

State of West Virginia Sample Reception Center Standard Operating Procedures (SOP)



State of West Virginia Sample Reception Center SOP

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Background

The West Virginia Sample Reception Center (SRC) Standard Operating Procedure (SOP) was developed to provide a systematic approach to operations at the SRC for the State of West Virginia. These procedures were specifically developed to address protective actions required around a nuclear power plant; however, many of the functions described in the procedures are basic activities that may be used for any incident involving radiological materials. The SRC may be activated to assist in the oversight of field samples and shipment to appropriate laboratories responding to an emergency at a nuclear power plant.

Overview

The State of West Virginia has no nuclear power plants within its borders, however, the Beaver Valley Power Station, located in Shippingport, PA, directly affects the northern panhandle of West Virginia. The northern parts of Hancock County fall within the 10-mile radius Plume Emergency Planning Zone (EPZ). Additionally, Hancock, Brooke, Ohio, and the northern portions of Marshall County fall within the 50-mile radius EPZ for ingestion planning and actions necessary for the protection of the food chain.

If a radiological release occurs, actions to protect the public and food chain would involve the collection and lab analyses of soil, water, and foodstuffs from areas where deposition is suspected. Samples would also be collected from areas where deposition did not occur to verify the safety of the public and their food. The data from all samples will be used for recommendations and decisions for relocation of the public, re-entry of personnel into the restricted zone (RZ) and return of the public to evacuated areas.

Responsibilities

The Department of Health and Human Resources (DHHR) staffs and controls the SRC. The SRC is activated and supported by the West Virginia Division of Homeland Security and Emergency Management (WVDHSEM) to support the sampling activities of the State of West Virginia. This support includes maintaining supplies, oversight of logging, and assistance in sample collection.

WVDHSEM

- Maintains sampling supplies
- Provides consumable items used in reception
- Provides communication equipment

DHHR

- Oversees the SRC
- Receives and prepares samples for shipment to laboratory
- Provides equipment for SRC

Duties and Required Actions

Sample Reception Center Coordinator

1. Ensure the following are delivered/available to the Sample Reception Center
 - Monitoring instruments, including a meter capable of readings in μR .
 - Sample reception equipment (tables, chairs, Kraft paper, absorbent pads, tape, etc.)
 - Field Sample Screening Form (Appendix 1)
 - Procedures and plans
 - Pens, markers, clipboards, and other office supplies, as needed
 - Radio for communication to Field Team Center
 - Coolers and ice (only needed for certain sample types)
2. Establish communications by
 - Performing radio communications verification with Field Team Center (FTC). Verify backup communications of phone connections to FTC.

3. Prepare for sampling reception operations by

- Taking note of background radiation levels at Sample Reception Center and recording on Field Sample Screening form.
- Cover the table surface where samples are to be screened with heavy brown paper (Kraft paper) and absorbent pads (plastic side down). Secure paper and pads with tape.
- Mark a dividing line on the covered surface and designate one side of line as clean and the other as dirty.
- Place all supplies needed for sample screening in convenient location.
- Set up large plastic bag for waste generated during sample screening.
- Put on protective clothing as required.

4. Receive samples from field sampling team by

- Assure that all team members are wearing gloves
- Place the sample on the sample receiving side (dirty) of the protected table.
- Ensure that all information on Sample and Laboratory Data sheet is completed and the Sample IDs match the container label. Sign the chain-of-custody section.
- Carefully place the Sample and Laboratory data sheet in clean plastic bag and lay on clean side of table.
- Take an exposure rate reading on the surface of the sample using a Micro-R survey meter and record sample ID number and exposure rate on Field Sample Screening Form. If the exposure rate is greater than 3000 $\mu\text{R/hr}$, utilize ion chamber survey meter to measure and record the exposure rate.
- Carefully bag the sample into a clean plastic bag and place on the clean side of the table. Remove gloves and dispose of them in the waste container. Seal the sample bag.
- Secure the Sample and Laboratory Data Sheet bag to sample bag using tape.
- If the exposure rate measured on the sample was less than 500 $\mu\text{R/hr}$, set the sample and Sample and Laboratory Data Sheet aside for shipment to the laboratory. Samples with higher exposure rates require advice and approval for disposition from DHHR representative at Field Team Center.
- Ask field sampling team for any other waste. Any waste should be disposed in trash container. Direct field sampling team to proceed to monitoring/decon if they have not already done so.

5. Prepare for the next shift by

- Removing protective paper from tables and disposed in trash containers.
- Survey the work area and equipment with GM survey meter and decontaminate, as needed, with distilled water, soap, and Paper Towel.
- Remove protective clothing carefully and dispose into trash containers.
- Contact the DHHR representative at the Field Team Center and provide them with the type and number of samples screened, type and number of samples prepared for shipment to laboratory, type and number of samples held awaiting disposition, type and amount of waste accumulated, equipment needs, and dosimetry readings.

