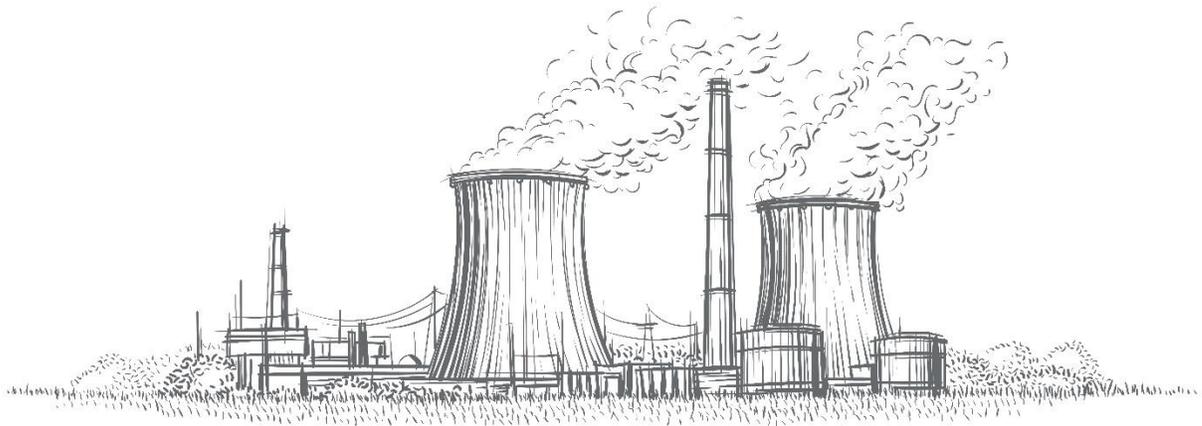


**2024**

**State of Ohio**

**Radiological Emergency  
Preparedness (REP) Plan**



**January 31, 2024**

# Plan Overview

## Introduction



The State of Ohio is within the 10-mile Emergency Planning Zone (EPZ) for Davis-Besse Nuclear Power Station (DBNPS) and Perry Nuclear Power Plant (PNPP) in Ohio, Beaver Valley Power Station (BVPS) in Pennsylvania, and Fermi 2 Power Plant (Fermi 2) in Michigan.

The Ohio Radiological Emergency Preparedness (REP) Plan defines the State of Ohio's roles, responsibilities, and resources. Its purpose is to identify how to best protect the health and safety of the citizens of Ohio as well as their property in the event of an emergency at a nuclear power plant (NPP).

The 2024 Ohio REP Plan was written to comply with NUREG-0654 FEMA-REP-1 Rev 2, 2019 and the 2019 REP Program Manual (RPM).

The Ohio REP Plan is supported by a set of Standard Operating Procedures (SOP) with detailed instructions that provide additional details to meet some of the intent of the Planning Standard Criteria of the 2019 RPM.

The Ohio REP Plan is available online at <https://ema.ohio.gov/prepare-respond/state-plans/radiological-plan>. Supporting procedures are available on the Ohio Emergency Management Agency's (Ohio EMA) SEOC shared drive. The SEOC drive is available to all Ohio EMA personnel and all computers in the State Emergency Operations Center (EOC) using the individual computer's dedicated State EOC log information.

Actions within the Ohio REP Plan are unlikely to be performed in one particular order. The order of activities will vary dependent upon personnel on duty, the event, and priorities. The lists of actions in this document are not meant to be all-inclusive. Dependent upon circumstances, some response activities may occur virtually.

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<sup>1</sup> NUREG-0654/FEMA-REP-1 R2 Criterion P.8.i

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# I. Planning Standard A

## Assignment of Responsibility



Primary responsibilities for emergency response by the nuclear facility licensee and by State and local organizations within the Emergency Planning Zones (EPZ) have been assigned, the emergency responsibilities of the various supporting organization have been specifically established, and each principal response organization has staff to respond and to augment its initial response on a continuous basis. [Regulatory References: 10 CFR 50.47(b)(1); 44 CFR 350.5(a)(1)]

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### A. Authorities

The following are State Codes that key individual state agencies operate under:

1. Ohio Department of Public Safety (DPS)
  - a. Ohio Emergency Management Agency (Ohio EMA)
    - i. Ohio Revised Code (ORC) Title 55, Roads-Highways-Bridges; Chapter 5502, Department of Public Safety
    - ii. Ohio Administrative Code (OAC) Chapter 4501:3, Emergency Management Agency
  - b. Ohio State Highway Patrol (OSHP)
    - i. ORC Title 55, Roads-Highways-Bridges; Chapter 5502, Department of Public Safety
    - ii. OAC 4501:2, State Highway Patrol
2. Ohio Department of Agriculture (ODA)
  - a. ORC Title 9, Agriculture-Animals-Fences; Chapter 901, Department of Agriculture
  - b. ORC Title 37, Health-Safety-Morals; Chapter 3715, Pure Food and Drug Law
  - c. OAC 901, Department of Agriculture
3. Ohio Department of Health (ODH)
  - a. ORC Title 37, Health-Safety-Morals
    - i. Chapter 3701, Department of Health
    - ii. Chapter 3748, Radiation Control Program
  - b. OAC 3701, Department of Health
4. Ohio Department of Natural Resources (ODNR)
  - a. ORC Title 15, Conservation of Natural Resources
    - i. Chapter 1501, Department of Natural Resources - General Provisions

- ii. Chapter 1533, Hunting; Fishing
    - iii. Chapter 1547, Watercraft and Waterways
  - b. OAC 1501, Department of Natural Resources
- 5. Ohio Department of Transportation (ODOT)
  - a. ORC Title 55, Roads-Highways-Bridges; Chapter 5501, Department of Transportation
  - b. OAC 5501, Department of Transportation
- 6. Ohio Environmental Protection Agency (Ohio EPA)
  - a. ORC Title 37, Health-Safety-Morals; Chapter 3745, Environmental Protection Agency
  - b. ORC Title 61, Water Supply-Sanitation-Ditches
    - i. Chapter 6109, Safe Drinking Water
    - ii. Chapter 6111, Water Pollution Control
  - c. OAC 3745, Environmental Protection Agency
- 7. Ohio Governor’s Office
  - a. ORC Title 1, State Government; Chapter 107, Governor
  - b. ORC Title 59, Veterans-Military Affairs; Chapter 5919, Ohio National Guard
  - c. OAC 107, Office of the Governor
  - d. Ohio Constitution, Article III, Section 5
  - e. Ohio Constitution, Article IX, Section 4
- 8. Adjutant General’s Office/Ohio National Guard (OHNG)
 

ORC Title 59, Veterans-Military Affairs; Chapter 5919, Ohio National Guard
- 9. Public Utilities Commission of Ohio (PUCO)
  - a. ORC Title 49, Public Utilities
  - b. OAC 4901, 4901:2, 4901:3 Public Utilities Commission of Ohio
- 10. Miscellaneous
  - a. ORC Title 1, State Government; Chapter 121, State Departments
  - b. ORC Title 49, Utility Radiological Safety; Chapter 4937, Utility Radiological Safety

## **B. Authorizations**

- 1. Governor and the Governor’s Designee
  - a. The Governor has the authority and responsibility for emergency response in the State of Ohio.

- b. Through ORC 5502.22, the Governor designates the Executive Director of the Ohio EMA as their designee to provide direction and control, and to carry out the State's emergency response to protect the public's health, safety, and property during an incident at an NPP affecting Ohio.
  - c. The Governor, or their designee, has the authority to request support from all levels of government, non-governmental organizations (NGOs), or the private sector.
2. Federal Support Requests
- a. The Governor has authorized designated Ohio EMA officials to request federal assistance and make requests for federal emergency and disaster declarations.
  - b. When warranted by plant conditions and other situational information, the Ohio EMA, on behalf of the Governor, may request federal assistance, as needed.
  - c. Ohio EMA, on behalf of the Governor, may also request a Presidential Declaration of Emergency and/or Major Disaster when warranted by the extent of the incident, evacuations, or a radiological release from an affected NPP.
  - d. The Ohio EMA personnel authorized to request federal assistance from the U.S. Department of Energy (DOE) and the U.S. Nuclear Regulatory Commission (NRC) are the:
    - i. Executive Director
    - ii. Assistant Director
    - iii. Administration Administrator
    - iv. Operations Administrator
    - v. Radiological Branch Chief
  - e. The Ohio EMA personnel authorized to request federal assistance from the Federal Emergency Management Agency (FEMA) are the:
    - i. Executive Director
    - ii. Assistant Director
    - iii. Administration Administrator
    - iv. Operations Administrator
    - v. Recovery Branch Chief

### **C. Nuclear Power Plant Responsibilities**

1. The NPPs will provide timely notification to state and county agencies of emergency classifications.
2. Pertinent data from onsite and offsite radiological monitoring, as well as current dose assessment data, will be made available to State Dose Assessment staff.

3. The NPPs are responsible for providing timely and appropriate Protective Action Recommendations (PARs) to the State and counties for offsite protective response actions in the 10-mile EPZ.
4. Each NPP will provide and maintain equipment necessary for State response at the Emergency Operations Facility (EOF).
5. The NPPs will provide the facility management, telecommunications equipment, and a fax machine at the Utility's Joint Information Center (JIC).
6. A Utility Liaison will be provided to the State EOC Dose Assessment to give updates and insight on plant status and to assist State officials with technical information.

#### **D. Virtual Response**

1. In 2020, the Coronavirus Disease 2019 (COVID-19) changed the way the world communicates. The State of Ohio demonstrated that while not ideal, virtual response to a nuclear power plant emergency is in the realm of possibility.
2. Microsoft Teams is used as the method to communicate between the State and other organizations. Documents can be shared and discussed with someone down the hall, in another part of the state, or across the country.
3. The current emergency response philosophy includes a blending of both in-person experience and virtual convenience. It is a scalable response and allows responders to move between the two.

#### **E. Governor of Ohio**

1. The Governor, through the Executive Director of Ohio EMA, is responsible for overall decision-making and coordination of state emergency operations.
2. The Governor has designated Ohio EMA as the planning and implementing agency for radiological response.
3. The Governor may issue orders, directives, and declarations appropriate to facilitate state support to local officials. The General Assembly has oversight of emergency declarations made by the Governor and any rules or directives issued by state agencies in relation to an emergency.
4. If determined the situation is beyond local resources or when the Emergency Classification Level (ECL) reaches a Site Area Emergency (SAE), the Governor may declare a "State of Emergency." A "State of Emergency" allows:
  - a. State resources to be utilized to assist local officials.
  - b. The Governor to activate the OHNG to assist local authorities to protect the lives, safety, health, and property of the public in the affected areas.
  - c. Suspension of the purchasing and contracting requirements contained in Chapters 125 and 153 of the ORC for Ohio EMA and any other state agency participating in response and recovery activities in relation to the emergency.

5. If determined the situation is beyond the state’s resources, the Governor may request disaster and recovery assistance from the President by requesting a federal “emergency” or “major disaster” declaration, or both, as appropriate for the incident.
6. The Office of the Governor may provide representatives to the State EOC and/or Utility JIC.

## **F. Department of Public Safety (DPS)**

### 1. Ohio Emergency Management Agency

#### a. Planning

##### i. Responsibilities

Ohio EMA will:

- 1) Serve as the agency responsible for the development and maintenance of the State of Ohio Emergency Operations Plan (EOP), its Tabs, the Emergency Support Function (ESF) supporting documents, and the supporting Annexes.
- 2) Serve as the lead planning agency for the development and maintenance of the State of Ohio REP Plan and Ohio EMA’s radiological emergency procedures, including NPP-related State JIC and Utility JIC procedures.
- 3) Develop and maintain procedures for positions in the State EOC held by Ohio EMA personnel.
- 4) Assist and coordinate in the planning process to enable county officials to fulfill their responsibilities for pre-disaster planning, training, and emergency response.
- 5) Determine which state agencies should perform specific tasks within their capabilities and ensure assignment of responsibilities.
- 6) Prepare and submit the Annual Letter of Certification (ALC).
- 7) Chair the Utility Radiological Safety Board (URSB).
- 8) Maintain the State EOC in a state of readiness.
- 9) Maintain WebEOC, the emergency management software utilized by the State of Ohio to track key components of any emergency.
- 10) Attend and facilitate the Nuclear Power Plant Emergency Phase (NPPEP) and Ingestion Zone Reentry and Recovery Advisory Group (IZRRAG) meetings.

##### ii. Letters of Agreement (LOAs)

- 1) Ohio EMA will sign LOAs or Memorandum of Understandings (MOUs) with agencies in advance of an event in order to define the response or aid that will be received during an NPP emergency.

Note: Refer to Appendix D for available LOAs.

- 2) LOAs include details on what services will be provided, how the agreements will be activated, and 24-hour contacts.

- 3) LOAs are reviewed annually to verify their validity. LOAs generally remain in effect until one party chooses to change or revoke the agreement.
- 4) Signatories will be updated, as needed.

iii. Staffing

Ohio EMA will provide:

- 1) A Radiological Branch Chief who will be responsible for the State of Ohio REP program.
- 2) Radiological Analysts in Columbus, Ohio to perform maintenance of the Ohio REP Plan, compile the ALC report, plan and execute exercises, develop web-based and in-person training, support the URSB, and other duties.
- 3) Resident Radiological Analysts (RRAs) to live near and work full-time in Columbiana County, Lake County, and Ottawa County.
  - a) RRAs will distribute and exchange calibrated instruments, dosimetry and Potassium Iodide (KI) to identified emergency service locations in their areas.
  - b) The RRAs will assist the risk counties in emergency planning and training of emergency workers.
- 4) Radiological Instrument Technicians in the Radiological Instrument Maintenance and Calibration (RIM&C) Laboratory.
- 5) Supervisors for the Radiological and Resident Radiological Analysts as well as for the RIM&C Technicians.
- 6) A Geographic Information Systems (GIS) Operator.
- 7) Leadership and a designee to the URSB.

iv. RIM&C Laboratory

The RIM&C Laboratory will:

- 1) Maintain and calibrate radiological equipment and instrumentation.
- 2) Provide calibrated radiological equipment to risk and host counties annually.
- 3) Inspect, inventory, and operationally check the radiological equipment to be used by the Field Monitoring Teams (FMT) quarterly and after each use.
- 4) Maintain sufficient reserves of equipment to replace any that must be removed from operation.
- 5) Ensure an arrangement is in place for the reading of emergency worker permanent record dosimeter (PRD) by a process accredited by the National Voluntary Laboratory Accreditation Program (NVLAP) or other accreditation in accordance with American National Standards Institute Standard N13.11-1983.
- 6) RIM&C Laboratory Radiological Instrument Technicians will receive training to become proficient in the maintenance and calibration of radiological instruments.

b. Training

iii. Ohio EMA will:

- 1) Train personnel to staff the various positions in the State EOC under its responsibility, including the JIC, Assessment, Dose Assessment, and Operations.
- 2) Train personnel, both internal and external to Ohio EMA, in the use of WebEOC.
- 3) Ensure ESF-7 staff remain proficient in the use of the Emergency Management Assistance Compact (EMAC) process.
- 4) Participate in all full and partial participation NPP exercises as well as ingestion phase drills and exercises.

iv. The Ohio EMA Radiological Branch will:

- 1) Develop radiological emergency training. Some training will be further developed into a web-based training.
- 2) Consider hosting appropriate federal training programs.
- 3) Conduct training for facilities within the 10- or 50-mile EPZ, e.g. healthcare facilities, in radiological emergency response planning.
- 4) Develop radiological monitoring capability by training local responders.
- 5) Ensure FMTs and related positions receive training in procedures, proper survey techniques, collection of samples, and contamination control as well as the use of CBRNResponder.
- 6) Ensure personnel filling NPP emergency-specific positions (e.g., Executive Room Liaison) receive relevant training.
- 7) Participate in the planning and development of NPP drills and exercises.
  - a) Exercise planners will work with a planning team to develop exercise play, including injects, for the State.
  - b) Controllers and FMT Controllers will be provided training prior to exercises.
  - c) Executive Room roles training for Executives will be provided prior to every exercise.
- 8) Participate in full and partial participation NPP exercises, if not part of the planning team.
- 9) Receive adequate radiological emergency preparedness and response training to be proficient and capable of supporting the REP program.

c. Daily Operations

iii. Ohio EMA Watch Office

- 1) Ohio EMA will assign the Radiological Branch Chief responsibility for maintaining 24-hour NPP communication capabilities in conjunction with the Ohio EMA Watch Office and the Ohio State Highway Patrol (OSHP).

- a) The Ohio EMA Watch Office will staff and maintain the state’s primary point of contact for notification of nuclear power plant emergencies.
    - i) Contact will be made by the NPP through dedicated phone lines.
    - ii) Backup communications are available through Multi-Agency Radio Communication System (MARCS) radios, commercial phones, satellite phones, cell phones, email, and fax machines.
    - iii) The Watch Chief is responsible for managing this emergency response function. They will maintain a roster that is available upon request.
  - 2) The Watch Office is responsible for the subsequent notification of Ohio EMA management and specified emergency responders.
  - 3) If activated for an emergency, the Watch Office transitions into “Assessment.”
- d. Response
- i. General
    - 1) Ohio EMA will:
      - a) Serve as the primary agency for ESF-2, Communications and Information Technology; ESF-5, Information and Planning; ESF-7, Resource Support and Logistics; ESF-14, Recovery and Mitigation; and ESF-15, Emergency Public Information and External Affairs.
      - b) Serve as the general coordination point for utility, private and non-profit organizations, federal, state, and local governments.
      - c) Rosters
        - i) Ohio EMA will maintain an electronic personnel roster of current employees to contact and assign emergency functions within the State EOC.
        - ii) The roster will be maintained by the EOC Manager.
      - d) Shifts
        - i) Ohio EMA Shifts
          - (1) Shift schedules at the State EOC are not predetermined and will be created based upon:
            - (a) Exempt positions
            - (b) Non-exempt positions (for scheduling be
            - (c) Assignments requiring staffing
            - (d) Personnel qualified to staff the specified positions
            - (e) Availability of staff
            - (f) Normal working hours and after-hours opportunities

- (2) Shift schedules for remote activities at the County EOCs or the Utility EOF will be determined upon the facility’s schedule and availability of staffing.
  - (3) Shift schedules for FMTs, FMT Courier, and FMT Coordinator will typically be dependent upon daylight hours and the Sample Screeners’ shift schedule.
- Note: For more information, refer to Section VIII.B.2.g.
- (4) Ohio EMA will ensure there are provisions for outgoing staff to brief incoming staff on the status of the emergency and response activities occurring.
- ii) State EOC Shifts
    - (1) Ohio EMA will determine the operating hours of the State EOC.
    - (2) If the State EOC is operating 24 hours,
      - (a) The default State EOC shift is 8.5 hours allowing for a 30-minute overlap for transition briefing purposes. Shifts may be extended to twelve hours if there are personnel shortages or if prompted by activation conditions.
      - (b) It is the responsibility of the individual agency to determine what shift schedule their personnel will work.
  - b) Maintain individual “Teams” for BVPS, DBNPS, and PNPP in MS Teams.
    - i) A series of channels will be available in each Team providing a “room” for each location to communicate (e.g., State EOC Operations Floor, Executive Room, State JIC, etc.).
    - ii) Some channels may be designed to be public where any “team member” can join (e.g., State EOC Operations Floor) or private and restricted to specific team members (e.g., County Executive Room).
    - iii) Team members may be added at any time, as needed.
- 4) Responsibility for Continuity of Resources
- a) Command and Control – EOC Manager
  - b) Alert and Notification – ESF-5, Information and Planning Section Chief
  - c) Communications – ESF-2, Communications
  - d) Public Information – ESF-15, Ohio EMA Public Information Officer (PIO)
  - e) Accident Assessment – ESF-5, The Radiological Assessment Branch Director is responsible for ensuring continuity of Dose Assessment (Ohio EMA) staffing. The ESF-5, Field Monitoring Team Coordinator is responsible for maintaining the continuity of field monitoring operations.
  - f) Radiological Exposure Control – ESF-5, Field Monitoring Team Coordinator

5) Key Responsibilities

Note: Refer to Attachment I-H for Ohio EMA's key responsibilities.

ii. Emergency Phase

Staffing/Responsibilities

1) State EOC

Note: For State EOC Representatives, refer to Attachment II-A.

a) State EOC Executive Room

- i) Ohio EMA will provide the coordination for the Executive Room.
  - (1) The Executives consists of members of the Governor's cabinet and/or representatives of those agencies directly involved in response to an NPP incident.
  - (2) A representative from DPS Legal will be present.
  - (3) It may also include any cabinet member or representative from any department the Governor or EOC Director may request.
- ii) The Executives will:
  - (1) Provide direction and control of offsite emergency activities for the State in consultation with the Governor.
  - (2) Assist the Governor in approving and relaying PARs to the affected County Executive Group(s) based on information provided by Dose Assessment for the general public, institutionalized persons, and emergency workers.
  - (3) Issue orders, directives, and advisories, in consultation with the Governor and/or through legislative authority, appropriate to the facilitation of state responsibilities to county officials.
  - (4) Review and approve news releases before dissemination to the public.
  - (5) In the event of a fast breaker and ODH has not arrived at the State EOC to perform dose assessment or develop PARs, Ohio EMA may issue a PAR at GE.
  - (6) The PAR will match the utility's recommendation.
  - (7) KI may be recommended to the general public, institutionalized persons, and emergency workers.
  - (8) The Executive Room Liaison or Radiological Assessment Branch Director may provide assistance in developing and disseminating the PAR.

b) ESF-2

- i) Coordinate communications for responding state agencies.

