



**Incident Specific Annex 1
Nuclear/ Radiological Incident Response**

Coordinating Agency

West Virginia Division of Homeland Security and Emergency Management (WVDHSEM)

Support Agencies and Organizations

West Virginia Department of Military Affairs and Public Safety (WVDMAPS)
West Virginia Department of Agriculture (WVDA)
West Virginia Department of Transportation (WVDOT)
West Virginia Department of Environmental Protection (WVDEP)
West Virginia Department of Health and Human Resources (WVDHHR)
West Virginia Voluntary Organization Active in Disaster (WVVOAD)
West Virginia Public Service Commission (WVPSC)
U. S. Department of Homeland Security (DHS), Federal Emergency Management Agency (FEMA)
US Department of Energy (DOE)
U.S. Environmental Protection Agency (EPA)
West Virginia University (WVU)
U.S. Coast Guard

Purpose

A. This annex supplements the West Virginia Emergency Operations Plan (WVEOP) by addressing those unique or specialized response operations that will be necessary in the event of incidents involving a release of radioactive materials within or in proximity to the state that will then impact the state. It also defines West Virginia’s role in emergency operations to protect public health and safety, restore essential government services, and provide emergency relief to the victims of a nuclear/radiological incident.

B. This annex provides an overview of how the State will respond to a radiological emergency. Detailed response and technical data for fixed nuclear facilities (i.e. the Beaver Valley Power Station) can be found in the WV Radiological Emergency Preparedness Plan.

Scope

A. This annex applies to two categories of nuclear and radiological incidents: inadvertent or otherwise accidental releases and releases related to deliberate acts. These incidents may also include a potential release of radioactive material that poses an actual or perceived hazard to public health, safety, national security, and/or the environment. The category covering inadvertent releases includes fixed nuclear facilities, lost radioactive material sources, transportation accidents involving nuclear/radioactive material, and nuclear weapons accidents. The second category includes, but is not limited to, a response to the effects of deliberate attacks perpetrated with radiological dispersal devices, nuclear weapons, or improvised nuclear devices.

B. Additionally, this annex:

Provides for warning the public and the implementation of protective actions required during a radiological emergency.

Provides guidance to agencies of the State government as to their emergency preparedness and operating responsibilities in preparing for and coping with a radiological emergency in order to minimize radiation exposure and environmental contamination.

Provides a basis for the preparation of detailed Radiological Emergency Response Plans, procedures, and training programs by agencies of the state government.

Assigns responsibilities to state agencies and local jurisdictions in radiological emergency response and preparedness.

Establishes procedures for reporting and disseminating warnings regarding radiological emergencies.

Specifies immediate response procedures by state and local jurisdictions to the four Nuclear Regulatory Commission (NRC), Federal Emergency Management Agency (FEMA)-defined emergency action levels.

Delineates the policies and concepts under which state and local jurisdictions will operate during a radiological emergency response.

Policies

A. Fixed nuclear facilities are required by federal regulations to develop and implement emergency preparedness plans for the facility as a condition of the facility operating license. These plans are required to handle both conventional and nuclear emergencies. In the case of nuclear generating stations, Title 10 of the Code of Federal Regulations, Part

50, (10CFR50), and Nuclear Regulatory Commission (NRC) NUREG-0654 establish requirements for the content of the emergency preparedness plans. While the fixed facility is primarily responsible for onsite planning, it is also necessary for them to coordinate with local and state governments to assist in developing county and state emergency plans.

B. This annex is intended to be consistent with the WVEOP, the National Response Framework (NRF), and the National Incident Management System (NIMS).

C. All agencies assigned responsibilities within this annex will develop and maintain the necessary plans, standard operating procedures, and mutual aid agreements to successfully accomplish their tasks.

D. Certain federal agencies are authorized to respond directly to specific nuclear/radiological incidents. Nothing in this annex alters or impedes the ability of federal departments and agencies to carry out their specific authorities and perform their responsibilities under law. This annex does not create any new authorities nor change any existing ones.

E. WVDHSEM is responsible for the development and maintenance of this annex.

Situation

A. A radiological incident is one of the most technical and complex emergencies which can threaten the state. The risk from a radiological incident is due to the harmful effects of ionizing radiation, which cannot be detected by the human senses. Radiological materials released into the environment can be disabling or fatal as the result of direct exposure or ingestion of contaminated water or food. Radiation-induced health hazards vary according to the magnitude of exposure.