Sample Reception Team Member

1. Ensure the following are delivered/available to the Sample Reception Center

- Monitoring instruments, including a meter capable of readings in μR .
- Sample reception equipment (tables, chairs, Kraft paper, absorbent pads, tape, etc.)
- Field Sample Screening Form (Appendix 1)

- Procedures and plans
 - Pens, markers, clipboards, and other office supplies, as needed
 - Radio for communication to Field Team Center
 - Coolers and ice (only needed for certain sample types)
2. Prepare for sampling reception operations by
- Taking note of background radiation levels at Sample Reception Center and recording on Field Sample Screening form.
 - Cover the table surface where samples are to be screened with heavy brown paper (Kraft paper) and absorbent pads (plastic side down). Secure paper and pads with tape.
 - Mark a dividing line on the covered surface and designate one side of line as clean and the other as dirty.
 - Place all supplies needed for sample screening in convenient location.
 - Set up large plastic bag for waste generated during sample screening.
 - Put on protective clothing (coveralls, gloves, etc.)
3. Receive samples from field sampling team by
- Assure that all team members are wearing gloves
 - Place the sample on the sample receiving side (dirty) of the protected table.
 - Ensure that all information on Sample and Laboratory Data sheet is completed and the Sample IDs match the container label. Sign the chain-of-custody section.
 - Carefully place the Sample and Laboratory data sheet in clean plastic bag and lay on clean side of table.
 - Take an exposure rate reading on the surface of the sample using a Micro-R survey meter and record sample ID number and exposure rate on Field Sample Screening Form. If the exposure rate is greater than 3000 $\mu\text{R/hr}$, utilize ion chamber survey meter to measure and record the exposure rate.
 - Carefully bag the sample into a clean plastic bag and place on the clean side of the table. Remove gloves and dispose of them in the waste container. Seal the sample bag..
 - Secure the Sample and Laboratory Data Sheet bag to sample bag using tape.
 - If the exposure rate measured on the sample was less than 500 $\mu\text{R/hr}$, set the sample and Sample and Laboratory Data Sheet aside for shipment to the laboratory. Samples with higher exposure rates require advice and approval for disposition from DHHR representative at Field Team Center.
 - Ask field sampling team for any other waste. Any waste should be disposed of into trash container. Direct field sampling team to proceed to monitoring/decon if they have not already done so.
4. Prepare for the next shift by
- Removing protective paper from tables and dispose of into trash canisters.
 - Survey the work area and equipment with GM survey meter and decontaminate, as needed, with distilled water, soap, and Paper Towel.
 - Remove ppe carefully and dispose of into trash canisters.
 - Contact the DHHR representative at the Field Team Center and provide them with the type and number of samples screened, type and number of samples shipped to laboratory, type and number of samples held awaiting disposition, type and amount of waste accumulated, equipment needs, and dosimetry readings.

Appendix 2 - Equipment List

- Kraft Paper
- Absorbent Pads
- Tape
- Plastic Bags
- Trash Bags
- Field Sample Screening Form
- GM Survey Meter
- Micro-R Survey Meter
- Dosimeters
- Polypropylene Coveralls
- Nitrile Gloves
- Pens
- Markers
- Paper Towels
- Soap
- Tables
- Chairs
- Clipboards
- Coolers w/ ice (Only required for certain sample types)
- Radio
- Mobile Phone

Appendix 3 - Reference Documents

NUREG-0654/FEMA-REP-1, Rev. 1, *Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants*, November 1990.

NUREG-0654/FEMA-REP-1, Rev. 1, *Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants, Addenda*, March 2002.

NUREG-0654/FEMA-REP-1, Rev. 1, Supplement 1, *Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants- Criteria for Utility Offsite Planning and Preparedness*, September 1988.

NUREG-0654/FEMA-REP-1, Rev. 1, Supplement 2, *Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants- Criteria for Emergency Planning in an Early Site Permit Application*, April 1996.

NUREG-0654/FEMA-REP-1, Rev. 1, Supplement 3, *Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants- Guidance for Protective Action Strategies*, October 2011.

NUREG-0654/FEMA-REP-1, Rev. 1, Supplement 4, *Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants- Criteria for National Preparedness Initiative Integration, Exercise Enhancement, and Backup Alert and Notification Systems*, October 2011.

FEMA-REP-2, *Guidance on Offsite Emergency Radiation Measurement Systems, Phase 1 – Airborne Release*, June 1990.

FEMA-REP-5, Rev. 2, *Guidance for Developing State, Tribal, and Local Radiological Emergency Response Planning and Preparedness for Transportation Accidents*, November 2000.