- ii) Provide emergency communications support and other equipment to augment existing communication resources in the affected area.
- iii) Maintain a cache of MARCS radio for use.
- c) ESF-5
  - i) Assessment
    - (1) ESF-5, through Assessment, is responsible for the alert and notification of state partner agencies and federal agencies as determined by the NPP and the ECL.
    - (2) Either Assessment, the Operations Section Chief, or the Mission Controller will ensure Resource Requests are entered into WebEOC for the restriction of air, rail, and water traffic, when appropriate.
    - (3) Assessment maintains situational awareness of the emergency and issues regularly scheduled “SPOT” Reports to the State EOC partner agencies.
    - (4) Assessment issues a Situation Report to the Governor daily.
    - (5) GIS will provide mapping products, when requested.
  - ii) Dose Assessment
    - (1) Ohio EMA, in conjunction with ODH Bureau of Environmental Health and Radiation Protection (BEHRP), is responsible for the management of the Dose Assessment Room and/or Teams Dose Assessment channel.
    - (2) Ohio EMA will staff the Formal Line Communicator position in the Dose Assessment Room. Additional staff may be assigned to augment the Formal Line Communicator’s capabilities.
- d) ESF-7
 

ESF-7, Resource Support and Logistics staff will provide assistance to resolve identified shortfalls in resources.
- e) ESF-14
 

ESF-14, Recovery and Mitigation, will begin preparations for recovery needs.
- f) ESF-15
  - i) Ohio EMA will be responsible for the activation of the State JIC and will obtain adequate staffing for, at a minimum, a JIC Manager, State JIC PIO, JIC Writer, Social Media Manager, and JIC Administrative Support.
  - ii) Ohio EMA will be responsible for obtaining staffing for and mobilizing a Utility JIC PIO to be located at the Utility JIC.

- iii) Ohio EMA may provide staff for:
  - (1) A JIC Manager to assist in the State EOC JIC and to ensure processes continue smoothly and with minimal interruptions.
  - (2) A Public Information Officer (PIO) for the State EOC JIC.Note: These positions may be staffed by another State agency.
- iv) Ohio EMA will staff an JIC Administrative Support position to assist with the distribution and posting of news releases as well as other administrative duties.
- v) Ohio EMA may mobilize personnel from various agencies to staff the Public Inquiry hotlines.
- g) State EOC Operations
  - Operations will:
    - i) Manage the Operations Floor.
    - ii) Issue and track missions to State EOC partner agencies.
    - iii) Provide audio-visual and telecommunications support for the State EOC.
- 2) Remote Activities
  - a) ESF-5
    - i) FMT Coordinator
      - (1) The FMT Coordinator will manage the FMTs and their activities.
      - (2) The FMT Coordinator will coordinate the tracking and dispatching of State FMTs and the coordination with local FMTs, if applicable.
    - ii) FMTs
      - (1) FMTs will traverse to monitor and survey to locate a plume then, when advised, will take air samples.
      - (2) FMTs will provide prompt field radiological measurements that will assist in the development of dose assessment information and PARs.
    - iii) FMT Courier
      - The FMT Courier will retrieve samples from the FMTs and transport to Sample Screening for survey and shipping.
  - b) ESF-15
    - The Utility JIC PIO will:
      - i) Act as a conduit of information between the State JIC and the Utility JIC.

- ii) Participate in media briefings relaying information from the State JIC’s news releases and answering questions.
- iii) Relay Columbiana County’s news releases to the media during briefings and will take questions back for the county to answer.
- c) County EOC Liaison
 

A Resident Radiological Analyst will fill a liaison position at the County EOC to provide information and support to the County Executives and provide information to the State EOC. They will be located at Columbiana, Lake, or Ottawa County.
- d) Utility EOF Liaison
 

A Resident Radiological Analyst will fill a liaison position at the Utility EOF and provide plant information to the State EOC or the County EOC.
- e) Regional Liaison
 

An Ohio EMA Regional Liaison will be located at a County EOC to assist the County, as needed, and to monitor the State WebEOC.

iii. Intermediate Phase

Staffing/Responsibilities

1) State EOC

Note: For State EOC Representatives, refer to Attachment II-A.

a) State EOC Executive Room

The Executives will:

- i) Provide direction and control of offsite intermediate phase activities for the State in consultation with the Governor.
- ii) Assist the Governor in approving and relaying Intermediate Phase PARs to the affected County Executive Group(s) based on information provided by IZRRAG in relation to relocation, reentry, return, and recovery.
- iii) Issue orders, directives, and advisories, in consultation with the Governor and/or through legislative authority, appropriate to the facilitation of state responsibilities to county officials.
- iv) Review and approve news releases before dissemination to the public.

b) ESF-2

ESF-2 will continue to receive and assign missions with a focus on Communications.

- c) ESF-5
  - i) Assessment
    - (1) Assessment maintains situational awareness of the emergency and issues regularly scheduled “SPOT” Reports to the State EOC partner agencies.
    - (2) Assessment will issue a Situation Report to the Governor daily.
    - (3) GIS will assist to fulfill IZRRAG’s mapping needs
    - (4) GIS will assist to produce mapping showing various sample analysis results, grid surveys, and other dose assessment calculations.
  - ii) Dose Assessment
    - (1) Ohio EMA, in conjunction with ODH-BEHRP, is responsible for the management of the Dose Assessment Room and/or Teams Dose Assessment channel.
    - (2) The Radiological Assessment Branch Director will assist with the needs of Dose Assessment and will act as a liaison, as needed.
- d) ESF-7

ESF-7 will continue to receive and assign missions focusing on Logistics and relieving shortfalls.
- e) ESF-14
  - i) ESF-14 will assist in staffing FEMA Disaster Recovery Centers (DRC).
  - ii) ESF-14 will work with FEMA and manage Individual Assistance (IA) and Public Assistance (PA) programs.
  - iii) Ohio EMA will provide support for the ESF-14 Housing Task Force.
- f) ESF-15
  - i) The State JIC will develop news releases based on topics requested by the Executives.
  - ii) ESF-15 will issue news releases with information detailing Executive approved advisories prepared by IZRRAG.
  - iii) Public Inquiry will remain operational, as needed.
- g) State EOC Operations

Operations will:

  - i) Manage the Operations Floor.
  - ii) Issue and track missions to State EOC partner agencies.

h) IZRRAG

Ohio EMA will:

- i) Serve as a member of IZRRAG.
- ii) Provide assistance, as needed.
- iii) Provide a scribe to record activities and assist in the editing of advisories.
- iv) Provide GIS services, if needed.

2) Remote Activities

a) Field Team Center (FTC) Coordinator

- i) Ohio EMA will establish a FTC where the coordination of the Sampling Teams will occur.
- ii) An FTC Coordinator will be provided to assist with safety briefings, situational awareness, coordination of Sampling Teams, and assistance with CBRNResponder issues.
- iii) The FTC Coordinator will coordinate response with DOE's Federal Radiological Monitoring & Assessment Center (FRMAC).

b) County EOC Liaison

A Resident Radiological Analyst will fill a liaison position at the County EOC to provide information and support to the County Executives and provide information to the State EOC.

c) Regional Liaison

An Ohio EMA Regional Liaison will be located at a County EOC to assist the County, as needed.

2. Ohio State Highway Patrol (OSHP)

a. Operations

- i. Ohio EMA will assign the Radiological Branch Chief responsibility for maintaining 24-hour NPP communication capabilities in conjunction with the Ohio EMA Watch Office and the OSHP.
  - 1) OSHP will staff the Columbus Communications Center and maintain the state's backup point of contact for notification NPP emergencies.
    - a) Contact will be made by the NPP through dedicated phone lines.
    - b) Backup communications are available through MARCS radios, commercial phones, cell phones, and fax machines.
    - c) OSHP Dispatch will operate the Law Enforcement Automated Data System (LEADS) to disseminate nuclear incident information to local authorities; provide an alternate for state notification; and confirm or secure information through its districts, posts, or units regarding a radiological incident.

- d) The Dispatch Supervisor is responsible for managing this emergency response function. They will maintain a roster that is available upon request.
  - 2) OSHP District 6 personnel are responsible for providing security at the State EOC.
- b. Training
  - i. OSHP will be responsible for ensuring officers are trained in the appropriate procedures.
  - ii. OSHP will attend Executive Room roles training prior to a Hostile Action-Based exercise.
  - iii. OSHP will participate in full participation NPP exercises at the State EOC as well as partial participation Hostile-Action-based exercises.
  - iv. Ohio EMA may provide training on NPP-specific State JIC procedures.
- c. Response
  - i. General
    - 1) OSHP will serve as the primary agency for ESF-13, Law Enforcement.
    - 2) Roster
      - a) The OSHP HUB, which includes the OSHP Watch Desk, the Columbus Communications Center, and the Intelligence Unit within the State Terrorism Analysis and Crime Center (STACC), is a 24-hour operation.
      - b) An operational roster is maintained by the HUB Assistant Commander. The roster and schedule are managed to ensure sufficient coverage during emergencies.
      - c) The roster is maintained in both hardcopy and electronic formats. It is located at the Watch Desk and on the HUB's shared drive.
    - 3) Shifts
      - a) HUB Watch Desk Commanders work 10-hour shifts with overlapping shifts on Wednesdays. Day and afternoon shifts overlap daily in the afternoon for increased coverage.
      - b) Sliding of schedules/days off as well as posting of overtime is used to fill vacant shifts due to permissive leave.
      - c) During emergencies, the HUB Assistant Commander and/or the HUB Commander report to assist.
      - d) Ongoing events may result in the changing of schedules/days off and overtime being posted in order to fulfill the operational need.
      - e) OSHP will ensure there are provisions for outgoing staff to brief incoming staff on the status of the emergency and response activities occurring.

- 4) Continuity of Resources
  - a) Command and Control – HUB Commander, HUB Assistant Commander
  - b) Alert and Notification – On-Duty Watch Desk Commander
  - c) Communications – On-Duty Watch Desk Commander
  - d) Public Information – OSHP PIO
  - e) Radiological Exposure Control – Field Operations Commander, District/Post Commander

- 5) Key Responsibilities

Note: Refer to Attachment I-K for OSHP's key responsibilities.

- ii. Emergency Phase

- 1) Staffing/Responsibilities

Note: For State EOC Representatives, refer to Attachment II-A.

- a) State EOC

- i) State EOC Front Desk

- (1) OSHP will maintain a security presence at the State EOC's front desk.
- (2) OSHP staff will sign visitors in and out of the building.

- ii) State EOC Executive Room

During a Hostile Action-Based event, OSHP will provide representatives to the Executive Room for situational awareness and guidance.

- iii) ESF-13

- (1) OSHP, through ESF-13, will receive and assign missions with a focus on law enforcement.
- (2) OSHP will instruct local posts to operate traffic and access control points, assist in traffic control, and coordinate with and assist local law enforcement.

- iv) ESF-15

During a Hostile Action-Based event, OSHP will provide a representative to the State JIC to ensure news releases do not contain sensitive law enforcement information prior to release.

- b) Remote Activities

Security will be provided for state properties and facilities by OSHP, as needed and if available.

2) Additional Responsibilities

a) ESF-1 Support

In coordination with ESF-1, OSHP will provide:

- i) Aerial support for:
  - (1) Transportation of authorized emergency personnel.
  - (2) Aerial surveillance assessments of the incident.
  - (3) Backup support with air or ground transport of radiological samples and dosimetry, in accordance with ODH's RAD-REP-0355 Field Sample Screening Station SOP, from the Sample Screeners to designated laboratories.
- ii) Transportation assistance to federal response teams, if necessary.
- iii) Access coordination of the I-80 turnpike with the Ohio Turnpike and Infrastructure Commission, if it becomes necessary to restrict the route.

iii. Intermediate Phase

1) Staffing/Responsibilities

a) State EOC

- i) State EOC Front Desk
  - (1) OSHP will maintain a security presence at the State EOC's front desk.
  - (2) OSHP staff will sign visitors in and out of the building.
- ii) State EOC Executive Room

During a Hostile Action-Based event, OSHP will provide representatives to the Executive Room for situational awareness and guidance.
- iii) ESF-13
  - (1) OSHP, through ESF-13, will continue to receive and assign missions with a focus on law enforcement.
  - (2) OSHP will instruct local posts to operate traffic and access control points, assist in traffic control, and coordinate with and assist local law enforcement.
- iv) ESF-15

During a Hostile Action-Based event, OSHP will continue to provide a representative to the State JIC to ensure news releases do not contain sensitive law enforcement information prior to release.

b) Remote Activities

Security will be provided for state properties and facilities by OSHP, as needed and if available.

2) Additional Responsibilities

a) ESF-1

In coordination with ESF-1, OSHP will provide:

i) Aerial support for:

- (1) Transportation of authorized emergency personnel.
- (2) Aerial surveillance assessments of the area.
- (3) Backup support with air or ground transport of radiological samples and dosimetry, in accordance with ODH's RAD-REP-0355 Field Sample Screening Station SOP, from the Sample Screeners to designated laboratories.

ii) Transportation assistance to federal response teams, if necessary.

iii) Access coordination of the I-80 turnpike with the Ohio Turnpike and Infrastructure Commission, if it becomes necessary to restrict the route.

## G. Ohio Department of Agriculture (ODA)

1. Planning

- a. ODA will provide for a statewide program to ensure health and safety with regard to the consumption of all food products.
- b. ODA will maintain a listing of all milk and milk product producers/processors, a general census of dairy stock, and other large amounts of food or agricultural products originating in the 50-mile EPZ.
- c. The Radiological Emergency Information for Food Producers, Processors, and Distributors will be updated, published, and distributed annually to farmers within the 10-mile EPZ.
- d. ODA will develop and maintain procedures for sampling of various commodities.
- e. ODA will attend the NPPEP and IZRRAG meetings.
- f. ODA will provide a representative to the URSB.

2. Training

- a. ODA Sample Teams will receive training in the proper collection of samples and the use of CBRNResponder.
- b. Appropriate staff members will receive IZRRAG and/or CBRNResponder training.
- c. Ohio EMA will provide training for ODA personnel who may staff Public Inquiry, State JIC, and/or the Utility JIC.

- d. ODA will participate in full participation NPP exercises as well as ingestion phase drills and exercises.

### 3. Response

#### a. General

- i. ODA will serve as the primary agency for ESF-11, Agriculture.
- ii. ODA will ensure there are provisions for outgoing staff to brief incoming staff on the status of the emergency and response activities occurring.
- iii. Key Responsibilities

Note: Refer to Attachment I-J for ODA's key responsibilities.

#### b. Emergency Phase

##### i. Staffing/Responsibilities

State EOC

Note: For State EOC Representatives, refer to Attachment II-A.

##### 1) ESF-11

At ESF-11, ODA will receive and assign missions with a general focus on various agricultural issues, including farm and large animals.

##### 2) ESF-15

ODA may provide support to ESF-15 for Public Inquiry, State JIC, and/or Utility JIC positions.

#### c. Ingestion Phase

##### i. Staffing/Responsibilities

##### 1) State EOC

Note: For State EOC Representatives, refer to Attachment II-A.

##### a) ESF-3

ODA will support the ESF-3, Debris Management Task Force, as needed.

##### b) ESF-11

- i) ODA will continue to coordinate ESF-11 activities and needs from the State EOC.
- ii) Activities with both federal and local counterparts will be coordinated by ODA.
- iii) ODA will direct a state-wide program for protection against radiological contamination of livestock, food, and crops. Control of radiologically contaminated crops and foodstuffs will be performed through quarantine, confiscation, embargo, destruction in the field, or harvesting.

c) ESF-15

ODA may provide support to ESF-15 for Public Inquiry, State JIC, and/or Utility JIC positions.

d) IZRRAG

ODA will:

- i) Serve as the primary liaison for the A-Team's USDA and FDA representatives.
- ii) Assist in the development of intermediate phase public advisories and recommendations.
- iii) Develop sampling plans and deploy Sample Teams to sample agricultural commodities including, but not limited to, milk, milk products, meat, and foodstuffs.

2) Remote Activities

a) Sample Teams

For more information on Sample Teams, refer to section VIII.D.

## H. Ohio Department of Health (ODH)

1. ODH

a. Rosters

- i. When responding to an emerging radiological incident, BEHRP uses the RAD-REP-0050 Emergency Call-out procedure to notify other ODH management and staff. BEHRP in coordination with ODH Human Resources maintains an organizational chart of current employees who can be assigned to respond to a public health emergency.
- ii. The Program Administrator for the Radiological Health and Safety Section (RHSS) has been designated by the Bureau Chief to develop, maintain, and implement ODH's radiological emergency preparedness program.
- iii. Notification and assignment of radiological response personnel and subject matter experts (SMEs) is a primary element of ODH's response capabilities.
- iv. Rosters will be maintained by the various Bureau Chiefs or designees depending on the current situational needs.

b. Shifts

- i. Shift schedules are not pre-determined and will be scalable based upon need and available personnel.
- ii. ODH will ensure there are provisions for outgoing staff to brief incoming staff on the status of the emergency and response activities occurring.

c. Key Responsibilities

Note: Refer to Attachment I-G for ODH's key responsibilities.