B. A nuclear/radiological incident may result from a deliberate act, an accident, or general mismanagement, and may involve different materials or industrial practices, including:

- Commercial nuclear facilities.
- Federal nuclear weapons facilities.
- Radioactive material sources, industrial uses, or technologically enhanced, naturally occurring radioactive material.
- Transportation incidents involving nuclear/radioactive material.
- Domestic nuclear weapons accidents.
- Foreign incidents involving nuclear or radioactive materials.

- Acts of Terrorism involving facilities or nuclear/radiological materials.

C. The most common nuclear/radiological incidents have to do with the loss, theft, or mismanagement of relatively small radioactive material sources, or technologically enhanced, naturally occurring radioactive material, where some exposure of individuals or dispersal into the environment occurs. These are handled at the local level with occasional federal assistance. Generally, greater regulatory control, safeguards, and security accompany larger quantities of radioactive materials, which pose a greater potential threat to human health and the environment.

D. Virtually any facility or industrial practice (including transportation of materials) may be vulnerable to a deliberate act, such as terrorism, or an accident of some sort that can release radioactive material, including a fire.

E. A Radiological Dispersal Device (RDD) is any device used to spread radioactive material into the environment with malicious intent. The harm caused by an RDD is principally contamination, and denial of use of the contaminated area, perhaps for many years. The costs to the nation associated with an effective RDD could be very significant. Of greatest concern to state and overall U.S. security is the potential for a terrorist attack using a nuclear weapon. A nuclear device can potentially originate directly from a nuclear capable nation state, be modified from preexisting weapons components, or be fashioned by non-state terrorists from the basic fissile nuclear materials (uranium-235 or plutonium-239). Even a small dirty bomb or actual nuclear detonation in an urban area can potentially result in over 100,000 fatalities (and many more injured), massive infrastructure damage, and thousands of square miles of contaminated land.

Planning Assumptions

A. Radiological incidents may not be immediately recognized as such until the radioactive material is detected or the health effects of radiation exposure are manifested in the population and identified by the public health community.

B. An act of nuclear or radiological terrorism, particularly an act directed against a large population center within the United States, can have major consequences that can overwhelm the capabilities of many local and state governments to respond, and may seriously challenge existing federal response capabilities.

C. An incident involving the potential release of radioactivity may require implementation of protective measures, such as evacuation and shelter-in-place. State and local jurisdictions have primary responsibility for implementing protective measures for the public.

D. In the case of a nuclear terrorist attack, the plume may be dispersed over a large area over time, requiring response operations to be conducted over a multijurisdictional and/or multistate region.

E. A terrorist attack may involve multiple incidents, and each location may require an incident response and a crime scene investigation simultaneously.

Organizational Structure

A. State government emergency operations are a supplement to, not a substitute for, the county efforts. Once a situation develops to a point that the county emergency management organization cannot effectively handle the situation or needs assistance above and beyond the county's capabilities, they will reach out for state resources. State resources will be utilized in accordance with the WVEOP, unless otherwise directed by the Governor or the WVDHSEM Director.

B. The state organization for response to radiological emergencies is the same as that for other incidents and events.

C. The WVDHSEM is the coordinating agency for the State of West Virginia in times of emergencies. In the event of a nuclear/radiological emergency it will be the responsibility of the WVDHSEM to verify the emergency, notify, and coordinate with all other state agencies necessary to handle the emergency. If the situation dictates, WVDHSEM will activate the West Virginia State Emergency Operations Center (WVSEOC) and through FEMA Region III, obtain federal assistance.

Concept of Operations

A. General

1. The owner/operator of a nuclear/radiological facility or materials is primarily responsible for mitigating the consequences of an incident; providing notification and appropriate protective action recommendations to State and local jurisdiction officials; and minimizing the radiological hazard to the public. For incidents involving fixed facilities, the owner/operator has primary responsibility for actions within the facility boundary and may also have responsibilities for response and recovery activities outside the facility boundary under applicable legal obligations (e.g., contractual; licensee; Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)).

2. For areas surrounding a nuclear/radiological incident location, State and local jurisdictions have primary responsibility for protecting life, property, and the environment. This does not, however, relieve nuclear/radiological facilities or material owners/operators from applicable legal obligations.

3. State and local jurisdictions and owners/operators of nuclear/radiological

facilities or activities should request assistance through established regulatory communication and response protocols. However, they may request assistance directly from DHS, other federal agencies, and/or state governments with which they have preexisting arrangements or relationships, providing that the agency with regulatory authority is also notified.