FEMA-REP-10, *Guide for Evaluation of Alert and Notification Systems for Nuclear Power Plants*, November 1985.

FEMA-REP-12, *Guidance on Offsite Emergency Radiation Measurement Systems, Phase 2 - The Milk Pathway*, September 1987.

FEMA-REP-13, *Guidance on Offsite Emergency Radiation Measurement Systems, Phase 3 Water and Non-Dairy Food Pathway* May 1990.

NUREG-1442/FEMA-REP-17, Rev. 1, *The Emergency Response Resources Guide for Nuclear Power Plant Emergencies*, July 1992.

FEMA-REP-21, *Contamination Monitoring Standard for Portal Monitors used in Radiological Emergency Response*, March 1995.

FEMA-REP-22, *Contamination Monitoring Guidance for Portable Instruments used in Radiological Emergency Response to Nuclear Power Plant Accidents*, October 2002.

FEMA Program Manual – Radiological Emergency Preparedness, October 2011.

FEMA Federal Policy on Use of Potassium Iodide (KI), January 2002.

FEMA REP Guidance to States and Local Governments for Shelf Life Extension of Potassium Iodide (KI), April 2007.

Robert T. Stafford Disaster Relief and Emergency Assistance Act, Public Law 93-288, as amended by Public Law 106-390, October 2000.

44 CFR 350, Review and Approval of State and Local Radiological Emergency Plans and Preparedness,.

44 CFR 351, Radiological Emergency Planning and Preparedness,.

44 CFR 352, Commercial Nuclear Power Plants: Emergency Preparedness Planning.

National Response Framework, January 2008.

10 CFR 20, Standards for Protection Against Radiation.

EPA-400-R-92-001, Manual of Protective Action Guides and Protective Actions for Nuclear Incidents, May 1992.

Food and Drug Administration Accidental Radioactive Contamination of Human Food and Animal Feeds Recommendations for State and Local Agencies, August 1998.

Food and Drug Administration Guidance on Use of Potassium Iodide as a Thyroid Blocking Agent in Radiation Emergencies, December 2001.

United States Department of Agriculture Radiological Emergency Manual for Livestock, Poultry and Animal Products, December 1987.

West Virginia Emergency Operations Plan, February 2008.

West Virginia Radiological Emergency Preparedness Plan, February 2012.

West Virginia Division of Homeland Security and Emergency Management Standard Operating Procedure for BVPS, February 2012.

West Virginia Field Team Center Standard Operating Procedure, February 2012.

West Virginia Field Sampling Team Standard Operating Procedure, February 2012.

West Virginia Field Monitoring Team Standard Operating Procedure, February 2012.

WV Division of Homeland Security and Emergency Management REP Public Information Standard Operating Procedure, February 2012.

WV 15-5, State Emergency Services Act.

Radiological Emergency Information for Farmers and Food Processors in the State of West Virginia, February 2012.

West Virginia University Disaster Handbook for Extension Agents, As amended. West Virginia Emergency Alert System Plan, August 2010.

West Virginia Division of Health and Human Resources Bureau of Public Health Policy on Distribution and Use of Potassium Iodide, As amended.

Hancock County Radiological Emergency Response Plan, As amended. Beaver Valley Power Station Emergency Preparedness Plan, As amended.

**Appendix 4
NUREG Evaluation Criteria Crosswalk**

****The references for each Evaluation Criterion are for this plan only and are not all inclusive****

NUREG-0654/FEMA REP-1 Criterion	Description	Reference in Plan	
Assignment of Responsibility (Organization Control)	A.1.a	Agencies Identified in EPZ Response	
	A.1.b	Concept of Ops and Inter-relations	p. 2-3
	A.1.c	Block Diagram of Inter-relations	p. 3
	A.1.d	Individual in charge of Response	p. 3
	A.1.e	24-Hour Response/Communications	
	A.2.a	Responsibilities of Major Elements	
	A.2.b	Legal Basis for Such Authorities	p. 3
	A.3	Written Agreements Between Parties	p. 10
	A.4	24-Hour Operations and Responsibility	
Emergency Response and Support Resources	C.1.a	Title of Requester of Fed Assistance	
	C.1.b	Expected Federal Resources	
	C.1.c	Local Support for Feds	
	C.2.a	EOF Representatives Dispatched	
	C.3	Radiological Laboratories/Capability	
	C.4	Individuals Able to Assist in Nuclear	
Emergency Classification System	D.3	Classification Scheme Consistent	
	D.4	Actions Consistent with Recommendation	
Notification Methods and Procedures	E.1	Warning Points and Verification	
	E.2	Alerting/Mobilizing Personnel	
	E.5	Public Notification/EAS	
	E.6	Instructions to EPZ Public	
	E.7	Protective Action Instructions to Public	
Emergency Communications	F.1.a	24-Hour Communications/Response	
	F.1.b	Communications with EPZ Governments	
	F.1.c	Communications with Federal OROs	
	F.1.d	Communications with EOF	
	F.1.e	Alerting/Activating Personnel in OROs	
	F.2	Communication for Medical Support	
	F.3	Periodic Testing of Emergency Comm.	
Public Education and Information	G.1	Annual Info and Education	
	G.2	Annual Info and Education for Transients	
	G.3.a	Points of Contact for Media in Emergency	
	G.4.a	Spokesperson Designation	
	G.4.b	Exchange of Information for PIOs	
	G.4.c	Rumour Control Procedures	
	G.5	Annual Media Outreach	
Emergency Facilities and Equipment	H.3	Establish EOC	
	H.4	Activation of Facilities	
	H.7	Offsite Rad Monitoring Near Facility	
	H.10	Maintain Emergency Equipment	
	H.11	Appendix of Emergency Kits/Equipment	p. 9
	H.12	Central Receiving for Monitoring Data	