2. ODH-BEHRP

a. Planning

i. ODH-BEHRP will be responsible for the maintenance of:

- 1) The procedures for Dose Assessment, IZRRAG, and related activities.
- 2) The procedures for the Liaisons to the Utility EOF, County EOC Liaison, State/Utility JIC Liaison, Sample Screeners, and Public Water Sampling Teams.
- 3) A dose record form which may be used by state or local agencies.

ii. Potassium Iodide (KI)

1) KI Directive

ODH-BEHRP is responsible for the maintenance of the KI Directive, 10-BEHRP-01. This document's purpose is to provide guidance on the use of KI to reduce radiological doses to members of the public, institutionalized individuals, and emergency workers within the 10-mile EPZ during a release of radioactive iodine.

2) ODH-BEHRP will procure KI from the NRC and provide it to:

- a) Ohio EMA RRAs to distribute to emergency worker locations in the counties.
- b) Local health departments for distribution to the general public during a radiological emergency.

3) If necessary, ODH-BEHRP will coordinate with an independent laboratory for an analysis of the current supply of KI in order to receive approval for a shelf-life extension prior to the expiration of the KI supply.

iii. ODH-BEHRP will attend the NPPEP and IZRRAG meetings.

iv. ODH-BEHRP will provide a representative to the URSB.

b. Training

ODH-BEHRP should:

- i. Ensure all ODH-BEHRP emergency workers receive training to remain proficient in their activities and procedures.
- ii. Maintain trained and qualified dose assessment personnel and ensure a continuing education program is followed.
- iii. Ensure Sample Screeners are trained in proper survey techniques, sample receipt, and contamination control methods.
- iv. Ensure Dose Assessment, FMTs, Sample Screeners, and Sample Teams are trained in the use of CBRNResponder.

- v. Ensure appropriate personnel attend the Executive Room roles training, provided by Ohio EMA, prior to each exercise.
  - vi. ODH-BEHRP will participate in ESF-3 Debris Management Task Force and ESF-14 Housing Task Force tabletops
  - vii. Participate in full and partial participation NPP exercises as well as ingestion phase drills and exercises.
- c. Response
- i. General
    - 1) ODH-BEHRP serves as the lead state agency for radiation protection and associated functions as part of ESF-10, Oil, Gas, and Hazardous Materials.  
 This responsibility includes the oversight of health physics functions such as, but not limited to: dose limits and exceedance, contamination controls, access guidance, radiological area postings, work plans, personal protective equipment (PPE), and as low as reasonably achievable (ALARA) evaluations.
    - 2) ODH-BEHRP will serve as the lead agency in ESF-5 for radiological dose projections and calculations during the course of the emergency.
    - 3) Shifts  
 Note: For FMT shifts, refer to Section VIII.B.2.g.  
 Note: For Sample Screener shifts, refer to Section VIII.C.3.a.iii.  
 Note: For Sample Team shifts, refer to Section VIII.D.3.c.
  - ii. Emergency Phase  
 Staffing/Responsibilities
    - 1) State EOC  
 Note: For State EOC Representatives, refer to Attachment II-A.
      - a) State EOC Executive Room  
 ODH-BEHRP Subject Matter Experts will provide guidance to the Executives for radiological technical and health issues.
      - b) ESF-5
        - i) Dose Assessment  
 Dose Assessment personnel will:
          - (1) Perform radiological dose projections and assessment.
          - (2) Compare State dose projections to dose projections provided by the NPP.
          - (3) Provide Protective Action Recommendation (PAR) proposals to the Executives for actions such as evacuation or sheltering for the general public, institutionalized, and emergency workers.

- (4) Provide PAR proposals to the Executives for the administration of KI to the general public, institutionalized individuals, and emergency workers.
- (5) Revise emergency worker dose limits based upon dose projections.
- (6) Advise the Executives with regard to radiological health and safety issues.
- (7) In conjunction with Ohio EMA, be responsible for the management of the Teams Dose Assessment channel and/or the Dose Assessment room.

c) ESF-10

The ESF-10 Subject Matter Expert will:

- i) Be responsible for oversight of health physics functions such as, but not limited to: contamination controls, access guidance, radiological area postings, work plans, personal protective equipment (PPE), and ALARA evaluations.
- ii) Review and analyze requests for state or local emergency workers to exceed their dose limits. Based on calculations and a procedural analysis, the request will be approved or denied and relayed to the requester.

d) ESF-15

The ESF-15 JIC Subject Matter Expert will provide radiological health information to both the State JIC staff and the Utility JIC PIO.

2) Remote Activities

a) ESF-5

i) County EOC Liaison

The County EOC Liaison will relay information to and from the State EOC Dose Assessment staff, the Utility EOF Liaison, and the County EOC. This position will be located at either Columbiana, Lake, or Ottawa County.

ii) Utility EOF Liaison

- (1) The Utility EOF Liaison will track various information at the Utility EOF including information required to run dose projections.
- (2) The Utility EOF Liaison will relay information to and from the State EOC Dose Assessment staff, the County EOC Liaison, and the Utility EOF.

iii) Field Monitoring Teams

Note: For responsibilities, refer to Section VIII.B.1.

iv) Sample Screeners

Note: For responsibilities, refer to Section VIII.C.1.

b) Lab Liaison

A Lab Liaison may be provided to the ODH-Lab upon request to provide health physics support, data clarification, and coordination, if needed.

iii. Intermediate Phase

1) Staffing/Responsibilities

a) State EOC

i) State EOC Executive Room

ODH-BEHRP Subject Matter Experts will provide guidance to the Executives in radiological technical and health issues.

ii) ESF-3

ODH-BEHRP will support the ESF-3, Debris Management Task Force, as needed.

iii) ESF-5

Dose Assessment will:

- (1) Transition to the use of TurboFRMAC and/or spreadsheets for performing calculations using laboratory analysis results of various samples.
- (2) Provide sample assessment results to GIS and coordinate development of maps.
- (3) Provide sample results and their assessment to IZRRAG for further action.

iv) ESF-10

The ESF-10 Subject Matter Expert will continue to coordinate ESF-10 radiological activities and needs from the State EOC.

v) ESF-14

ODH-BEHRP will support the ESF-14 Housing Task Force, as needed.

vi) ESF-15

The ESF-15 JIC Subject Matter expert will provide radiological health information to the State JIC staff.

vii) IZRRAG

ODH-BEHRP will:

- (1) When staffing the IZRRAG Chair and Assistant Chair, provide direction and oversight of recovery activities, such as reentry, relocation, return, and reoccupancy.

- (2) Serve as the primary liaison for the Advisory Team’s Centers for Disease Control and Prevention (CDC) representative, if one is provided.
- (3) Coordinate activities with FRMAC.
- (4) Develop recommendations for a modified Restricted Zone using FMT grid surveys and the Derived Response Level (DRL) provided from Dose Assessment.
- (5) Collaborate with other IZRRAG agencies on the development of the intermediate phase advisories and recommendations.
- (6) Create sampling plans and deploy Sample Teams to sample private water.
- (7) Provide GIS services, if needed.

b) Remote Activities

i) ESF-5

Sample Screeners

Note: For responsibilities, refer to Section VIII.C.1.

ii) Private Water Sample Teams

Note: For responsibilities, refer to Section VIII.D.1.

iii) Lab Liaison

A Lab Liaison may be provided to the ODH-Lab upon request to provide health physics support, data clarification, and coordination, if needed.

3. ODH Bureau of Health Preparedness (ODH-BHP)

a. Planning

ODH-BHP will develop and maintain a listing of hospitals and other facilities, as well as their radiological capabilities, in regards to treatment of contaminated, injured individuals.

b. Training

i. ODH-BHP will ensure their emergency responders are trained in their response procedures.

ii. ODH-BHP may participate in ESF-3 Debris Management Task Force and ESF-14 Housing Task Force tabletops.

iii. ODH-BHP will participate in full participation exercises at the State EOC.

c. Response

i. General

ODH-BHP will serve as the primary agency for ESF-8, Public Health and Medical Services.

ii. Emergency Phase

Staffing/Responsibilities

1) State EOC

Note: For State EOC Representatives, refer to Attachment II-A.

a) ESF-8

i) ODH-BHP will receive and assign missions with the focus on public health.

ii) The provision of emergency medical supplies and health services to affected areas will be coordinated by ODH-BHP.

iii. Intermediate Phase

Staffing/Responsibilities

1) State EOC

a) ESF-3

ODH-BHP will support the ESF-3 Debris Management Task Force, if requested.

b) ESF-8

ODH-BHP will continue to coordinate ESF-8 activities and needs from the State EOC.

c) ESF-14

ODH-BHP will support the ESF-14 Housing Task Force, if requested.

4. ODH Office of Communications (ODH-Comms)

a. Planning

Ohio EMA will develop and maintain the procedures utilized in the State and Utility JIC.

b. Training

i. ODH-Comms will ensure their emergency responders are trained in their procedures.

ii. Ohio EMA will provide training for ODH-Comms personnel who may staff Public Inquiry, State JIC, and/or the Utility JIC.

iii. ODH-Comms will participate in full and partial participation NPP exercises as well as ingestion phase exercises.

- c. Response
    - i. Emergency Phase
      - Staffing/Responsibilities
        - 1) State EOC
          - Note: For State EOC Representatives, refer to Attachment II-A.
          - a) ESF-15
            - ODH-Comms may provide staffing to support Public Inquiry and/or State JIC positions.
        - 2) Remote Activities
          - a) ESF-15
            - ODH-Comms may provide staffing to support the ESF-15 Utility JIC PIO position.
    - ii. Intermediate Phase
      - Staffing/Responsibilities
        - 1) State EOC
          - a) ESF-15
            - ODH-Comms may provide staffing to support ESF-15. Positions supported may include JIC Manager, State JIC PIO, JIC Writer, and Public Inquiry Support.
5. ODH-Lab
- a. Planning
    - i. The ODH-Lab will develop and maintain procedures for the analysis and reporting of sample results.
    - ii. Lab equipment will be properly maintained and routinely calibrated per manufacturer's recommendations.
    - iii. ODH-Lab will attend the NPPEP and IZRRAG meetings.
  - b. Training
    - i. The ODH-Lab will ensure laboratory personnel are trained and remain proficient in proper analytic techniques and procedures.
    - ii. The ODH-Lab will ensure personnel are trained in the use of CBRNResponder.
    - iii. The ODH-Lab will participate in ingestion phase drills and exercises.
  - c. Response
    - i. General
      - ODH-Lab will ensure there are provisions for outgoing staff to brief incoming staff on the status of the emergency and response activities occurring.

ii. Emergency Phase

Staffing/Responsibilities

1) Remote Activities

a) Laboratory Technicians

- i) Laboratory facilities and services for the analysis of radiological environmental samples will be provided by the ODH-Lab.
- ii) ODH-Lab will upload analysis results into CBRNResponder. If CBRNResponder is not available, analysis results will be communicated to Dose Assessment through alternate means (e.g., telephone, fax).
- iii) The ODH-Lab will determine the needs for storage units, with and without refrigeration, and will relay the information and the timeframe required to the State EOC.
- iv) The ODH-Lab will request 24-hour security for the storage units from the State EOC.
- v) The Chain of Custody process will be followed.

Note: For additional information, refer to ODH's SOP RAD-1 Sample Receiving.

iii. Intermediate Phase

Staffing/Responsibilities

1) Remote Activities

a) Laboratory Technicians

- i) ODH-Lab will continue to provide laboratory facilities and services for the analysis of radiological environmental samples.
- ii) ODH-Lab will upload analysis results into CBRNResponder. If CBRNResponder is not available, analysis results will be communicated to Dose Assessment through alternate means (e.g., telephone, fax).
- iii) The ODH-Lab will determine any additional needs for storage units, with and without refrigeration, and will relay the information and timeframe needed to the State EOC for procurement.
- iv) The Chain of Custody process will continue.

Note: For additional information, refer to ODH's SOP RAD-1 Sample Receiving.

6. ODH Office of Health Opportunity (ODH-OHO)

a. Training

ODH-OHO will participate in ESF-14 Housing Task Force tabletops.

- b. Response
  - i. Intermediate Phase
    - Staffing/Responsibilities
      - 1) State EOC
        - a) ESF-14
          - ODH-OHO will support the ESF-14 Housing Task Force.

## **I. Ohio Department of Natural Resources (ODNR)**

### **1. Planning**

ODNR will:

- a. Develop and maintain procedures for the sampling of fish and wildlife.
- b. Maintain information on navigable waterways (e.g., lakes, streams, rivers).
- c. Ensure radiological equipment is calibrated on a manufacturer recommended schedule.
- d. Attend the NPPEP and IZRRAG meetings.

### **2. Training**

- a. ODNR will ensure applicable staff are trained in sampling, lake clearing, and IZRRAG procedures.
- b. ODNR will provide training for ODNR responders on the agency's radiological equipment.
- c. Ohio EMA will provide training for ODNR's personnel who may staff Public Inquiry, State JIC, and/or the Utility JIC.
- d. ODNR Parks and Watercraft personnel will participate in a Lake clearing tabletop for all DBNPS and PNPP exercises.
- e. ODNR will participate in all full participation NPP exercises at the State EOC.

### **3. Response**

- a. General
  - i. ODNR serves as the primary agency for ESF-3, Engineering and Public Works, and ESF-9, Search and Rescue.
  - ii. Continuity of Resources Responsibilities
    - 1) Command and Control – Office of Law Enforcement Staff Officers
    - 2) Alert and Notification
      - a) Land and water evacuations – Parks and Watercraft Law Administrator
      - b) Wildlife area, natural area, and parks clearing – Wildlife Law Administrator

iii. Roster

- 1) Parks and Watercraft Captain and Lieutenants oversee lake/park clearing. They are responsible for developing a roster for staffing which would include backfill from other offices. The Parks and Watercraft Law Administrator would assist in the backfill of employees.
- 2) The Wildlife Field Supervisor assigned would coordinate with the Parks and Watercraft Captain and Lieutenants on additional needs for clearing land. The Wildlife Law Administrator would assist in finding additional field supervisors, if needed.
- 3) The Parks and Watercraft Captains and Lieutenants, as well as the Wildlife Field Supervisor, maintain the list of employees currently under their supervision.

iv. Shifts

- 1) Shifts will be scheduled by the Parks and Watercraft Captain and Lieutenants along with the Wildlife Field Supervisor per the Unit 2 contract.
- 2) ODNR will ensure there are provisions for outgoing staff to brief incoming staff on the status of the emergency and response activities occurring.

v. Key Responsibilities

Note: Refer to Attachment I-J for ODNR's key responsibilities.

b. Emergency Phase

Staffing/Responsibilities

i. State EOC

Note: For State EOC Representatives, refer to Attachment II-A.

1) ESF-3

ODNR will receive and assign missions with a general focus on water, utilities, and debris management.

2) ESF-9

a) ODNR will receive and assign missions with a general focus on navigable waterway and Lake Erie clearance and state properties' evacuations and closure.

b) Through ESF-9 and the ODNR Dispatch, ODNR will notify the Ottawa Wildlife Refuge of the need to evacuate staff and visitors after given Executive approval.

3) ESF-15

ODNR may provide support to ESF-15 for Public Inquiry and/or State JIC positions.

ii. Remote Activities

1) ESF-15

ODNR may provide support to ESF-15 for the Utility JIC PIO position.

2) Alerting, notification, and Lake clearing

- a) ODNR Parks and Watercraft will provide personnel to clear Lake Erie and/or other navigable waterways within the 10-mile EPZ.
- b) ODNR will alert and notify the public on Lake Erie within the 10-mile EPZ, weather and other conditions allowing.
- c) All Lake Erie activities will be coordinated through ODNR and the United States Coast Guard (USCG).
- d) Personnel, watercraft, and equipment will be provided by ODNR to augment the USCG efforts to clear Lake Erie.
- e) ODNR may also provide additional pilots and aircraft, if available, for the waterway notification of recreational boaters in coordination with ESF-1, Transportation.
- f) ODNR responders will assist in marina traffic control for evacuating boaters.

3) Alerting, Notification, and Closure of Navigable Waterways

ODNR will provide for alerting and evacuation of the public from other navigable waterways within the 10-mile EPZ.

4) Closure of State Properties

ODNR will provide for alerting and evacuation of staff and visitors on ODNR owned, controlled, or maintained properties within the 10-mile EPZ.

5) Radiological Sample Transport

ODNR will provide ground transport of radiological samples and dosimetry, in accordance with ODH's RAD-REP-0355 Field Sample Screening Station SOP, from the Sample Screeners to designated laboratories, as coordinated through ESF-1.

c. Intermediate Phase

Staffing/Responsibilities

i. State EOC

1) ESF-3

- a) ODNR will continue to coordinate ESF-3 and ESF-9 activities and needs from the State EOC.
- b) ODNR will assist with the coordination of the ESF-3 Debris Management Task Force.

2) ESF-9

ODNR will continue to coordinate ESF-9 activities and needs from the State EOC.

3) ESF-15

ODNR may provide support to ESF-15 for Public Inquiry and/or State JIC positions.

4) IZRRAG

ODNR will:

a) Assist in the development of intermediate phase advisories and recommendations for the public.

b) Develop sampling plans and deploy Sample Teams to sample fish and wildlife.

ii. Remote Activities

1) Sample Teams

Note: For more information, refer to section VIII.D.

2) Radiological Sample Transport

ODNR will continue to provide ground transport of radiological samples and dosimetry, in accordance with ODH's RAD-REP-0355 Field Sample Screening Station SOP, from the Sample Screeners to designated laboratories, as coordinated through ESF-1.

## **J. Ohio Department of Transportation (ODOT)**

1. Planning

a. ODOT will develop and maintain emergency response procedures.

b. ODOT will develop and maintain survey plans that project traffic flow patterns and capacities on evacuation routes.

2. Training

a. ODOT will ensure emergency responders are trained in their procedures.

b. Ohio EMA will provide training for ODOT's personnel who may staff Public Inquiry, State JIC, and/or the Utility JIC.

c. ODOT will participate in full participation NPP exercises at the State EOC.

3. Response

a. General

i. ODOT will serve as the primary agency for ESF-1, Transportation.

ii. ODOT will determine shift schedules at the time of the incident.

iii. ODOT will ensure there are provisions for outgoing staff to brief incoming staff on the status of the emergency and response activities occurring.

iv. Key Responsibilities

Note: Refer to Attachment I-J for ODOT's key responsibilities.

b. Emergency Phase

i. Staffing/Responsibilities

1) State EOC

Note: For State EOC Representatives, refer to Attachment II-A.

a) ESF-1

- i) ODOT will receive and assign missions with a focus on transportation-related issues.
- ii) Based on inputs from ESF-10 and ODOT resources, prohibited routes of travel in the area will be determined and designated.
- iii) ODOT will coordinate the aerial transportation of State personnel.
- iv) ODOT will coordinate the transport of radiological samples and dosimetry, in accordance with ODH's RAD-REP-0355 Field Sample Screening Station SOP, from the Sample Screeners to designated laboratories or other designated destination.

b) ESF-15

ODOT may provide support to ESF-15 for Public Inquiry, State JIC, and/or Utility JIC positions.