B. Notification

1. The owner/operator of a nuclear/radiological facility or owner/transporter of nuclear/radiological material is generally the first to become aware of an incident and notifies State and local authorities and the coordinating agency.
2. State and local jurisdictions that become aware of a radiological incident should notify the coordinating agency and the DHS National Operations Center (NOC) at 202-282-8101 and comply with other appropriate statutory requirements for notification. For example, releases of reportable quantities of any listed hazardous materials as described within 40 CFR Part 302 must be reported to the National Response Center at 1-800-424-8802.
3. Further, State and local law enforcement agencies should continue to contact the local FBI/Joint Terrorism Task Force regarding ongoing terrorist activities, events, instances, or investigations. The coordinating agency provides notification of a radiological incident to the NOC and other federal agencies, as appropriate. When West Virginia requests radiological assistance directly from a federal agency for a nuclear/radiological incident that falls under the jurisdiction of another agency, then that federal agency will notify the coordinating agency of the request.
4. The following four emergency classification levels have been established for the purpose of reporting and defining pre-planned actions to be taken in response to emergencies at fixed nuclear facilities:
 - a. Notification of Unusual Event
 - 1) An incident has occurred that may result in degradation of the level of safety of the plant. No releases of radioactive material requiring off-site response or monitoring are expected unless further degradation of safety systems occurs.
 - 2) An incident has occurred that potentially or actually threatens the safety of the plant, personnel, or site equipment. This may be a security event involving hostile actions. Any releases expected to be limited to small fractions of the EPA Protective Action Guidelines exposure levels.

b. Site Area Emergency

An incident has occurred that involves actual failures of plant functions needed for protection of the public. This includes security events that result in intentional damage or malicious acts. Any releases not expected to exceed EPA Protective Action Guidelines exposure levels except near site boundary.

c. General Emergency

An incident has occurred that involves actual or imminent substantial core degradation or melting. There is a potential for loss of containment integrity. Releases can be reasonably expected to exceed EPA Protective Action Guidelines exposure levels off-site for more than the immediate site area.

C. Activation

1. Response to a notification of Unusual Event is normally within the capabilities of the affected county's emergency organizations and resources; therefore, activation of the West Virginia State Emergency Operations Center (WVSEOC) is unlikely.
 2. After notification of the Alert Level, WVDHSEM will initiate activation of the WVSEOC which will include notification of appropriate state agencies and advising them of the possibility of fully activating the WVSEOC. WVDHHR personnel will be put on notice. If the situation becomes more serious, the WVSEOC will be fully activated according to the standard operating procedures for the WVSEOC and appropriate state personnel deployed. Additionally, the Governor's Office and FEMA Region III will be notified and kept up-to date regarding the situation.
 3. After notification of a Site Area Emergency or General Emergency, the WVSEOC will be fully activated and state personnel deployed as appropriate. The Governor's Office will be informed and kept up-to-date regarding the situation. WVDHSEM will notify FEMA Region III. If additional personnel are needed to assist with an evacuation, they will be activated and deployed. Reception Centers will be manned and made ready to receive evacuees in accordance with the county's plan.
 4. The WVSEOC will be activated according to the procedures outlined in the West Virginia Emergency Operations Center Standard Operating Procedures.
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Agency Responsibilities Matrix

Supporting Agency	Acronym	Responsibilities
West Virginia Division of Homeland Security and Emergency Management	WVDHSEM	<ul style="list-style-type: none"> • Notify and coordinate with all other State and Federal agencies necessary to handle the emergency • Activate the WVSEOC and obtain Federal assistance through FEMA Region III • Assist the Federal response in coordinating logistics as needed. • Provide assistance to local jurisdictions in organizing and developing educational material for the general population.
West Virginia Department of Military Affairs and Public Safety	WVDMAPS	<ul style="list-style-type: none"> • Provide radio communications, transportation support for evacuation, emergency shelters, and assistance in the protection of property as required. • Provide access control assistance for evacuation if necessary. • Provide radiological, decontamination, and mass care assistance and expertise through CST and CERF-P • Provide traffic control, security for the evacuated area, and related services as required • WVFSM Prepare and train local Fire Departments for response
West Virginia Department of Health and Human Resources	WVDHHR	<ul style="list-style-type: none"> • Develop and maintain a radiological monitoring system • Assess the situation and advise the Governor, WVDHSEM and local officials of the potential radiation problems to the general public and to make recommendations on the necessary action for the protection of the public • Provide the necessary personnel to the WVSEOC to perform dose assessment calculations necessary for providing protective action recommendations • Coordinate acquisition of technical information and data needed to perform dose assessments. • Maintain a list of radiological laboratories; their capabilities and expected response times for use during emergencies, and additional facilities, organizations and individuals which can be relied upon during emergencies • Assist, as needed, with public information • Secure assistance for local transport of victims to hospitals in nearby counties if the needs exceed the capacity of the affected region • Population and Air Monitoring • Assist with coordination of Community Reception • Provide behavioral health services • Support medical countermeasures as needed • Support decontamination operations

