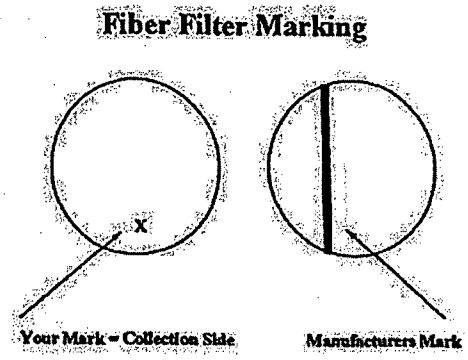
Place charcoal filter cartridge in the back portion of the filter holder with the arrow pointing towardsthe air sampler



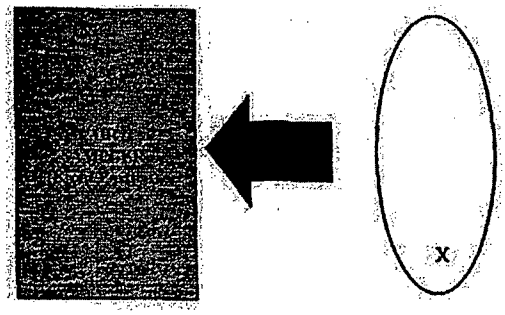
If the filter has a manufacturers markTHEN mark the other side.

If the filter is not marked, THEN mark the fuzzy side.

The marked side is the collection side of the filter.



Place the glass fiber filter in the front portion of the air sampler filter holder, with your marked side facing front/outward, away from the pump. Your marked side should be visible from the open end.



Attachment 9, OPERATIONAL CHECK AND SET-UP OF RM-14

A. **VERIFY** the AC power cord is securely plugged in the back of the RM-14.

B. **PLUG** the power cord into an outlet (the AC light on the front of the instrument should be illuminated).

C. **TURN** the control knob on the front of the RM-14 to the X100 position.

D. **POSITION** the response selector switch to the SLOW response position.

NOTE

RP-2-103, Sealed Source Control Program, provides for the safe handling and accountability of sealed sources.

E. **REMOVE** the Cs-137 source from package.

1. **PERFORM** source check on instrument as described for the RM-14 on Attachment 5, Instrument source Check Using Cs-137 Source.

F. **ALLOW** the meter approximately 10 seconds to stabilize.

1. **RECORD** the observed reading.

2. **REPLACE** the Cs-137 source in package.

G. **IF** the RM-14 meter reading is within the range listed on Attachment 5, **THEN USE** the RM-14 for personnel monitoring.

H. **IF** the meter reading is outside of this range, **THEN NOTIFY** the Radiation Protection Director in the OSC.

I. **IF** background radiation levels are greater than 2/3 full scale on the meter X1 scale, **THEN TURN** the control to the next higher scale (X10, X100) until the background reading is less than 2/3 full scale.

J. **TURN** the control knob to the X1 position **AND OBSERVE** the background radiation level.