2) Remote Activities

a) County Liaison

ODOT will provide a liaison to the county EOCs.

b) Lake Clearing

If the USCG is unavailable, ESF-1 will assist ESF-9 in clearing Lake Erie.

c) Local Traffic Control

ESF-1 will provide personnel and equipment to support local traffic control efforts.

c. Intermediate Phase

i. Staffing/Responsibilities

1) State EOC

a) ESF-1

- i) ODOT will continue to coordinate ESF-1 activities and needs from the State EOC.

ii) ODOT will coordinate the transport of radiological samples and dosimetry, in accordance with ODH's RAD-REP-0355 Field Sample Screening Station SOP, from the Sample Screeners to designated laboratories or other designated destination.

b) ESF-3

ODOT will assist in facilitating the ESF-3, Debris Management Task Force.

c) ESF-15

ODOT may provide support to ESF-15 for Public Inquiry or State JIC positions.

## **K. Ohio Environmental Protection Agency (Ohio EPA)**

### **1. Planning**

a. Ohio EPA will:

- i. Develop and maintain procedures for the ESF-3 Drinking Water SME and the ESF-5 FMT Communicator.
- ii. Develop and maintain procedures for sampling soil, vegetation, surface water, and public drinking water.
- iii. Equip and maintain the Ohio EPA Radiation Assessment Team (RAT) to be capable of sampling soil, forage (ground cover), snow, drinking water, and surface water.
- iv. Attend the NPPEP and IZRRAG meetings.
- v. Provide a representative to the URSB.

b. The Division of Drinking and Ground Waters will:

- i. Maintain a listing of existing satellite and emergency connection capabilities in the 10-mile EPZ.
- ii. Provide information on available water treatment facilities, locations, capacities for treatment, and community usage data.
- iii. Maintain a listing of public drinking water intake locations in Ohio.

### **2. Training**

a. Ohio EPA will:

- i. Ensure Ohio EPA emergency responders are trained in their procedures.
- ii. Ensure the RAT members are trained in the use of their equipment and the use of CBRNResponder.
- iii. Attend Executive Room roles training prior to an exercise.
- iv. Participate in full and partial participation exercises as well as ingestion phase drills and exercises.

- b. Ohio EMA will provide training for Ohio EPA’s personnel who may staff Public Inquiry, State JIC, and/or the Utility JIC personnel.
3. Response
- a. General
    - i. Ohio EPA will serve as the primary agency for ESF-10, Oil, Gas, and Hazardous Materials.
    - ii. Ohio EPA will determine shift schedules at the time of the incident.
    - iii. Ohio EPA will ensure there are provisions for outgoing staff to brief incoming staff on the status of the emergency and response activities occurring.
    - iv. Key Responsibilities
      - Note: Refer to Attachment I-I for Ohio EPA’s key responsibilities.
  - b. Emergency Phase
    - i. Staffing/Responsibilities
      - 1) State EOC
        - Note: For State EOC Representatives, refer to Attachment II-A.
        - a) Executive Room Representative
          - An Ohio EPA Subject Matter Expert will provide guidance to the Executives for environmental issues.
        - b) ESF-3
          - i) Ohio EPA will provide a subject matter expert to address any drinking water matters.
          - ii) Public water systems
            - (1) The Ohio EPA Subject Matter Expert will recommend that public water systems (PWSs) with surface water intakes, within the 10-mile EPZ, top off their tanks and, as a precaution, close their intakes.
            - (2) Ohio EPA will maintain communications with the affected PWSs to ensure the area’s drinking water needs are satisfied. If necessary, Ohio EPA may recommend intakes are temporarily opened to sustain services.
            - (3) Ohio EPA will update the Executives of actions and affected areas as they change.
      - c) ESF-5
        - i) The FMT Communicator, located in the Dose Assessment Room, will assist in coordinating the FMT traversals and activities with the FMT Coordinator.

ii) The FMT Coordinator will relay information between the FMT Coordinator and Dose Assessment.

d) ESF-10

The ESF-10 Subject Matter Expert will receive and assign missions with a general focus on hazardous material issues, including radiological matters.

e) ESF-15

Ohio EPA may provide support to ESF-15 for Public Inquiry and/or State JIC positions.

2) Remote Activities

a) ESF-3/ESF-10

A regional liaison may be provided to the county EOC, upon request, to give guidance on environmental issues.

b) ESF-15

Ohio EPA may provide support for the Utility JIC position.

c. Intermediate Phase

i. Staffing/Responsibilities

1) State EOC

a) Executive Room Representative

An Ohio EPA Subject Matter Expert will provide guidance to the Executives for environmental issues.

b) ESF-3

i) The Division of Drinking and Ground Water will:

- (1) Continue to coordinate drinking water activities and needs from the State EOC.
- (2) Provide technical coordination and assistance for the determination of contamination limits for public drinking water.
- (3) Direct public drinking water samples to be sent to designated laboratories to be analyzed in accordance with EPA's Analytical Methods for Drinking Water Compliance Monitoring of Radionuclides.
- (4) Compare drinking water sample analysis result calculations to the EPA SDWA Maximum Contaminant Levels (MCLs) (4 mrem for beta/gamma emitters) for radionuclides. In the event that the dose estimates exceed the MCLs, IZRRAG will consider and determine an alternate PAG and/or coordinate to provide alternate drinking water sources.

Note: For more information, refer to Appendix C.

ii) Debris Management

- (1) Ohio EPA will assist in facilitating the ESF-3, Debris Management Task Force.
- (2) The Division of Materials and Waste Management, in coordination with ODH-BEHRP, will provide a selection of appropriate sites and methods for storage and/or disposal of contaminated waste material, condemned food stuff, and other waste.

c) ESF-10

Ohio EPA will continue to coordinate hazardous materials and radiological activities and needs from the State EOC.

d) ESF-15

Ohio EPA may provide support to ESF-15 for Public Inquiry and/or State JIC positions.

e) IZRRAG

Ohio EPA will:

- i) Serve as the primary liaison for the A-Team's EPA representative.
- ii) Assist with the development of the intermediate phase advisories and recommendations.
- iii) Create sampling plans and deploy Sample Teams to sample private soil, drinking water, surface water, vegetation, and/or snow.
- iv) Provide GIS services, if needed.

2) Remote Activities

Sample Teams

Note: For more information, refer to section VIII.D.

## L. Ohio National Guard (OHNG)

1. Planning

OHNG will develop and maintain applicable emergency procedures.

2. Training

- a. OHNG will train its emergency responders in the applicable procedures.
- b. OHNG will participate in all full participation NPP exercises.

### 3. Response

#### a. General

- i. Other than response from the Civil Support Team (CST), OHNG support will require a written or verbal approval of a Governor's Declaration of Emergency.
- ii. OHNG is not a primary ESF agency. However, it is a support agency to the majority of ESFs. Because of this, ESF leads can request OHNG assets to provide support for a wide variety of missions during a declared emergency.
- iii. OHNG will ensure there are provisions for outgoing staff to brief incoming staff on the status of the emergency and response activities occurring.

#### iv. Continuity of Resources

- 1) A standard Guard Emergency Liaison Officer (GELO) shift is 12 hours, but can be modified to suit operational parameters. The OHNG J3 will manage shift assignments as needed to ensure organizational coverage, continuity of operations, and maintenance of situational awareness. GELOs, or relevant OHNG subject matter experts, brief incoming staff on the status of ongoing response activities.
- 2) OHNG Joint Operations (J3) Non-Commissioned Officer-in-Charge (NCOIC) will maintain the organizational GELO roster both locally and on MS Teams, making updates as needed due to personnel assignment/reassignment.

#### v. Key Responsibilities

Note: Refer to Attachment I-K for OHNG's key responsibilities.

#### b. Emergency Phase

##### Staffing/Responsibilities

##### i. State EOC

OHNG will provide personnel to staff the State EOC.

Note: For State EOC Representatives, refer to Attachment II-A.

##### ii. Remote Activities

##### 1) ESF-1

a) OHNG will maintain capabilities to provide backup support through ESF-1 for ground transportation of radiological samples and dosimetry, in accordance with ODH's RAD-REP-0355 Field Sample Screening Station SOP, from the Sample Screeners to designated laboratories.

b) If local resources are overwhelmed or cannot respond, OHNG may provide transportation assets and drivers through ESF-1 for evacuation missions.

##### 2) ESF-7

OHNG will provide relief support in the form of food and/or water distribution.

- 3) ESF-8
  - a) OHNG will coordinate transportation assets for medical evacuation missions.
  - b) OHNG will provide decontamination and medical support, if requested.
- 4) ESF-13
 

OHNG will maintain capabilities to support local law enforcement with area patrols and traffic control activities.
- 5) Local Support
  - a) The OHNG Joint Operations Directorate (J3) will maintain and employ GELOs across five regions within the state to ensure mutual situational and organizations understanding, unity of purpose, and coordinated action during emergencies. OHNG provides GELO support to emergency managers and leaders from county to state levels as needed.
  - b) OHNG will maintain capabilities to assist local officials with notification and public information.
- 6) CST Support
 

OHNG CST may assist in establishment of contaminated area boundaries, conduct remote air monitoring, and execute sampling activities, upon request.

c. Intermediate Phase

Staffing/Responsibilities

- i. OHNG will continue to provide support, as needed, at the State EOC.
- ii. ESF-1
 

OHNG will maintain capabilities to provide backup support through ESF-1 for ground transportation of radiological samples and dosimetry, in accordance with ODH's RAD-REP-0355 Field Sample Screening Station SOP, from the Sample Screeners to designated laboratories.
- iii. ESF-3
 

OHNG will maintain capabilities to support the ESF-3, Debris Management Task Force.

**M. Public Utilities Commission of Ohio (PUCO)**

- 1. Planning
  - a. PUCO will develop and maintain emergency response procedures for their personnel.
  - b. PUCO will attend the NPPEP meetings.
  - c. PUCO will provide a representative to the URSB.

2. Training
  - a. PUCO will ensure their emergency responders are trained on applicable procedures.
  - b. PUCO will participate in full participation NPP exercises and may support ingestion phases exercises, if requested.
3. Response
  - a. General
    - i. PUCO will serve as the primary agency for ESF-12, Energy. As outlined in ORC 4905, the jurisdiction, supervision, power, and duties of PUCO extend to every public utility whose plant or property lies wholly within the state.
    - ii. Regulation
      - 1) PUCO has adopted the provisions of the regulations of the U.S. Department of Transportation (DOT), unless specifically excluded or modified by the OAC.
      - 2) All hazardous material transportation and shipping aspects are subject to the regulations contained in 49 CFR 171 – 49 CFR 180 which have been adopted by the commission.
      - 3) PUCO will enforce the regulations adopted in Ohio unless a transporter has been granted an exemption by the DOT.
    - iii. PUCO will ensure there are provisions for outgoing staff to brief incoming staff on the status of the emergency and response activities occurring.
    - iv. Key Responsibilities

Note: Refer to Attachment I-J for PUCO’s key responsibilities.
  - b. Emergency Phase
    - i. Staffing/Responsibilities

State EOC

Note: For State EOC Representatives, refer to Attachment II-A.

      - 1) ESF-1

PUCO will serve as the liaison through ESF-1, Transportation, to the railroads. As outlined in ORC 4905, the jurisdiction, supervision, power, and duties of PUCO extend to every railroad whose property lies wholly within the state.
      - 2) ESF-10

PUCO will provide technical support to ESF-10, Oil, Gas, and Hazardous Materials.
      - 3) ESF-12

PUCO will receive and assign missions with a general focus on energy and energy transmission issues.

c. Intermediate Phase

i. Staffing/Responsibilities

1) State EOC

a) ESF-3

- i) PUCO will provide a representative to the ESF-3, Debris Management Task Force.
- ii) PUCO will coordinate radioactive waste management disposal with Ohio EPA and ODH.

b) ESF-12

- i) PUCO will continue the coordination of ESF-12 activities and needs at the State EOC.
- ii) Coordination overall information flow on status of public utilities in affected areas will be the responsibility of PUCO.
- iii) PUCO will ensure appropriate actions are taken in restoration of public utilities, including requiring competing companies to link telephone lines until permanent repairs can be affected, when communications are crucial to the disaster response activities.

2) Remote Activities

a) Monitoring & Sampling Support

PUCO may provide trained personnel and equipment to supplement survey, monitoring, and sampling activities.

## **N. Additional State Agencies**

1. URSB

The Ohio Department of Commerce and the Department of the Attorney General will provide representatives to the URSB.

2. Refer to Attachments I-A, I-D and the State of Ohio EOP ESF documentation for additional State Agency roles and responsibilities.

3. State agency personnel may be provided to staff the State EOC.

Note: For more information, refer to Attachment II-A.

## **O. Federal Agencies**

1. URSB

FEMA Region 5 and NRC Region III send personnel to attend the URSB meetings.

2. United States Coast Guard (USCG)

The USCG will:

- a. Coordinate activities on Lake Erie with ESF-9, Search and Rescue.
  - b. Broadcast an emergency notice to mariners, when the procedures for an emergency classification calls for one. See Section IV.D for more broadcast information.
  - c. Provide available resources (e.g., vessels, aircraft, and personnel), from the Ninth District USCG stations, to notify boaters on Lake Erie and to evacuate them, when necessary.
  - d. Coordinate with ODNR to notify and evacuate boaters on Lake Erie, when necessary.
3. Refer to Attachment I-A, Attachment I-E, and the National Response Framework (NRF) ESFs Annexes and the Nuclear/Radiological Incident Annex (NRIA) for additional Federal Agency roles and responsibilities.

**P. Private and Non-Profit Organizations**

1. Private and non-profit organizations may provide personnel to staff the State EOC.

Note: For more information, refer to Attachment II-A.

2. Refer to Attachment I-A, Attachment I-F, and the State of Ohio EOP ESFs for additional organizations' roles and responsibilities.

# Attachment I-A: Introduction to Attachments I-B through I-K

**Attachment I-B** A table of the ESFs as they are currently structured in the Ohio EOP.

**Attachment I-C** The full activation State EOC Organization Chart for a Nuclear Power Plant incident. The block diagram indicates each position's or ESF's relationship to the total emergency response effort directed by the Governor and Ohio EMA Executive Director. The agencies in each ESF are found in Attachments I-D, I-E, and I-F.

**Attachment I-D** A table of all the State Agencies found within the Ohio EOP's ESF documents that could be part of the overall response. Both the coordinating/primary agencies and support agencies are shown for each ESF. Each ESF's documentation details the responsibilities and concept of operations for each agency.

**Attachment I-E** A table of all the Federal Agencies found within the NRF's ESF Annexes that could be part of the overall response. The coordinating, primary, and support agencies are shown for each ESF. By referring to each ESF's documentation, the responsibilities for each agency are detailed. The agencies involved in the NRIA are also listed.

Note that ESF-14 of the NRF ESFs does not align with the Ohio EOP ESF-14. Ohio's ESF-14 is Recovery and Mitigation. The NRF's ESF-14 is Cross-Sector Business and Infrastructure.

**Attachment I-F** A table of all the private and non-profit organizations found within the Ohio EOP's ESF documents that could be part of the overall response. Both the supporting agencies and partner agencies are shown for each ESF. By referring to each ESF's documentation, the responsibilities and concept of operations for each agency is detailed.

## Attachments I-G through I-K

Tables are provided showing the key responsibilities of each of the key state partner agencies.

## Attachment I-B: State of Ohio ESFs

<b>ESF</b>	<b>Function</b>
ESF-1	Transportation
ESF-2	Communications and Information Technology
ESF-3	Engineering and Public Works
ESF-4	Firefighting
ESF-5	Information and Planning
ESF-6	Mass Care
ESF-7	Resource Support and Logistics
ESF-8	Public Health and Medical Services
ESF-9	Search and Rescue
ESF-10	Oil, Gas, and Hazardous Materials
ESF-11	Food and Agriculture
ESF-12	Energy
ESF-13	Law Enforcement
ESF-14	Recovery and Mitigation
ESF-15	Emergency Public Information and External Affairs



# Attachment I-D: State of Ohio Agency Support

State Agencies	Acronym	Emergency Support Functions														
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Attorney General's Office	AGO					S <sup>7</sup>									S	S
Attorney General's Office/Bureau of Criminal Investigation	AGO/BCI					S								S		S
Civil Air Patrol, Ohio Wing	CAP	A <sup>1</sup>				S										S
Ohio Arts Council	OAC					S									PA <sup>6</sup>	S
Ohio Bureau of Motor Vehicles	BMV					S		S								S
Ohio Department of Administrative Services	DAS	S		S		S	C <sup>3</sup> D <sup>5</sup>	S	S						S	S
Ohio Department of Aging	ODAging					S	S								S	S
Ohio Department of Agriculture	ODA			A		S		S	S		S	(CP) <sup>4</sup>				S
Ohio Department of Commerce	DOC					S									S	S
Ohio Department of Commerce, Division of Industrial Compliance	DOC-IC			S		S					S					S
Ohio Department of Commerce, State Fire Marshal	DOC-SFM				(CP)	S			S		S			S		S
Ohio Department of Developmental Disabilities	DODD	S				S	S		S						PA	S
Ohio Department of Education	ODE					S	S								S	S
Ohio Department of Health	ODH			S		S	S	B <sup>2</sup>	(CP)		(CP)				S	S
Ohio Department of Higher Education	OBR					S									S	S
Ohio Department of Insurance	ODI					S									S	S

<sup>1</sup> A - ESF # Tab A Support Agency  
<sup>2</sup> B - ESF # Tab B Support Agency  
<sup>3</sup> C - ESF # Tab C Support Agency  
<sup>4</sup> (CP) - Coordinating/Primary Agency  
<sup>5</sup> D - ESF # Tab D Support Agency  
<sup>6</sup> (PA) - Partner Agency  
<sup>7</sup> S - Support Agency

# Attachment I-D: State of Ohio Agency Support (continued)

State Agencies	Acronym	Emergency Support Functions																
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15		
Ohio Department of Jobs and Family Services	ODJFS					S <sup>7</sup>	(CP) <sup>4</sup>								(PA) <sup>6</sup>	S		
Ohio Department of Medicaid	ODM					S	S									S	S	
Ohio Department of Mental Health and Addiction Services	Ohio MHAS					S	S		S							S	S	
Ohio Department of Natural Resources	ODNR	S		(CP)	S	S		S		(CP)	S				S	S	S	
Ohio Department of Public Safety	ODPS					S	C <sup>3</sup>	S									S	
Ohio Department of Rehabilitation and Correction	ODRC	S		S		S		S								(PA)	S	
Ohio Department of Transportation	ODOT	(CP)		S	S	S		B <sup>2</sup>						S			S	
Ohio Department of Transportation - Aviation	ODOT	A <sup>1</sup>				S	C	S		S	S						S	S
Ohio Department of Veterans Services	ODVS					S										(PA)	S	
Ohio Department of Youth Services	DYS					S												S
Ohio Development Services Agency	ODSA			S		S	S							S			S	S
Ohio Emergency Management Agency	Ohio EMA	S	(CP)	S	S	(CP)	S	(CP)		S	S					(CP)	(CP)	
Ohio Emergency Medical Services	OEMS					S			S									S
Ohio Environmental Protection Agency	Ohio EPA			S		S		B	S	S	(CP)						S	S

<sup>1</sup> A - ESF # Tab A Support Agency  
<sup>2</sup> B - ESF # Tab B Support Agency  
<sup>3</sup> C - ESF # Tab C Support Agency  
<sup>4</sup> (CP) - Coordinating/Primary Agency  
<sup>5</sup> D - ESF # Tab D Support Agency  
<sup>6</sup> (PA) - Partner Agency  
<sup>7</sup> S - Support Agency