West Virginia Department of Agriculture	WVDA	<ul style="list-style-type: none"> Specify the protective measures to be used to protect the public from consumption of contaminated food stuffs Identify procedures for detecting contamination, for estimating the dose commitment consequences of uncontrolled ingestion, and for imposing protection procedures such as impoundment, decontamination, processing, decay, product diversion, and preservation.
West Virginia University Extension Agency	WVUEA	<ul style="list-style-type: none"> Aid the community in the implementation of protective actions, and in the location and availability of uncontaminated livestock feeds Assist in determining sample location sites
West Virginia Department of Transportation	WVDOT	<ul style="list-style-type: none"> Provide communications and transportation assistance in the event of an evacuation Assisting with public information, as needed, through road blockages and directional signage at traffic control points Coordinate the federal transportation response in support of transportation plans and actions of State and local authorities. Provide, through regional emergency transportation coordinators, representation to State and local transportation authorities. Direct air traffic in and around the affected area.
West Virginia Department of Environmental Protection	WVDEP	<ul style="list-style-type: none"> Provide field deployable personnel experienced in sample collection procedures WVDEP Public Information Officer (PIO) may assist the WVDHSEM PIO Supplement manpower at the WVSEOC and facility Emergency Operations Facility (EOF) during activations.
West Virginia University	WVU	<ul style="list-style-type: none"> Provide radiological health support and field radiological assessment team members to augment the WVDHHR.
Marshall University	MU	<ul style="list-style-type: none"> Provide radiological health support to the WVDHHR
Federal Emergency Management Agency	FEMA	<ul style="list-style-type: none"> Serves as the primary point of contact for requests for federal assistance from state officials and other federal agencies. Provide a Federal Coordinating Officer (FCO) to coordinate and ensure the provision of appropriate non-technical assistance, including telecommunications support, requested by Federal, State and local agencies. Serve as the primary point of contact and coordination between the NRC and other federal agencies for non-technical response activities. Coordinate the dissemination of all public information concerning federal non-technical emergency response activities and ensure that public information releases are coordinated with state/local authorities and the NRC. Establish an interagency public affairs group.

		<ul style="list-style-type: none"> Review and integrate all federal agency implementation plans to ensure that all required actions and interfaces are adequately addressed.
Nuclear Regulatory Commission	NRC	<ul style="list-style-type: none"> Coordinate the technical response activities of the licensee, Department of Energy (DoE), and other federal agencies. Provide technical advice to state/local agencies. Develop, for state and local agencies, a federal technical recommendation on protective actions, which reflects all substantive dissenting views of other federal agencies and the licensee. Participate with the FCO in discussing federal recommendations for protective actions with appropriate state/local officials, except in situations of imminent peril to the public health and safety where the NRC may be required to make direct contact with appropriate state/local officials regarding recommendations for protective actions. Ensure that the NRC's radiological monitoring activities are coordinated with DoE's offsite technical director. Coordinate the release of public information concerning the federal technical response, including the status of the reactor, radiological monitoring activities and other federal technical support and ensure that such releases are coordinated with the state(s), FEMA and the licensee. Assess the nature and extent of the radiological accident and the potential offsite consequences to the health and safety of the public.
Department of Energy and Federal Radiological Monitoring and Assessment Center	DOE/FRMAC	<ul style="list-style-type: none"> Coordinate the offsite radiological monitoring, assessment, evaluation, and reporting activities of all federal agencies during the initial phases of an accident, and maintain a technical liaison with state and local agencies with similar responsibilities. Ensure the orderly transfer of responsibility for coordinating the intermediate and long-term radiological monitoring function to EPA after the initial phases of the emergency at a mutually agreeable time. Provide the personnel, including the offsite technical director, and equipment required to coordinate and perform the offsite radiological monitoring and evaluation activities. Assist the NRC in assessing the accident potential and in development. Maintain a common set of all offsite radiological monitoring data and provide this data and interpretation to the NRC and to appropriate state and local agencies requiring direct knowledge of radiological conditions. Provide consultation and support services to all other entities (e.g., private contractors) having