NUREG-0654/FEMA REP-1 Criterion	Description	Reference in Plan
Accident Assessment	I.7 Field Monitoring Capability	
	I.8 Methods of Rapid Assessment	
	I.9 Field Detection of Radioiodine in EPZ	
	I.10 Relating Measurements to Dose Rates	
	I.11 Locating/Tracking Airborne Plume	
Protective Response Protective Response (cont.)	J.2 Evacuation Route Provisions	
	J.9 Capability to Implement Protective Actions	
	J.10.a Route Maps with Sample Locations	
	J.10.b Map Showing Population Distribution	
	J.10.c Means for Notification to Entire Population	
	J.10.d Protection of Special Populations	
	J.10.e Provisions for Radioprotective Drugs	
	J.10.f Decision Method for Radioprotective Drugs	
	J.10.g Means of Relocation	
	J.10.h Relocation Centers 5mi from EPZ	
	J.10.i Traffic Capacities of Evacuation Routes	
	J.10.j Access Control to Evacuated Areas	
	Radiological Exposure Control	K.3.a Capability for 24-hour Dose Projection
K.3.b Dosimetry Read at Appropriate Intervals		
K.4 Decision Chain for Authorizing Higher Doses		
K.5.a Action Levels for Decontamination		
K.5.b Means for Decontamination		
Medical and Public Health Support	L.1 Local/Backup Medical Services	
	L.3 Hospitals Capable of Admitting Contaminated	
	L.4 Medical Transportation	
Recovery and Reentry Planning and Post Accident Operations	M.1 Reentry Plans/Procedures	
	M.3 Informing Public of Recovery Operations	
	M.4 Estimation of Population Exposure	
Drills and Exercises	N.1.a Exercises Require Offsite Response	
	N.1.b Mobilization of State Adequate to Emergency	
	N.2.a Monthly Communication Drills in EPZ	
	N.2.c Annual Medical Emergency Drill	
	N.2.d Annual Radiological Monitoring Drills	
	N.2.e Semi-Annual Health Physics Drills	
	N.3.a Identification of Basic Objectives for Drills	
	N.3.b Identification of Date, Time, and Place for Drills	
	N.3.c Identification of Simulated Events for Drill	
	N.3.d Identification of Schedule of Events for Drill	
	N.3.e Identification of Narrative Summary for Drill	
	N.3.f Description of Arrangements for Observers	
	N.4 Critique at the End of Drills/Exercises	
	N.5 Means of Corrections from Exercises	

NUREG-0654/FEMA REP-1 Criterion	Description	Reference in Plan	
Radiological Emergency Response Training	O.1	Training of Appropriate Individuals	
	O.1.b	Offsite Agency Training	
	O.4.a	Offsite Training Program for Directors	
	O.4.b	Offsite Training Program for Assessment	
	O.4.c	Offsite Training Program for Rad Monitoring	
	O.4.d	Offsite Training Program for Police/Fire	
	O.4.f	Offsite Training Program for Rescue	
	O.4.g	Offsite Training Program for Local EM	
	O.4.h	Offsite Training Program for Medical Persons	
	O.4.j	Offsite Training Program for Communicators	
	O.5	Annual Training/Retraining of Personnel	
Responsibility for Planning Effort: Development, Periodic Review, and Distribution of Emergency Plans	P.1	Planning Individuals Training	
	P.2	Planning Authority by Title	
	P.3	Plan Update Responsibility	
	P.4	Annual Update Provision	
	P.5	Revisions Communicated to Organizations	
	P.6	List of Support Plans	p. 10
	P.7	List of Required Procedures	p. 4-7, 10
	P.8	Table of Contents/Cross-Reference	p. 1, 13
	P.10	Quarterly Update of Telephone Numbers	