# Attachment I-D: State of Ohio Agency Support (continued)

State Agencies	Acronym	Emergency Support Functions														
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Ohio Facilities Construction Commission	OFCC					S <sup>7</sup>									S	S
Ohio Geographically Referenced Information Program	OGRIP					S										S
Ohio Governor's Office	GO					S										S
Ohio Homeland Security	OHS					S	C <sup>3</sup>	S						S		S
Ohio Homeland Security/Ohio Public/Private Partnership	OHS/OP3					S									(PA) <sup>6</sup>	S
Ohio Housing Financing Agency	OHFA			S		S									S	S
Ohio National Guard/Adjutant General	OHNG	S		S		S	C	S	S	S	S			S	(PA)	S
Ohio Public Works Commission	OPWC					S									S	S
Ohio Secretary of State	SOS					S									(PA)	S
Ohio State Highway Patrol	OSHP	S	A			S	CD <sup>5</sup>	S		S	S			(CP) <sup>4</sup>		S
Ohio State University Extension	OSU-Ext					S						S				S
Ohio Statewide Independent Living Council	OSILC			S		S	S								(PA)	S
Ohio Treasurer of State	TOS					S									(PA)	S
Ohio Water Development Authority	OWDA					S									S	S
Public Utilities Commission of Ohio	PUCO	S				S		B <sup>2</sup>			S		(CP)		(PA)	S

<sup>1</sup> A - ESF # Tab A Support Agency  
<sup>2</sup> B - ESF # Tab B Support Agency  
<sup>3</sup> C - ESF # Tab C Support Agency  
<sup>4</sup> (CP) - Coordinating/Primary Agency  
<sup>5</sup> D - ESF # Tab D Support Agency  
<sup>6</sup> (PA) - Partner Agency  
<sup>7</sup> S - Support Agency

# Attachment I-E: Federal Agency Support

Federal Agencies	Acronym	Emergency Support Functions															
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	NRIA <sup>1</sup>
American Red Cross <sup>2</sup>	ARC					S	P <sup>4</sup>					S <sup>5</sup>				S	
AmeriCorps	AmeriCorps			S		S	S									S	
Bureau of Alcohol, Tobacco, Firearms and Explosives (DOJ) <sup>6</sup>	ATF					S								C <sup>3</sup> P		S	
Center for Disease Control	CDC					S										S	S
Cybersecurity and Infrastructure Security Agency (DHS)	CISA		CP			S									CP	S	
Department of Commerce	DOC	S	S	S	S	S		S	S	S	S	S	S		S	S	
Department of Defense	DOD	S	S	S	S	S	S	S	S	CP	S	S	S	S	S	S	P
Department of Energy	DOE	S		S		S		S	S		S	S	CP		S	S	P
Department of Health and Human Services	HHS			S		S	S	S	CP	S	S	S			S	S	S
Department of Health and Human Services Assistant Secretary for Preparedness and Response	ASPR					S										S	S
Department of Homeland Security	DHS	S	S	S	S	S	S		S	S	S	S	S	S	S	CP	p
Department of Housing and Urban Development	HUD					S	S								S	S	
Department of Interior	DOI	S	S	S	S	S	S	S	S	S	S	P	S	S		S	S
Department of Justice	DOJ	S				S	S		S	S	S	S	S			S	
Department of Labor	DOL			S		S	S	S	S	S	S	S	S		S	S	S
Department of State	DOS	S		S	S	S			S		S	S	S		S	S	
Department of Transportation	DOT	CP		S		S	S	S	S	S	S	S	S		S	S	S
Department of the Treasury	TREAS					S	S							S	S	S	
Department of Veterans Affairs	VA			S		S	S		S							S	S

<sup>1</sup> The "primary" Nuclear/Radiological Incident Annex (NRIA) agency is determined by the situation.  
<sup>2</sup> The Agency is listed in the Federal ESF documentation. However, it is a private or non-profit organization.  
<sup>3</sup> C - Coordinating Agency  
<sup>4</sup> P - Primary Agency  
<sup>5</sup> S - Support Agency  
<sup>6</sup> Agencies in () are the Federal Agency's Parent Agency

## Attachment I-E: Federal Agency Support (continued)

Federal Agencies	Acronym	Emergency Support Functions															NRIA <sup>1</sup>	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15		
Environmental Protection Agency	EPA			S <sup>5</sup>	S	S			S		C <sup>3</sup> P <sup>4</sup>	S	S		S	S	P	
Extension Disaster Education Network <sup>2</sup>	EDEN					S						S				S		
Farm Services Agency (USDA) <sup>6</sup>	FSA					S										S		
Federal Bureau of Investigation (DOJ)	FBI					S										S		
Federal Communications Commission	FCC		S			S										S		
Federal Emergency Management Agency (DHS)	FEMA		P	P		CP	CP	CP		CP						P	P	S
Food and Drug Administration (HHS)	FDA					S											S	S
General Services Administration	GSA	S	S	S		S	S	CP	S		S	S				S	S	
Heritage Emergency National Task Force <sup>2</sup>	HENTF					S											S	
Historic Preservation, Advisory Council	HPAC					S						S					S	
National Aeronautics and Space Administration	NASA					S		S		S							S	
National Alliance on State Animal and Agricultural Emergency Programs <sup>2</sup>	NASAAEP					S						S					S	
National Animal Rescue and Sheltering Coalition <sup>2</sup>	NARSC					S						S					S	
National Archives and Records Administration	NARA					S						S					S	
National Assembly of State Animal Health Officials <sup>2</sup>	NASAHO					S						S					S	
National Association of State Directors of Agriculture <sup>2</sup>	NASDA					S											S	
National Center for Missing and Exploited Children <sup>2</sup>	NCMEC					S	S										S	
National Guard Service	ARNG					S								S			S	
National Nuclear Security Administration (DOE)	NNSA					S											S	S
National Oceanic and Atmospheric Administration (DOI)	NOAA					S											S	S

<sup>1</sup> The "primary" Nuclear/Radiological Incident Annex (NRIA) agency is determined by the situation.

<sup>2</sup> The Agency is listed in the Federal ESF documentation. However, it is a private or non-profit organization.

<sup>3</sup> C - Coordinating Agency

<sup>4</sup> P - Primary Agency

<sup>5</sup> S - Support Agency

<sup>6</sup> Agencies in () are the Federal Agency's Parent Agency

## Attachment I-E: Federal Agency Support (continued)

Federal Agencies	Acronym	Emergency Support Functions															NRIA <sup>1</sup>	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15		
National Park Service (DOI) <sup>6</sup>	NPS					S <sup>5</sup>				P <sup>4</sup>						S		
Natural Resources Conservations Service (USDA)	NRCS					S										S		
National Voluntary Organizations Active in Disaster <sup>2</sup>	VOAD					S	S									S		
Nuclear Regulatory Commission	NRC			S		S					S		S			S	P	
Occupational Safety and Health Administration (DOL)	OSHA					S										S	S	
Office of Personnel Management	OPM					S		S								S		
Other Federal Departments with Law Enforcement Officers	---					S							S			S		
Other Nongovernmental Organizations <sup>2</sup>	NGO					S	S									S		
Small Business Administration	SBA					S	S									S	S	
Social Security Administration	SSA					S	S									S		
Tennessee Valley Authority	TVA					S							S			S		
United States Agency for International Development	USAID					S			S	S						S		
United States Army (DOD)	USA					S										S		
United States Army Corps of Engineers (DOD)	USACE			C <sup>3</sup> P		S	S									S	S	S
United States Coast Guard (DHS)	USCG				S	S				P	P					S	P	
United States Department of Agriculture	USDA	S	S	S		S	S	S	S	S	S	CP	S			S	S	S
United States Department of Agriculture - Rural Development	USDA-RD					S											S	
United States Fire Administration (DHS-FEMA)	USFA				CS	S											S	
United States Forest Service (USDA)	USFS				CP	S											S	
United States Postal Service	USPS	S				S	S		S			S					S	

<sup>1</sup> The "primary" Nuclear/Radiological Incident Annex (NRIA) agency is determined by the situation.

<sup>2</sup> The Agency is listed in the Federal ESF documentation. However, it is a private or non-profit organization.

<sup>3</sup> C - Coordinating Agency

<sup>4</sup> P - Primary Agency

<sup>5</sup> S - Support Agency

<sup>6</sup> Agencies in () are the Federal Agency's Parent Agency

## Attachment I-F: Private and Non-Profit Organization Support

Private Agencies <sup>1</sup>	Acronym	Emergency Support Functions														
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Amateur Radio Emergency Services	ARES		S			S <sup>5</sup>	D <sup>3</sup>									S
American Nuclear Insurers	ANI					S	S								S	S
American Red Cross	ARC					S	S	A <sup>2</sup>	S						S	S
Corporation for National Community Services	CNCS					S									(PA) <sup>4</sup>	S
Energy Harbor	EH					S										S
Ohio Commission on Service & Volunteerism	ServeOhio					S									(PA)	S
Ohio Fire Chiefs' Association	OFCA					S			S	S						S
Ohio Hospital Association	OHA					S			S						(PA)	S
Ohio Mortuary Operational Response Team	OMORT					S			S							S
Ohio Rail Development Commission	ORDC					S									(PA)	S
Ohio Rural Electric Cooperatives Association	OREC					S									S	S
Ohio State Historic Preservation Office	SHPO					S									S	S
Ohio Task Force One	OH-TF1					S				S						S
Ohio Voluntary Organizations Active in Disaster	VOAD					S	S	S							(PA)	S
The Salvation Army	TSA					S	S								(PA)	S

<sup>1</sup> The list details private or non-profit organizations that support response in the State of Ohio

<sup>2</sup> A - ESF-7 Tab A Support Agency

<sup>3</sup> D - ESF-6 Tab D Support Agency

<sup>4</sup> (PA) - Partner Agency

<sup>5</sup> S - Support Agency

# Attachment I-G: Key Responsibilities – ODH

Key Responsibility by Function						ESF 3	ESF 5			ESF 6	ESF 8		ESF 10	ESF 14	ESF 15	
		Director/Medical Director	Bureau Management (BEHRP)	Human Resources	ODH - Financial	Waste Management	Liaisons	Dose Assessment Staff (BEHRP)	Field Support Teams	Population Monitoring	ODH-DOC (BHP)	ESF-8	ESF-10	Recovery	Public Information	Public Inquiry
Command and Control	Command & Control	S	S				S			S						
	Alert & Notification		S	C												
	Communications	C	C				C							C		
	Protective Response	P	S			S	S	S	S				S			S
	Public Information	S		C			S							P	P	
Operations	Rescue															
	Traffic Control															
	Emergency Medical Services										S					
	Accident Assessment	P	P			C	P	S	S				S			S
	Law Enforcement															
Logistics	Public Health	P	P	S		P			P	P	P	P	P	P	P	S
	Sanitation		P			S				C	P					
	Social Services										S					
	Transportation															
	Mass Care	C							S		S					
	Evacuation															
Planning	Radiological Exposure Control	S	P			P	P		P			P	P			
	Public Education		C											P		
	Prevention & Preparedness	S	S		S	S	S	S	S	S	S	S	S	S	S	S
	Protective Response Training	S	S			S	S	S	S	S		S	S	S		S
Finance/ Administration	Resource Management	S	S	S	S					S			S			S
	Compensation/Claims				S											
	Procurement/Cost				P						S	S				S
	Time			S	P											

# Attachment I-H: Key Responsibilities – Ohio EMA

Key Responsibility by Function			ESF 2	ESF 5			ESF 7	ESF 14	ESF 15					
		Executive Director	ESF-2	ESF-5	Field Monitoring Team Coordinator	Field Monitoring Teams	ESF-7	ESF-14	ESF-15	EOC Manager	Operations	Fiscal Branch	Human Resources	Radiological Branch
Command and Control	Command & Control	P		S	S					S	S			
	Alert & Notification			P						S				
	Communications		P	S										
	Protective Response	P			S	S					S			
	Public Information								P					
Operations	Accident Assessment													
	Law Enforcement													
	Radiological Exposure Control				P	S								
	Rescue													
	Traffic Control													
Logistics	Evacuation													
	Mass Care													
	Public Health													
	Sanitation													
	Social Services													
	Transportation													
Planning	Prevention & Preparedness		S	S	S	S	S	S	S	S	S	S	S	P
	Protective Response Training		S	S	S	S	S	S	S	C	S			S
	Public Education													
Finance/ Administration	Compensation/Claims								S			P		
	Procurement/Cost						P					S		
	Resource Management						S				P			
	Time												P	

# Attachment I-I: Key Responsibilities – Ohio EPA

Key Responsibility by Function						ESF 3	ESF 5	ESF 10	ESF 15
		Director	Emergency Spill Hotline	Executive Room Representative	Human Resources	ESF 3	FMT Communicator	Radiation Assessment Team	ESF 10
Command and Control	Command & Control	P		S			S		
	Alert & Notification	S	S				S		
	Communications		S	S			S		
	Protective Response						S		
	Public Information		S						S
Operations	Accident Assessment						S		
	Law Enforcement								
	Radiological Exposure Control						S		
	Rescue								
	Traffic Control								
Logistics	Evacuation								
	Mass Care								
	Public Health							S	
	Sanitation					P			
	Social Services								
	Transportation								
Planning	Prevention & Preparedness						S		
	Protective Response Training					S	S	S	S
	Public Education								
Finance/ Administration	Compensation/Claims								
	Procurement/Cost								
	Resource Management							S	
	Time				P				

# Attachment I-J: Key Responsibilities – ODA, ODNR, ODOT, & PUCO

Key Responsibility by Function  P - Primary S - Support C - Coordinating		ODA				ODNR					ODOT				PUCO				
		Director	Sample Teams	ESF-11	ESF-15	Director	Human Resources	Sample Teams	ESF-3	ESF-9	ESF-15	Director	Human Resources	ESF-1	ESF-3	ESF-15	Director	Human Resources	ESF-12
Command and Control	Command & Control	P				P						P					P		
	Alert & Notification																		
	Communications																		
	Protective Response	S		S	S				S	S				S					S
	Public Information			S	S						S					S			
Operations	Rescue								P										
	Traffic Control								P										
	Accident Assessment		S					S											
	Law Enforcement								S										
Logistics	Public Health			S	S														
	Sanitation			S	S			P						P					
	Social Services																		
	Transportation												P						
	Mass Care																		
	Evacuation												S						
Planning	Radiological Exposure Control		S					S		S									
	Public Education			S															
	Prevention & Preparedness								S	S			S	S					S
	Protective Response Training			S						P									
Finance/ Administration	Resource Management			P						P	P			P	P				P
	Compensation/Claims																		
	Procurement/Cost																		
	Time						P						P					P	

## Attachment I-K: Key Responsibilities – OHNG & OSHP

Key Responsibility by Function  P - Primary S - Support C - Coordinating		OHNG									OSHP	
		Adjutant General	ESF-1	ESF-2	ESF-3	ESF-5	ESF-7	ESF-8	ESF-13	ESF-15	Superintendent	ESF-13
Command and Control	Command & Control	P									P	
	Alert & Notification											
	Communications			S								
	Protective Response											S
	Public Information								S			S
Operations	Rescue											
	Traffic Control							S				S
	Accident Assessment					S						
	Law Enforcement							S				P
Logistics	Public Health						S					
	Sanitation				S							
	Social Services											
	Transportation		S									
	Mass Care											
	Evacuation		S									
Planning	Radiological Exposure Control					S						
	Public Education											
	Prevention & Preparedness											
	Protective Response Training		S	S	S	S	S	S	S		S	S
Finance/ Administration	Resource Management						S					
	Compensation/Claims											
	Procurement/Cost											
	Time											

## II. Planning Standard C

### Emergency Response Support & Resources

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Arrangements for requesting and effectively using assistance resources have been made, arrangements to accommodate State and local staff at the licensee's EOF have been made, and other organizations capable of augmenting the planned response have been identified. [Regulatory References: 10 CFR 50.47(b)(3); 44 CFR 350.5(a)(3); 10 CFR Part 50, Appendix E, Sec. IV.A and E]

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#### A. State Resources

##### 1. Staffing

##### a. Utility EOF Liaisons

- i. Ohio EMA will provide a Senior Health Physicist to the Utility EOF. ODH will provide either a Health Physicist or a Senior Health Physicist to the Utility EOF.
- ii. The ODH EOF Liaison will provide key plant information to Dose Assessment at the State EOC and the ODH EOC Liaison at the county (Columbiana, Lake, or Ottawa County) EOC. The Ohio EMA EOF Liaison will provide assistance to the ODH EOF Liaison, when necessary. The Ohio EMA EOF Liaison will also provide key plant information to Radiological Branch staff at the county and State EOCs.
- iii. A MARCS radio base station has been supplied at each Utility EOF by Ohio EMA for EOF Liaison backup communications. The radios are tested monthly.
- iv. A fax machine and telephones are provided at each EOF by the Utility for the EOF Liaisons' communications.
- v. Each Utility EOF maintains a workspace for the EOF Liaisons to use.

##### b. State EOC Representatives

- i. Many agencies provide representatives to staff the State EOC. See Attachment II-A for more details.
- ii. Representatives sent to the State EOC must be trained and knowledgeable or in the process of being trained in the duties specific to their agency's function(s).
- iii. The number of representatives that agencies will send for each shift will vary, as will their responsibilities.
  - 1) Some agencies will send a single representative. For example, Ohio Department of Medicaid's primary role is ESF-6 support. However, the representative must also be able to support missions from ESF-14.

- 2) Some must send multiple representatives. For example, ODH's ESF-8 staff will provide support for ESF-2, ESF-3, ESF-6, ESF-11, ESF-14 and ESF-15. ODH's ESF-10 staff will provide support to both ESF-8 and ESF-15. An additional number of personnel are sent to support ESF-5 and its Dose Assessment functions. ODH also provides representatives for the Executive Room and ESF-15.
- 3) Additionally, the day shift is likely to be fully staffed. While a night shift may only be staffed with a skeleton crew depending on the tempo of the incident.
- iv. Coordination and integration of agencies staffing the State EOC will occur through WebEOC, SPOT reports, and both regularly scheduled and impromptu EOC briefings.

## 2. Shortfalls

- a. State partner agencies may identify shortfalls in capabilities or resources at any time, including during:
  - i. Advance planning
  - ii. Scheduling of personnel, equipment, or facilities
  - iii. Mission or task planning
  - iv. Resource request fulfillment
- b. ESF-7, Resource Support and Logistics, is key to reducing shortfalls. Additional support or resources may be requested when the need exceeds the State's available capabilities.
- c. ESF-7 can obtain resources including, but not limited to, equipment, personnel, or food and water through multiple avenues, including:
  - i. Private Vendors
    - 1) The expected time for emergency response support or resources to be available after purchase will be negotiated at the time of the purchase.
    - 2) Some private industry resources may be under exclusive contract to FEMA. In such events, ESF-7 will coordinate through the Federal Coordinating Officer to get a portion of these resources.
  - ii. Emergency Management Assistance Compact (EMAC)
    - 1) EMAC is ratified in ORC 5502.40. The purpose of the compact is to provide for mutual assistance between the states entering into the compact in managing any emergency or disaster that is duly declared by the governor of the affected state(s), whether arising from natural disaster, technological hazard, man-made disaster, civil emergency aspects of resource shortages, community disorders, insurgency, or enemy attack.