		<p>radiological monitoring functions and capabilities.</p> <ul style="list-style-type: none"> • Assist the U.S. Department of Health and Human Services (HHS) and other Federal, State and local agencies providing technical and medical advice concerning treatment of radiological contamination. • Provide telecommunications support and interface with nuclear emergency search team (nest) capabilities as provided for by existing NRC/DoE agreements. • Assist other federal agencies in developing and establishing guidelines on effective systems of emergency radiation detection and measurement, including instrumentation. • Review and integrate agency radiological monitoring plans into the federal radiological monitoring and assessment plan.
Department of Agriculture	USDA	<ul style="list-style-type: none"> • Assist the NRC, in coordination with HHS, in developing technical recommendations for State and local officials regarding protective measures related to food and animal feed. • Assist State and local officials, in coordination with HHS, on the implementation of protective actions to minimize contamination through food ingestion. • Provide guidance to State and local officials on how to minimize losses to agricultural resources from radiation effects. • Monitor, in coordination with HHS, emergency production, processing, and distribution of food resources during a radiological accident. • Assure the safety and wholesomeness of agricultural products in establishments under federal inspection and agricultural commodities and products owned by the commodity credit corporation/USDA. • Assist in providing lists of uncontaminated livestock feed to replace contaminated feed and pasture. • Provide advice on and assist state/local officials in the disposition of food animals affected by radiation in coordination with the EPA and HHS. • Provide a mechanism to state agricultural agencies to keep state/local officials informed of federal efforts. • Provide a representative to HHS to facilitate cooperation between USDA and HHS. • Provide national radio fire cache assistance under provision of NRC/forestry service agreements.
Department of Commerce	DOC	<ul style="list-style-type: none"> • Estimate the damage to industrial resources and recommend actions to deal with industrial sector problems. • Provide current and forecast meteorological information about wind direction and speed,

		<p>boundary layer mixing, precipitation, and any other meteorological and hydrological parameters affecting radiological contamination.</p> <ul style="list-style-type: none"> • Provide gamma radiation level readings from national weather service offices as requested by DoE. • Provide a representative to both the onsite and offsite radiological monitoring agencies as required (i.e., DOE and NRC) to coordinate meteorological operations, provide meteorological and hydrological information, and arrange for supplemental meteorological measurements.
Department of Defense	DOD	<ul style="list-style-type: none"> • Provide military assistance, in the form of manpower, technical support, and logistical support, including airlift services and telecommunications support, as requested by FEMA, under the NRF.
U.S. Department of Health and Human Services	HHS	<ul style="list-style-type: none"> • Coordinate the federal health service response. • Assist the NRC, in coordination with USDA, in developing technical recommendations for State and local jurisdiction officials regarding protective actions related to food and animal feed. • Provide assistance to State and local officials on the use of prophylactic drugs to minimize the radiation doses of affected persons. • Provide advice and guidance to State and local officials in assessing the impact of the offsite consequences of radiological accidents on the health of persons in the affected area. • Provide advice to medical care personnel regarding proper medical treatment of people exposed to or contaminated by radioactive material. • Ensure the capability of public health service hospitals to respond to radiological accidents. • Conduct epidemiological surveys and implement communicable disease control measures.

Authorities & References

Authorities

WV Code §15-5, State Emergency Services Act

Department of Defense (DOD) Directive 5100.52, "DOD Response to An Accident or Significant Incident Involving Radioactive Materials," December 21, 1989

Title 10, Chapter 1, Code of Federal Regulations

Title 44, Chapter 1, Code of Federal Regulations

References

WV Division of Homeland Security and Emergency Management, WV Radiological Emergency Preparedness Plan and West Virginia Radiological Emergency Preparedness (REP) Public Information Standard Operating Procedure, February 2012

National Response Framework (NRF)

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

NUREG-0654/FEMA-REP-1 - Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants, U.S. Nuclear Regulatory Commission/Federal Emergency Management Agency, Revision 1, November 1980

Nuclear Weapon Incident Response Procedures (NARP) Manual, Defense Nuclear Agency (DNA), September 1990