- 2) This compact will also provide for mutual cooperation in emergency-related exercises, testing, or other training activities using equipment and personnel simulating performance of any aspect of the giving and receiving of aid by party states or subdivisions of party states during emergencies, such actions occurring outside actual declared emergency periods. Mutual assistance in the compact may include the use of the state's National Guard forces, either in accordance with the National Guard Mutual Assistance Compact or by mutual agreement between states.
  - 3) It is unlikely that an individual state would have all the resources needed for every type of emergency or the capability of delivering resources to areas where emergencies exist. The prompt, full, and effective utilization of resources of the participating states, including any resources on hand or available from the federal government or other sources, that are essential to the safety, care, and welfare of the people in the event of any emergency or disaster declared by a party state, will be the underlying principle on which all articles of this compact will be understood.
  - 4) The legally designated state official who is assigned responsibility for emergency management will be responsible for formulation of the appropriate interstate mutual aid plans and procedures necessary to implement this compact.
  - 5) Many resources can be requested through EMAC including, but not limited to, personnel, equipment, food, and water. Resources that are listed in the FEMA Resource Typing Library already have been defined with their specifications, position qualifications, etc. If a resource does not have a FEMA typing, one can create a request that includes a detailed definition, equipment specifications, position qualifications, or position tasks. When a request is put into the EMAC system, a required arrival time is included.
  - 6) EMAC provides an organized structure through which a state can request aid from other states during an emergency. It establishes that the requesting state is responsible for reimbursing the assisting state for any expenses incurred. EMAC also addresses liability, compensation, and licensing issues for personnel deployed pursuant to an EMAC request.
  - 7) EMAC does not replace federal assistance but acts to complement federal resources.
- iii. Federal government (Requests will be made through the Governor or Ohio EMA Director)
- 1) To meet initial surge resource needs, FEMA, in cooperation with the State and local EOCs, may proactively "push" or pre-position resources to, or near, an incident site without specific local requests to do so.
  - 2) Time expected for the requested resources to be available will be negotiated at the time of the request.
  - 3) For a more detailed list of Federal resources that will be requested, see section II.B.

iv. Other

State logistics facilities may be sourced from State-owned or leased facilities, facilities contracted through the Department of Administrative Services (DAS), or other county or municipal facilities.

d. A county EMA or state partner agency may request emergency response support and/or resources through the State EOC procedures.

i. The Assessment Room Field Desk will receive a request from a county EMA. The Field Desk will enter a Resource Request into WebEOC. A state partner agency may enter a Resource Request directly into WebEOC.

ii. The Resource Request is reviewed by the Mission Controller or the Operations Section Branch Chief. They will determine the ESF best suited to fulfill the Resource Request and assign it to that ESF.

iii. The ESF receives the Resource Request and assigns it to either the primary or a support agency within the ESF.

iv. If that agency does not have the necessary resources, they may request assistance from ESF-7 to purchase the resources through private vendors, request them through EMAC, or request them from the federal government.

e. Integration of emergency response support or resources

i. ESF-1, Transportation, can assist in locating vehicles for responders, if necessary. If airfield clearance or supplies are required, ESF-1 can assist in ensuring they are made available to responders.

ii. ESF-2, Communications, will formulate an Incident Radio Communications Plan to provide information on radio frequency and/or trunked radio system talk group assignments for each operational period, for use by incident responders. ESF-2 maintains various mobile communication resources including mobile satellite trailers with wireless and wired data capabilities, vehicles with command level interoperability, satellite communications systems and links, and a mobile radio tower with 800MHz, VHF, and UHF radio repeater capabilities.

iii. ESF-7 can assist in locating housing or food for emergency response support that arrives to supplement State resources. A location to house FRMAC staff and supplies will be determined. ESF-7 would also be able to locate sources for needed supplies, such as nitrogen or fuel.

3. Laboratories

a. Ohio Department of Health Laboratory

i. The ODH-Lab is located on the ODA campus at 8995 East Main Street, Building 22, Reynoldsburg, OH.

ii. The ODH-Lab is the primary laboratory available for the analysis of both emergency and ingestion phase samples (e.g., air, soil, milk, water, meat, fish, crops, vegetation, etc.).

- iii. The ODH-Lab's current capacity for environmental samples (including log in and prep)
  - 1) Air filters: 70-80 per day based on a five-minute run time for gross alpha and beta analysis.
  - 2) Air cartridges and other samples: 30 per day based on a twenty-minute run time for gamma analysis.

Note: If count times are adjusted, the number per day will change.
- iv. The maximum acceptable surface dose rate of a sample is defined in the RAD-REP-0355 Field Sample Screening Station SOP.
- v. The ODH-Lab is responsible for the maintenance of all radiological laboratory equipment. Laboratory equipment is calibrated annually or per manufacturer's recommendations. A calibration log is maintained by the ODH-Lab and is available upon request. This information is reported in the ALC.
- vi. Dependent upon the location of the Sample Screeners, the estimated transportation time of samples is approximately three hours. Transportation will be coordinated through ESF-1.
- vii. Upon receipt of samples, the ODH-Lab will retain each sample's Chain of Custody in accordance with ODH policy.
- viii. A temporary storage location has been identified on ODA's campus near the ODH-Lab. Refrigerated storage containers will be sourced and leased or rented through ESF-7. Ancillary needs, such as generators, will also be identified and procured.
- ix. The ODH-Lab does not have the capability to analyze Sr-90. FRMAC will be asked to assist in sending samples to laboratories who can analyze Sr-90.
- x. Sample analysis results will be uploaded to Dose Assessment through the use of CBRNResponder, if available. Backup methods may include the use of email, fax, and/or telephone.

b. Additional Laboratories

Additional laboratories will be coordinated through FRMAC.

## B. Federal Resources

1. Authorities

- a. Presidential Policy Directive 8, National Preparedness
- b. Presidential Policy Directive 44, Enhancing Domestic Incident Response
- c. Homeland Security Presidential Directive 5, Management of Domestic Incidents
- d. National Security Memorandum 16, Strengthening the Security and Resilience of United States Food and Agriculture (classified)
- e. Homeland Security Act of 2002
- f. Post-Katrina Emergency Management Reform Act of 2006

- g. Pets Evacuation and Transportation Standards Act of 2006
  - h. Robert T. Stafford Disaster Relief and Emergency Assistance Act of 1988
  - i. Atomic Energy Act of 1954 (as amended)
  - j. Price-Anderson Nuclear Industries Indemnity Act
  - k. Reorganization Plan No. 3 of 1970
  - l. The Energy Reorganization Act of 1974
  - m. 44 CFR 350, Review and Approval of State and Local Radiological Emergency Plans and Preparedness
  - n. 44 CFR 351, Radiological Emergency Planning and Preparedness
2. Agency Responsibilities

The following is a sampling of the agencies listed in the 2023 Nuclear/Radiological Incident Annex along with some of their responsibilities:

- a. Advisory Team for Environment, Food, and Health (A-Team)

The A-Team will:

- i. Include representatives from U.S. Environmental Protection Agency (EPA), the U.S. Department of Agriculture (USDA), the U.S. Food and Drug Administration (FDA), the Centers for Disease Control and Prevention (CDC), and other Federal agencies, as needed.
- ii. Act as an operational arm of the Federal Radiological Preparedness Coordinating Committee (FRPCC) which is organized under FEMA.
- iii. Be concurrently activated with the FRMAC.
- iv. Develop coordinated advice and recommendations on environmental, food, health, and animal health matters for IZRRAG.
- v. Provide protective action recommendations, not decisions, technical and scientific advice, and bases its recommendations on science and best practices. The A-Team will utilize information provided by the Interagency Modeling and Atmospheric Assessment Center (IMAAC), FRMAC, and other relevant sources.
- vi. Provide advice in matters including, but not limited to:
  - 1) Protective Action Guides (PAG) and their application to the incident
  - 2) PARs using data and assessment from FRMAC
  - 3) Information needed to perform FRMAC field monitoring in support of PARs
  - 4) Health and safety advice or information for the public and for workers
  - 5) Estimated effects of radioactive releases on human health and environment
  - 6) Measures to prevent or minimize contamination of milk, food, and water
  - 7) Recommendations for minimizing losses of agricultural resources from contamination

- 8) Recommendations regarding the health, management, and disposition of livestock, poultry, pets, and other animals and the disposition of contaminated foods, especially perishable commodities
  - 9) Availability of food, animal feed, and water supply inspection programs to ensure wholesomeness
  - 10) Relocation of survivors, re-entry and into the contaminated area, and other radiation protection measures
  - 11) Recommendations for recovery, return, and remediation activities of the contaminated area
- b. U.S. Department of Energy (DOE) / National Nuclear Security Administration (NNSA)
- i. Aerial Measuring System (AMS)

AMS is a fleet of rapidly deployable aircraft, both fixed- and rotary-wing, equipped with specialized radiation detection systems to provide real-time measurements of ground radiation contamination.
  - ii. Consequence Management Home Team (CMHT)
    - 1) The subject matter experts that make up the CMHT operate from several different laboratories, which include the Lawrence Livermore National Laboratory, Los Alamos National Laboratory, Remote Sensing Laboratory, and Sandia National Laboratory.
    - 2) The primary mission of the CMHT is to assist decision makers by assembling and interpreting data in order to provide for public and worker safety and minimize the socioeconomic impacts of a nuclear/radiological event. This includes information, technical, and operational support. CMHT support includes assembling data and populating the database, analyzing event data (e.g., monitoring data), evaluating hazards, and providing event information and data products (e.g., plume maps) to federal, state, and local agencies.
    - 3) The CMHT will be operational within two hours of receiving notification of an event.
  - iii. Consequence Management Response Team (CMRT)
    - 1) The response team deploys with qualified and trained personnel and an equipment package to support the technical needs of the response. The CMRT can be augmented at any time during the response with additional personnel and equipment from NNSA sites and RAP regions.
    - 2) CMRT provides the base elements of a FRMAC response center, including command and control, data assessment, radiological monitoring, health and safety, laboratory analysis, and logistical support. The CMRT deploys with consumable materials, such as personal protective equipment (PPE), to support operations for a minimum of three days. The team requires external support for lodging, food and workspace.

- 3) The CMRT consists of federal and contractor personnel to support 24-hour operations and is prepared to respond to a radiological event within six hours of notification.
- iv. FRMAC
- FRMAC will:
- 1) Coordinate federal radiological monitoring and assessment activities with those of state and local agencies.
  - 2) Include representation from the U.S. Department of Energy (DOE), the U.S. Environmental Protection Agency (EPA), the U.S. Department of Commerce (DOC), the U.S. Department of Agriculture (USDA), the U.S. Army Corps of Engineers (USACE), and other Federal agencies as needed.
  - 3) Provide the following capabilities to support situational awareness and decision-making:
    - a) Ground and aviation-based monitoring and sampling
    - b) Data assessment and management
    - c) Sample processing and laboratory analysis
    - d) Health and safety monitoring
    - e) Data product development
  - 4) Be led by the DOE for the initial response. Leadership transitions to the EPA when the immediate emergency operations shift predominantly to remediation and/or recovery.
- v. The National Atmospheric Release Advisory Center (NARAC) is the primary provider of radiological plume modeling for the IMAAC.
- vi. Radiological Assistance Program (RAP)
- 1) The RAP is the nation's premier first-response resource for advising decision-makers on steps to take to evaluate and minimize the hazards of a radiological or nuclear incident.
  - 2) The RAP support ranges from giving technical information or advice over the telephone to sending highly trained personnel with state-of-the-art equipment to the incident site where team members help identify, characterize, and minimize any radiological or nuclear hazards.
  - 3) The RAP's highly trained scientific and technical teams have access to the most advanced technology available through the national laboratory consortium. The personnel are trained to provide initial assistance in the mitigation of immediate radiation hazards. However, the RAP team members are not involved in recovery and cleanup operations.
  - 4) Each of the nine RAP regions has a minimum of three teams with a standard composition of eight personnel. Teams can be augmented with other specialists and will be tailored to the specific mission.

- 5) The RAP V Team can be deployed in approximately two hours and is based in Chicago, Illinois. Additional drive time to the NPP areas is roughly 8 hours to BVPS, 6 hours to DBNPS, and 7.5 hours to PNPP.
- vii. Radiation Emergency Assistance Center/Training Site (REAC/TS)
- 1) The REAC/TS, located at the Oak Ridge Institute for Science and Education, is always on call to provide expertise to medical providers and first responders worldwide regarding the medical aspects of a radiological or nuclear incident.
  - 2) As a DOE deployable asset, the REAC/TS can provide emergency response services in a radiological/nuclear event. Specialized response teams consist of physicians, nurse/paramedics and health physicists.
  - 3) Teams at the REAC/TS provide advice and subject matter expertise regarding rapid dose assessment, radiological and medical triage, diagnosis and medical management of radiological incidents. The REAC/TS response teams deploy with advanced medical equipment and remain up to date in advanced medical and trauma life support.
  - 4) Each team is comprised based on the needs of the response and is on call 24 hours a day/seven days a week.
- c. U.S. Department of the Interior (DOI)
- Note: DOI has eleven agencies under its umbrella, including US Fish and Wildlife Service and US Geological Survey.
- DOI will:
- i. Provide resources, including personnel, equipment, and laboratory support, to advise and assist in evaluating processes affecting radioisotopes in soils.
  - ii. Provide resources, including personnel and equipment, to advise and assist in the development of geographic information systems databases to be used in the analysis and assessment of contaminated areas.
  - iii. Support identification and tracking of contaminated transient wildlife, which can transport radioisotopes outside of the known radiation zones of the incident.
- d. U.S. Department of Transportation (DOT)
- DOT will:
- i. Provide technical advice and assistance on the transportation of radiological materials and the impact of the incident on the transportation infrastructure.
  - ii. Regulate the transportation of hazardous materials, including radiological materials.
- e. U.S. Environmental Protection Agency (EPA)
- i. Consequence Management Advisory Division (CMAD)
    - 1) CMAD serves as the EPA's national special team providing expertise and response capabilities for Chemical, Biological, Radiological, and Nuclear (CBRN) events.

- 2) CMAD will provide scientific and technical support for various topics including environmental sampling and monitoring, risk assessment, and structure decontamination.
  - 3) CMAD manages the Airborne Spectral Photometric Environmental Collection Technology (ASPECT).
    - a) The ASPECT aircraft will provide remotely sensed radiological data and imagery.
    - b) It can identify, quantify, and map ground-based radiation and is capable of collecting high-resolution photography and video products.
    - c) Data products can be transferred to ground base support within minutes of collection through satellite communications, while in flight.
- ii. Environmental Laboratory Network (ERLN)
- 1) ERLN created a network of laboratories to provide environmental laboratory testing capability and capacity to meet EPA's responsibilities for surveillance, response, decontamination, and recovery from incidents involving the release of chemical, biological, or radiological contaminants.
  - 2) The network facilitates the coordination of laboratories capable of responding.
- iii. Environmental Response Team (ERT)
- The ERT:
- 1) Will provide on-site health physics, technical advice, and support related to radiological contamination.
  - 2) Can provide nuclide-specific airborne concentration limits for worker protection for respiratory protection and site boundary monitoring.
  - 3) Maintains caches of standardized radiological instrumentation.
  - 4) Houses specialized equipment for remote exposure rate monitoring.
- iv. EPA RadNet
- 1) EPA's RadNet provides near-real-time measurements of gamma radiation.
  - 2) RadNet has 140 stationary air monitors located across all 50 states.
  - 3) The RadNet system will detect any increase in airborne radiation readings. Through this, the progression of the plume may be tracked.
- v. Radiological Emergency Response Team (RERT)
- 1) RERT support includes:
    - a) Advice on protective measures to ensure public health and safety.
    - b) Assessments of public health effects from radiation exposure.
    - c) Monitoring, sampling, laboratory analyses, assessment, and interpretation to evaluate and characterize environmental impacts.

- d) Data collection support to record, aggregate, and share sampling and/or monitoring results.
    - e) Public information assistance.
    - f) Technical advice and assistance for environmental containment, cleanup, restoration, and recovery.
  - 2) RERT offers the following types of equipment and services:
    - a) Mobile command post
    - b) Field monitoring and sampling equipment
    - c) Fixed radioanalytical laboratory
- vi. Radiation Task Force Leaders (RTFLs)
 

RTFLs will lead small teams to conduct:

  - 1) Field radiological measurements
  - 2) Contamination monitoring
  - 3) Soil and air sampling
  - 4) Decontamination line setup and support
  - 5) Dose management support
- f. U.S. Department of Health and Human Services (HHS)
 

Note: The HHS has sixteen agencies under its umbrella, including CDC and FDA.

HHS will provide:

  - i. Guidance and conduct epidemiological surveillance to detect radiological exposure symptoms and collect exposure histories.
  - ii. Advice for preventing or reducing exposure of the general population and response workers to radiation or radioactive materials.
  - iii. Advice on triage, assessment, medical management, behavioral health, and treatment of casualties for trauma and exposure to or contaminated by radioactive materials, including among emergency workers.
  - iv. Advice, guidance, and resources in assessing the impact of the effects of radiological incidents on the health, including behavioral health, of persons in the affected area.
  - v. Manage long-term public monitoring and support follow-on personal data collection, including the collection and processing of biological samples, and track patient treatment and long-term health effects.
  - vi. Coordinate behavioral health response and recovery efforts.
- g. Federal Emergency Management Agency (FEMA)
  - i. The Stafford Act gives the FEMA the responsibility for coordinating government-wide relief activities.

- ii. The FEMA Administrator is designated as the principal advisor to the President, the Secretary of Homeland Security, and the National Security Council regarding emergency management.
  - iii. The FEMA's responsibilities include operation of the National Response Coordinator Center (NRCC); the effective coordination of all ESFs and Recovery Support Functions; and the preparation for, protection against, response to, and recovery from all-hazards incidents.
  - iv. After the Presidential declaration of a major disaster or emergency declaration, the FEMA has the accelerated ability to send federal assistance in the absence of a specific request by a state to save lives and prevent suffering.
  - v. A Radiological Operations Support Specialist (ROSS) a radiological incident subject matter expert that acts as a resource to assist emergency managers and first responders in navigating the unique challenges of radiological incidents and emergencies.
- h. USDA

The USDA will:

- i. Assist in the planning and collection of agricultural samples within the Ingestion Exposure Pathway EPZ.
- ii. Assess damage to crops, soil, livestock, poultry, and processing facilities, and incorporate the findings in a damage assessment report.
- iii. Inspect and assist in the collection of samples of crops, meat and meat products, poultry and poultry products, egg products, milk and dairy products to ensure they are safe for human consumption.
- iv. In conjunction with the HHS, assist in monitoring the production, processing, storage, and distribution of food through the wholesale level to eliminate contaminated product and to ensure that levels of contamination in the product are safe and below the Derived Intervention Levels (DILs).
- v. Provide support and advice for screening and decontamination of pets and farm animals that may have been exposed to radiation or contaminated with radioactive materials.
- vi. Assist in the planning and operations for disposal of animal carcasses.
- vii. Farm Services Agency (USDA-FSA)

The USDA-FSA will:

- 1) Provide information to farmers about protective actions and advisories through its county newsletter system. To view news releases, fact sheets and announcements, visit the USDA-FSA website at <http://www.fsa.usda.gov>.
- 2) Maintain a list of food, feed, fertilizer, and grain facilities.
- 3) Maintain a list of farms in the affected area including contact and location, information on crop production, acreage, status of harvest, and farm capability.

### 3. Federal Financial Resources

#### a. Price-Anderson Nuclear Industries Indemnity Act (Price-Anderson Act)

The Price-Anderson Act became law on Sept. 2, 1957, to cover liability claims of members of the public for personal injury and property damage caused by a commercial nuclear power plant accident. The legislation helped encourage private investment in commercial nuclear power by placing a cap, or ceiling, on the total amount of liability each nuclear power plant licensee faced in the event of an accident. Over time, the "limit of liability" for a nuclear accident has increased the insurance pool to more than \$13 billion.

Currently, owners of nuclear power plants pay an annual premium for \$450 million in private insurance for offsite liability coverage for each reactor site (not per reactor). This primary, or first tier, insurance is supplemented by a second tier. In the event a nuclear accident causes damages in excess of \$450 million, each licensee would be assessed a prorated share of the excess, up to approximately \$131 million per reactor. This secondary tier of funds contains about \$12.9 billion. Payouts in excess of 15 percent of these funds require a prioritization plan approved by a federal district court. If the court determines that public liability may exceed the maximum amount of financial protection available from the primary and secondary tiers, each licensee would be assessed a pro rata share of this excess not to exceed 5 percent of the maximum deferred premium (\$131 million); approximately \$6.5 million per reactor. If the second tier is depleted, Congress is committed to determine whether additional disaster relief is required.

The only insurance pool writing nuclear insurance, American Nuclear Insurers (ANI), is comprised of property- casualty insurance and reinsurance companies. The average annual premium for a single-unit reactor site in 2022 is approximately \$1 million. The premium for a second or third reactor at the same site is discounted to reflect a sharing of limits. The average site premium for 2022 is approximately \$1.3 million.

Claims resulting from nuclear accidents are covered under Price-Anderson; for that reason, all U.S. property and liability insurance policies exclude nuclear accidents. Claims can include any incident (including those caused by theft or sabotage) in transporting nuclear fuel to a reactor site, storing nuclear fuel or waste at a site; during operation of a reactor, including the discharge of radioactive effluent; and transporting irradiated nuclear fuel and nuclear waste from the reactor.

Insurance under Price-Anderson covers bodily injury, sickness, disease or resulting death, property damage and loss, including reasonable living expenses for evacuated individuals. The Energy Policy Act of 2005 extended the Price-Anderson Act to Dec. 31, 2025.

#### b. Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act)

The Stafford Act, 42 U.S.C. § 5121 et seq., authorizes the President to issue a major disaster or emergency declaration upon the request of a Governor when an incident overwhelms state and local governments. The declaration allows the President to access funds and disaster relief assistance set aside by Congress.

The Stafford Act authorizes the delivery of federal technical, financial, logistical, and other assistance to state and local governments. FEMA coordinates administration of disaster relief resources and assistance to states.

Three types of assistance are authorized by the Act. Assistance can take the form of direct federal aid in terms of services, grants, and technical support, or as reimbursement for services provided by or contracted for by affected states.

Individual Assistance provides immediate direct and financial assistance to individuals for housing and other disaster related needs.

Public Assistance provides aid to eligible applicants seeking assistance with eligible costs for eligible work performed at eligible facilities. Eligible applicants are state and local governments as well as certain private nonprofit entities that provide services of a governmental nature. Eligible facilities are structures or equipment such as schools, hospitals, or public buildings that are owned by eligible applicants.

Eligible work is disaster recovery work performed on an eligible facility that is needed as the result of a major disaster event, located within a designated disaster area, and the legal responsibility of an eligible applicant. Emergency work is assistance to meet immediate threats to life and property, such as debris removal, and emergency protective measures, such as search, rescue, evacuation, emergency medical care, food, water, and shelter. Permanent work activities include repair, restoration, replacement of damaged facilities owned by states and local governments and eligible private nonprofits.

Eligible costs are the reasonable costs that can be directly tied to the performance of eligible work and comply with governmental procurement requirements.

Assistance provided by FEMA under the Stafford Act may not duplicate assistance provided or available under the authority of another federal agency.

## Attachment II-A: State EOC Representatives

Agency	Acronym	Function(s)
Amateur Radio Emergency Services	ARES	ESF-2 Support Staff
American Red Cross	ARC	ESF-6 Support Staff ESF-8 Support Staff ESF-14 Support Staff
Civil Air Patrol, Ohio Wing	OCAP	ESF-1 Support Staff
Department of Administrative Services	DAS	ESF-1 Support Staff ESF-3 Support Staff ESF-7 Support Staff ESF-11 Support Staff ESF-14 Support Staff
Department of Developmental Disabilities	DODD	ESF-1 Support Staff ESF-6 Support Staff ESF-8 Support Staff
Department of Public Safety	DPS	ESF-15 Support Staff Legal Representative IT Technicians
Energy Harbor	EH	State EOC Liaison
Governor's Office	GO	Executive Staff
Ohio Department of Aging	ODA	ESF-6 Support Staff ESF-14 Support Staff
Ohio Department of Agriculture	ODA	ESF-3 Support Staff ESF-7 Support Staff ESF-8 Support Staff ESF-10 Support Staff ESF-11 Staff ESF-14 Support Staff ESF-15 Support Staff
Ohio Department of Education	ODE	ESF-6 Support Staff ESF-14 Support Staff
Ohio Department of Health	ODH	ESF-2 Support Staff ESF-3 Support Staff ESF-5 Staff ESF-6 Support Staff ESF-8 Staff ESF-10 Staff ESF-11 Support Staff ESF-14 Support Staff ESF-15 Support Staff Executive Staff

## Attachment II-A: State EOC Representatives (continued)

Agency	Acronym	Function(s)
Ohio Department of Jobs & Family Services	ODJFS	ESF-6 Staff
Ohio Department of Medicaid	ODM	ESF-6 Support Staff ESF-14 Support Staff
Ohio Department of Natural Resources	ODNR	ESF-1 Support Staff ESF-2 Support Staff ESF-3 Staff ESF-4 Support Staff ESF-7 Support Staff ESF-9 Staff ESF-10 Support Staff ESF-13 Support Staff ESF-14 Support Staff ESF-15 Support Staff
Ohio Department of Transportation	ODOT	ESF-1 Staff ESF-2 Support Staff ESF-3 Support Staff ESF-4 Support Staff ESF-7 Support Staff ESF-9 Support Staff ESF-12 Support Staff ESF-14 Support Staff ESF-15 Support Staff
Ohio Emergency Management Agency	Ohio EMA	ESF-1 Support Staff ESF-2 Staff ESF-3 Support Staff ESF-4 Support Staff ESF-5 Staff ESF-6 Support Staff ESF-7 Staff ESF-9 Support Staff ESF-10 Support Staff ESF-14 Staff ESF-15 Staff Executive Staff Operations Staff

## Attachment II-A: State EOC Representatives (continued)

Agency	Acronym	Function(s)
Ohio Fire Chiefs' Association	OFCA	ESF-4 Support Staff ESF-8 Support Staff ESF-9 Support Staff
Ohio Environmental Protection Agency	Ohio EPA	ESF-3 Support Staff ESF-5 Support Staff ESF-8 Support Staff ESF-9 Support Staff ESF-10 Staff ESF-11 Support Staff ESF-14 Support Staff ESF-15 Support Staff Executive Staff
Ohio Mental Health & Addiction Services	OhioMHAS	ESF-6 Support Staff ESF-8 Support Staff ESF-14 Support Staff
Ohio National Guard	OHNG	ESF-1 Support Staff ESF-2 Support Staff ESF-3 Support Staff ESF-7 Support Staff ESF-8 Support Staff ESF-9 Support Staff ESF-10 Support Staff ESF-11 Support Staff ESF-13 Support Staff
Ohio State Highway Patrol	OSHP	ESF-1 Support Staff ESF-2 Support Staff ESF-7 Support Staff ESF-9 Support Staff ESF-10 Support Staff ESF-13 Staff ESF-15 Support Staff Executive Staff
Ohio State University - Extension	OSU-Ext	ESF-11 Support Staff
Ohio Voluntary Organizations Active in Disasters	VOAD	ESF-6 Support Staff ESF-7 Support Staff

## Attachment II-A: State EOC Representatives (continued)

Agency	Acronym	Function(s)
Public Utilities Commission of Ohio	PUCO	ESF-1 Support Staff ESF-2 Support Staff ESF-3 Support Staff ESF-10 Support Staff ESF-12 Staff
State Fire Marshal	SFM	ESF-4 Staff ESF-8 Support Staff ESF-10 Support Staff ESF-13 Support Staff
U.S. Coast Guard	USCG	ESF-9 Support Staff

## Attachment II-B: Potential Airports for FRMAC Accessibility

Plant	Airport	Aerial Monitoring Support (AMS)
BVPS	Pittsburgh International Airport 1000 Airport Blvd. Pittsburgh, PA Code: PIT	Pittsburgh International Airport 1000 Airport Blvd. Pittsburgh, PA Code: PIT
DBNPS	Eugene F. Krantz Toledo Express Airport 11013 Airport Hwy. Swanton, OH Code: TOL	Eugene F. Krantz Toledo Express Airport 11013 Airport Hwy. Swanton, OH Code: TOL
	<i>Alternate:</i>	
	Cleveland Hopkins International Airport 5300 Riverside Dr. Cleveland, OH Code: CLE	
PNPP	Cleveland Hopkins International Airport 5300 Riverside Dr. Cleveland, OH Code: CLE	Lake County Executive Airport 1969 Lost Nation Rd. Willoughby, OH Code: LNN
	<i>Alternate:</i>	<i>Alternate:</i>
	Youngstown-Warren Regional Airport 1453 Youngstown Kingsville Rd. Vienna, OH Code: YNG	Cuyahoga County Airport 26300 Curtiss Wright Pkwy. Cleveland, OH Code: CGF

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# III. Planning Standard D

## Emergency Classification System



A standard emergency classification and action level scheme, the bases of which include facility system and effluent parameters, is in use by the nuclear facility licensee, and State and local response plans call for reliance on information provided by facility licensees for determinations of minimum initial offsite response measures. [Regulatory References: 10 CFR 50.47(b)(4); 44 CFR 350.5(a)(4); 10 CFR Part 50, Appendix E, Sec. IV.B and C]

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### A. Response Basis

1. The standard ECL system forms the basis for determining the level of response to an incident that will be coordinated with the NPPs.
2. The current ECL scheme agreed upon between the State and the NPPs is:
  - a. Unusual Event
  - b. Alert
  - c. Site Area Emergency (SAE)
  - d. General Emergency (GE)
3. Each NPP will provide an annual review of the current ECL scheme and Emergency Action Levels (EALs) to the State.

### B. Unusual Event

1. Definition

An Unusual Event is an ECL indicating that events are in progress or have occurred which indicate a potential degradation of the level of safety of the plant or indicate a security threat to facility protection. No releases of radioactive material requiring offsite response or monitoring are expected unless further degradation of safety systems occurs.

2. Disclaimer

The following list is not meant to be all-inclusive.

3. Typical State Actions

#	State Actions at Unusual Event	Responsible Entity
1	Notify key response agencies.	Ohio EMA
2	Provide information to the public through JIC methodologies.	ESF-15/Ohio EMA
3	Maintain UNUSUAL EVENT status until termination of emergency or escalation of the ECL.	All Responding Agencies

**C. Alert**

1. Definition

An Alert is an ECL indicating that events are in progress or have occurred which involve an actual or potential substantial degradation of the level of safety of the plant or a security event that involves probable life-threatening risk to site personnel or damage to site equipment because of hostile action. Any releases are expected to be limited to small fractions of the EPA PAG exposure levels.

2. Disclaimer

Actions are unlikely to be performed in any one particular order. It will vary dependent upon personnel, event, and priorities. The following list is not meant to be all-inclusive. Dependent upon circumstances, some response activities may occur virtually.

3. Hostile Action-based (HAB)

The State Executives may choose to recommend some Site Area Emergency precautions during a HAB Alert.

4. Typical State Actions

#	State Actions at Alert	Responsible Entity
1	Activate Executives, Assessment, Dose Assessment, and JIC.	Ohio EMA
2	Partially activate the State EOC to include ESF-1 and ESF-9.	Ohio EMA
3	Consider activation of the Public Inquiry/Media Inquiry Hotlines.	Ohio EMA/ODH

#	State Actions at Alert	Responsible Entity
4	Notify key response agencies and state partner agencies.	Ohio EMA
5	Notify contiguous governments of Alert ECL. (DBNPS, PNPP only)	Ohio EMA
6	Notify Federal government agencies of Alert ECL.	Ohio EMA
7	Monitor plant data.	ESF-5/Dose Assessment
8	Establish communications with county(ies).	Executives
9	Dispatch representatives to the Columbiana, Lake, or Ottawa County EOC, Utility EOF, and Utility JIC.	Ohio EMA/ODH
10	Activate FMTs and dispatch to the staging area.	Ohio EMA/ODH
11	Activate Sample Screeners and dispatch to the staging area.	ODH
12	Clear Lake Erie within 10-mile EPZ. (DBNPS, PNPP only)	ESF-9/ODNR
13	Close navigable waterways within the 10-mile EPZ.	ESF-9/ODNR
14	Close ODNR properties within the 10-mile EPZ.	ESF-9/ODNR
15	Close Federal parklands within the 10-mile EPZ. (DBNPS only)	ESF-9/ODNR
16	Request FAA restrict air space within the 10-mile EPZ. (DBNPS, PNPP only)	ESF-1/ODOT
17	Inform Norfolk Southern (BVPS, DBNPS, PNPP) and CSX (PNPP only) of the Alert declaration for awareness only.	ESF-1/ODOT

#	State Actions at Alert	Responsible Entity
18	Inform DOE Region V RAP for situational awareness.	ESF-5/Radiological Assessment Branch Director
19	Provide information to the public through JIC methodologies.	ESF-15/Ohio EMA
20	Maintain ALERT status until termination of emergency or escalation of the ECL.	All Responding Agencies

## D. Site Area Emergency (SAE)

### 1. Definition

A Site Area Emergency is an ECL indicating that events are in progress or have occurred which involve an actual or likely major failure of plant functions needed for protection of the public or hostile action that results in intentional damage or malicious acts: 1) toward site personnel or equipment that could lead to the likely failure of; or 2) prevents effective access to equipment needed for the protection of the public. Any releases are not expected to result in exposure levels which exceed EPA PAG exposure levels beyond the site boundary.

### 2. Disclaimer

Actions are unlikely to be performed in any one particular order. It will vary dependent upon personnel, event, and priorities. The following list is not meant to be all-inclusive. Dependent upon circumstances, some response activities may occur virtually.

### 3. Hostile Action-based (HAB)

If a Site Area Emergency is a fast-breaker HAB event, the Executives will prioritize the Alert actions that still need to be performed. If an item does not make the priority list, it may not be performed.

### 4. Typical State Actions

#	State Actions at SAE	Responsible Entity
1	Fully activate and staff the State EOC.	Ohio EMA
2	Issue the 10-mile agricultural advisory.	Executives
3	If not yet activated, staff the Public Inquiry/Media Inquiry Hotlines.	Ohio EMA/ODH

#	State Actions at SAE	Responsible Entity
4	Notify key response agencies and state partner agencies.	Ohio EMA
5	Notify contiguous governments of SAE ECL. (DBNPS, PNPP only)	Ohio EMA
6	Notify Federal government agencies of SAE ECL.	Ohio EMA
7	Notify the 50-mile counties of SAE ECL.	Ohio EMA
8	Monitor plant data.	ESF-5/Dose Assessment
9	Request State of Emergency Declaration from Governor.	Executives
10	Dispatch FMTs to monitor the affected area.	Executives
11	Request Norfolk Southern (BVPS, DBNPS, PNPP) and CSX (PNPP only) restrict rail traffic from ENTERING the 10-mile EPZ.	ESF-1/ODOT
12	Request DOE mobilization of resources.	ESF-5/Radiological Assessment Branch Director
13	Recommend water intakes are closed within the 10-mile EPZ.	ESF-3/Ohio EPA
14	Provide information to the public through JIC methodologies.	ESF-15/Ohio EMA
15	Maintain SITE AREA EMERGENCY status until termination of emergency or escalation of the ECL.	All Responding Agencies

## E. General Emergency (GE)

### 1. Definition

A General Emergency is an ECL indicating that events are in progress or have occurred which involve actual or imminent substantial core degradation or melting with potential for loss of containment integrity or hostile action that results in an actual loss of physical control of the facility. Releases can be reasonably expected to exceed EPA PAG exposure levels offsite for more than the immediate site area.

### 2. Disclaimer

Actions are unlikely to be performed in any one particular order. It will vary dependent upon personnel, event, and priorities. The following list is not meant to be all-inclusive. Dependent upon circumstances, some response activities may occur virtually.

### 3. Hostile Action-based (HAB)

If a General Emergency is a fast-breaker HAB event, the Executives will prioritize the Alert and Site Area Emergency actions that still need to be performed. If an item does not make the priority list, it may not be performed.

### 4. Typical State Actions

#	State Actions at GE	Responsible Entity
1	Develop a GE Protective Action Recommendation (PAR). Typically, the PAR will be to evacuate two miles 360° and five miles downwind and the remainder of the EPZ to monitor EAS.  Note: The State of Ohio PAR is generally based on dose projections and utility conditions. The counties are expected to base their Protective Action Decisions (PAD) on the PAR while taking into consideration local conditions.	Dose Assessment Executives
2	Notify key response agencies and state partner agencies.	Ohio EMA
3	Notify contiguous governments of GE ECL. (DBNPS, PNPP only)	Ohio EMA
4	Notify Federal government agencies of GE ECL.	Ohio EMA
5	Notify the 50-mile counties of GE ECL.	Ohio EMA

#	State Actions at GE	Responsible Entity
6	Monitor plant data.	ESF-5/Dose Assessment
7	FMTs monitor and sample the affected area.	Executives
8	Request Norfolk Southern (BVPS, DBNPS, PNPP) and CSX (PNPP only) restrict rail traffic from ENTERING and EXITING the 10-mile EPZ.	ESF-1/ODOT
9	IZRRAG to begin discussions regarding potential activation.	ODH, Ohio EPA, ODNR, ODA, Ohio EMA
10	Provide information to the public through JIC methodologies.	ESF-15/Ohio EMA
11	Maintain GENERAL EMERGENCY status until termination of emergency or escalation of the ECL.	All Responding Agencies

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# IV. Planning Standard E

## Notification Methods & Procedures



Procedures have been established for notification, by the licensee, of State and local response organizations and for notification of emergency personnel by all organizations; the content of initial and follow up messages to response organizations and the public has been established; and means to provide early notification and clear instruction to the populace within the plume exposure pathway EPZ have been established. [Regulatory References: 10 CFR 50.47(b)(5); 44 CFR 350.5(a)(5)]

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### A. Initial/Follow-up Notifications

1. BVPS, DBNPS, and PNPP will notify the State of Ohio's 24-hour warning point within 15 minutes of declaring an emergency or an escalation of the ECL.
  - a. The Ohio EMA's Watch Office is the State's primary 24-hour warning point. OSHP's Dispatch is the backup 24-hour warning point. Both 24-hour warning points are housed at Ohio EMA, 2855 West Dublin-Granville Road, Columbus, OH.
  - b. Once the Formal Line Communicator is staffed in Dose Assessment, they will coordinate with the Watch Office or Dispatch and take over answering the NPP phone lines.
  - c. The notification process remains the same whether Ohio EMA's Watch Office, OSHP Dispatch, or the Formal Line Communicator are manning the phones.
  - d. The agreed upon notification process is aligned with the emergency classification and action level scheme as described in Chapter III. Planning Section D.
2. Notification from the NPPs will be made using dedicated phone lines.
  - a. Backup communications include the Watch's main phone line, MARCS radio, satellite phone, and email.
  - b. If the call is received through the dedicated phone lines, no verification of the message is needed. If the call is received through other means, the Watch Office or Dispatch will notify the Radiological Branch Chief who will contact the NPP's Control Room to verify the legitimacy of the message.
3. When a notification is received from an entity other than the NPP, the Watch Office or Dispatch will notify the Radiological Branch Chief who will contact the NPP's Control Room or the caller (if a County EMA Director) to verify the legitimacy of message.
4. Notification Forms
  - a. The initial notification forms from the NPPs include the ECL declared, if there is a release occurring, and recommended protective measures for any populations or areas that may be potentially affected.

- b. Follow-up notifications provide periodic updates for the status of the current emergency classification. If a release is in progress, follow-up notifications will include dose assessment runs from the NPP.
- c. The current revision of the NPPs' notification forms is available at Ohio EMA for review upon request:
  - i. BVPS Initial Notification Form – NOP-LP-5503-01
  - ii. BVPS Follow-up Notification Form – NOP-LP-5503-02
  - iii. DBNPS Initial Notification Form – NOP-LP-5503-04
  - iv. DBNPS Follow-up Notification Form – NOP-LP-5503-05
  - v. PNPP Initial Notification Form – NOP-LP-5503-07
  - vi. PNPP Follow-up Notification Form – NOP-LP-5503-08

## **B. Notification Dissemination Process**

1. The Watch Chief or Information and Planning Section Chief is responsible for disseminating notifications. A Public Safety Intelligence Analyst may perform this duty, if requested.  
 Note: For notifications made based on ECL declaration, refer to Attachment IV-A.  
 Note: For the general flow of emergency notifications, refer to Attachment IV-B.
2. If the State EOC is not activated, subsequent notifications are disseminated through a combination of eNotify notifications and commercial telephone calls to Ohio EMA executives.
3. If the State EOC is at least partially activated with the Executives, Dose Assessment, Assessment, and the JIC, subsequent notifications are disseminated through the use of briefings, runners with hard copies, WebEOC Incident Documentation board, and/or MS Teams channels' files.
4. eNotification
  - a. eNotify notifications may be used to send any message including ones simply for situational awareness or ones specifying an action to take (e.g., staff the State EOC).
  - b. The eNotify website contains the “groups” which include the list of names of personnel that will be notified when a notification goes out to that specific group. The eNotify site also maintains the contact information of the personnel who will be alerted. Contact information allows for the entry of phone numbers, emails, and a phone number for any device that can accept a text message.
  - c. At every ECL, an eNotify is issued to key State partner agencies, including the Ohio EMA Radiological Branch, ODH, ODOT, ODNR, and ODA. For eNotifications at each ECL, refer to Attachment V-A. Individual agencies are responsible for notification of their response personnel.
  - d. At an Alert ECL and higher, an eNotify is issued to:
    - i. Contiguous governments (e.g., Michigan, Pennsylvania, Province of Ontario) for their awareness.

- ii. Specific regions of the NRC and FEMA, based on the affected NPP.
- iii. The State’s partner agencies, including key personnel from every State or private organization that could respond to the emergency.
- e. At SAE and GE, an email and an eNotify are issued to the NPP’s 50-mile counties. The email contains an attachment with key information including ECL, meteorological data, protective actions, if a release has started or been stopped, and both 10- and 50-mile EPZ maps.
- f. HAB Notifications
  - i. If an ECL is based on a hostile action EAL, a notification is sent to law enforcement agencies who have opted to receive an eNotify that the ECL declared by the NPP is due to a hostile action.
  - ii. If a HAB ECL escalates to an ECL that is based on a non-hostile EAL, a follow-up eNotify is sent to the law enforcement agencies to inform them the situation is no longer hostile based.

**C. Response Personnel Notifications**

The individual(s) in the primary agencies who are responsible for notifying emergency response personnel within their organization are:

<b>Agency</b>	<b>Responsible Position</b>
ODA	Chief, Division of Food Safety/Assistant Chief, Division of Food Safety
ODH	Radiological On-Call Supervisor/Assistant Radiological On-Call Supervisor
ODNR	ODNR Dispatchers, Office of Law Enforcement Staff (Major/Captains)
ODOT	ESF-1 Coordinator
Ohio EMA	Watch Chief/Public Safety Intelligence Analyst
Ohio EPA	Radiological Safety Program Lead
OHNG	Officer in Charge, Joint Operations Center
OSHP	Dispatchers/Communications Specialists
PUCO	Field Service Manager, Service Monitoring & Enforcement Division

**D. Lake Erie Alert and Notification**

- 1. ODNR provides the alert and notification of boaters on Lake Erie, beginning at an Alert, with the goal of clearing the Lake prior to a General Emergency and the potential of a release from either DBNPS or PNPP.

2. The Executives at the State EOC, coordinating with the counties, will approve for ODNR to clear recreational boaters from Lake Erie. ESF-9 will contact the Division Law Administrators to activate Lake clearing activities.
3. It will take approximately one to two hours to activate and mobilize responders prior to deployment to the affected area. Once responders reach the designated area, they will be broadcasting the boater advisory over the public announcement system when they approach boat traffic.
4. ODNR will utilize its available boats to follow search patterns developed by the USCG to reach the maximum number of boaters. Completion of the search patterns will take approximately three to four hours under good weather conditions.
5. Vessels are equipped with a law enforcement light package and a RayMarine siren that also has public address and audible navigation sound signal capabilities. Vessels are also equipped with two marine band Very High Frequency (VHF) radios, MARCS 800 MHz radios, and portable handheld radios. Each vessel is also equipped with a loud-hailer system for communicating with boats that may not have a marine band radio.
6. Messages directed to marine traffic are broadcast on channel 16 on the VHF marine band using the 5-watt radios onboard the ODNR vessels. The USCG assists by broadcasting the same messages from a more powerful marine band transmitter at the USCG Sector Detroit facility for incidents at DBNPS and USCG Sector Buffalo for incidents at PNPP.
  - a. The marine band VHF radio is a worldwide system of two-way radio transceivers on watercraft used for bidirectional voice communication from ship-to-ship, ship-to-shore, and in certain circumstances, ship-to-aircraft.
  - b. Channel 16 is the international calling and distress channel.
  - c. Transmitter power is limited to 25 watts, giving marine band radios a range of about 60 miles.
7. ODNR will repeat the boater advisories as they come across boat traffic. The USCG will repeat the boater advisories on a frequency based upon the ECL.

## **E. Follow-up Public Information**

1. News Release Information
  - a. News releases will be developed, as needed.
  - b. State news releases may include the following information:
    - i. ODNR clearing of navigable waterways within the 10-mile EPZ
    - ii. ODNR closure of state properties (e.g., parks, forests, boat ramps) within the 10-mile EPZ
    - iii. Issuance of the agricultural advisory for the 10-mile EPZ
    - iv. FAA restriction of airspace in the 10-mile EPZ
    - v. Railroad traffic restrictions for the 10-mile EPZ

- vi. Protective actions for the general public as listed in the county(ies) PAD (Note: sub-areas and evacuation routes are described in detail in county(ies) news releases)
- vii. Public inquiry phone number
- viii. Social media accounts on Facebook, Twitter and related hashtags
- ix. Ohio EMA's website address
- x. Advisories for the 50-mile EPZ (e.g., agricultural, drinking water, hunting/fishing)
- xi. Other intermediate and late phase information, as necessary

2. News Release Process

- a. The JIC activation news release, once approved, will be released directly to the State's media contacts.
- b. News releases will be provided to the Assistant EOC Director for review, edit and/or approval.
- c. Once a news release is approved, the State EOC will send it to the Utility JIC PIO who, in turn, will provide the release to the utility's Information Manager.

Note: Titles vary at the different plants.

- d. The Utility JIC PIO will discuss the contents of the news release during the next press briefing at the Utility JIC.
- e. Social media staff at the State JIC will post key points from the news release on the State's social media platforms.

3. Rumors/Trends

a. Public/Media Inquiry

- i. Once activated, public inquiry or media inquiry will answer the designated phone lines. They will enter any questions received and the answers provided into WebEOC.
  - 1) The State JIC Manager maintains a watch on the inquiry board.
  - 2) If a topic is shown three or more times, it is considered a trend and is brought to the attention of the State JIC Manager.
  - 3) The State JIC Manager contacts the Utility JIC PIO, who asks the representatives at the Utility JIC if they are aware of the information and whether or not it is a rumor or fact.
  - 4) If the representatives have an answer, the Utility JIC PIO contacts the State JIC Manager to inform them of the facts. If the representatives do not have an answer, the Utility JIC PIO informs the State JIC Manager. The State JIC Manager then researches the trend at the State EOC until an answer is determined.
  - 5) Whether fact or rumor, the information is returned to the public inquiry, media inquiry, and social media staff for their situational awareness and in case more calls or posts are received on the topic.

- a) If it is found to be a rumor, the social media staff will post factual information to the State's social media platforms.
    - b) If a trend continues, it may be necessary to address it with a news release specific to the topic.
  - b. Social Media Trends
    - i. The Social Media Manager will maintain a watch on trending social media online.
    - ii. If a topic arises three or more times, it is considered a trend and will be brought to the attention of the State PIO.
    - iii. The process will be identical to a public or media inquiry trend with the information being relayed to the public inquiry, media inquiry, and social media staff for their situational awareness.
      - 1) If it is found to be a rumor, the social media staff will post factual information to the State's social media platforms.
      - 2) If a trend continues, it may be necessary to address it with a news release specific to the topic.
4. Supplemental Public Information
- a. Supplemental messaging may be used to provide a status update, such as Lake Erie has been cleared of boating traffic, or reiterating critical instructions from previous messages, such as animals within the 10-mile EPZ should remain on stored feed and water. Supplemental messaging may issue a statement from the Governor or Ohio EMA Director. An infinite number of topics which may be issued through supplemental messaging. For example, weather hampers responders, Governor flies over the affected area, or ANI provide funds for evacuees.
  - b. The process to approve and disseminate supplemental public information will be the same process as the dissemination of a news release.

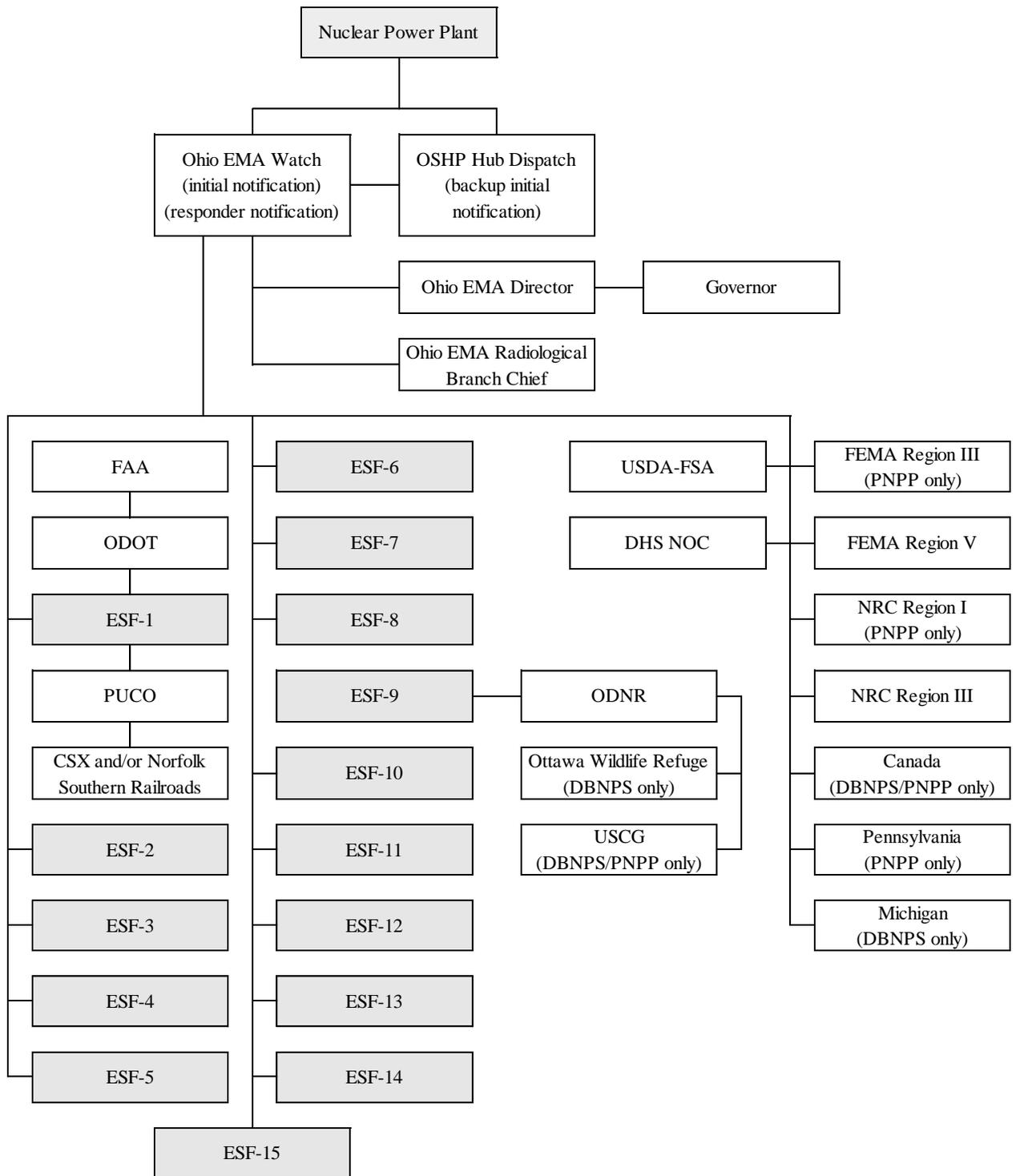
Note: Refer to steps under IV.C.4.

## Attachment IV-A: Emergency Notification by ECL

Responding Agency	Emergency Phase				Intermediate Phase
	Unusual Event <sup>1</sup>	Alert <sup>2</sup>	SAE <sup>3</sup>	GE	IZRRAG
Ohio EMA	N <sup>4</sup>	P <sup>5</sup>	F <sup>6</sup>	N	I <sup>7</sup>
Office of the Governor	8	8	8	8	
DPS		P	N	N	
FEMA V	N <sup>9</sup>	N <sup>10</sup>	N <sup>10</sup>	N <sup>10</sup>	
NRC III	N <sup>9</sup>	N <sup>10</sup>	N <sup>10</sup>	N <sup>10</sup>	
ODA		N	F	N	I
ODH	N	P	F	N	I
ODNR	N <sup>9</sup>	P	F	N	I
ODOT	N	P	F	N	
Ohio EPA	N	P	F	N	I
OHNG	N <sup>9</sup>	N <sup>10</sup>	F <sup>10</sup>	N <sup>10</sup>	
OSHP	N <sup>9</sup>	N <sup>10</sup>	F <sup>10</sup>	N <sup>10</sup>	
OSU-Ext	N	N	F	N	I
PUCO		N	F	N	
USCG	N <sup>9</sup>	N <sup>9</sup>	N <sup>9</sup>	N <sup>9</sup>	
USDA-FSA	N	N	N	N	I
Other ESF partners		N <sup>11</sup>	F	N	

- 1 The State EOC may be partially or fully activated at any ECL if there are extenuating circumstances.
- 2 At Alert, the State EOC typically partially activates. The Executive Room, JIC, Assessment Room, Dose Assessment Room, ESF-1 and ESF-9 will be staffed.
- 3 Ohio EMA will fully activate the State EOC no later than SAE.
- 4 N - Designated agency personnel receive an eNotify notification.
- 5 P - These agencies are notified and ask to Partially staff the State EOC.
- 6 F - These agencies are notified and ask to Fully staff the State EOC.
- 7 I - Key agencies are notified near the end of the Emergency Phase and asked to staff the IZRRAG room.
- 8 The Ohio EMA Director will inform the Governor's Office.
- 9 Agency will receive an eNotify for HAB events.
- 10 Agency will receive eNotifies for both HAB and non-HAB events.
- 11 All ESF partners are notified of any State EOC activation. If notification is for a partial activation of the State EOC, it will also notify partners that they may staff their desk at the State EOC if they have mission assignments to address.

# Attachment IV-B: Emergency Notification Flow



# V. Planning Standard F

## Emergency Communications



Provisions exist for prompt communications among principal response organizations to emergency personnel and to the public. [Regulatory References: 10 CFR 50.47(b)(6); 44 CFR 350.5(a)(6)]

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### A. Primary/Backup Communications

1. Nuclear Power Plants
  - a. The State EOC has two 24-hour warning points, Ohio EMA's Watch Office and OSHP's Dispatch Center. They are available to accept event information received from the nuclear power plants over the phone lines reserved specifically for each individual plant.
  - b. Commercial telephones, MARCS radios, fax, email, and cell phones are available as alternate means of communications.
  - c. OSHP also has access to the LEADS which provides manually entered information electronically to selected agencies or OSHP posts.
  - d. Alternate contacts at the State EOC are the Watch Chief/Information and Planning Section Chief or the Radiological Assessment Branch Director.
  - e. Alternate contacts at the NPPs include the Control Room's Shift Manager, the Technical Support Center's Emergency Coordinator, and the EOF's Emergency Director. The contact changes based on which location has taken responsibility for communications.
2. Contiguous/Federal/Local/State Agencies
  - a. Communications to contiguous, federal, state, and local government agencies are accomplished through commercial telephones, cell phones, eNotify internet system, or MARCS radios.
  - b. Alternate contacts at the State EOC are the Watch Chief/Information and Planning Section Chief or the Radiological Assessment Branch Director.
  - c. Alternate state agency contacts will be personnel with emergency response duties or agency Directors.
  - d. Alternate contacts at county EOCs will be the County EMA Directors.
  - e. Alternate contacts for Federal agencies will be the state or regional liaisons or the 24-hour duty staff.
  - f. Alternate contacts at contiguous governments are personnel with emergency response duties or the 24-hour duty staff.

3. FMTs, Sample Screeners, and Sample Teams
  - a. Communication to FMTs, Sample Screeners, and Sample Teams is accomplished through MARCS radios, commercial telephones, cell phones, or other cellular equipped devices.
  - b. Alternate contacts at the State EOC are the FMT Communicator, Sample Screener Lead, or the Radiological Assessment Branch Director.
  - c. The alternate contacts in the field are the FMT Coordinator, Sample Screener Team Lead, or Field Team Center Coordinator.
4. Responder Notification
  - a. Notification of responders is traditionally performed through the eNotify internet system which utilizes commercial telephones, email, and cell phones.
  - b. The alternate contact at the State EOC is the Watch Chief/Information and Planning Section Chief.
  - c. The alternate contact for a responder would be their supervisor.
5. Utility EOF
  - a. Communication with the utility EOF is accomplished through commercial telephones, MS Teams, fax, or email.
  - b. Cell phones and MARCS radios are available as backup communication systems.
  - c. The alternate contacts at the State EOC are the Radiological Assessment Branch Director or Dose Assessment Unit Leader.
  - d. Alternate contacts at the Utility EOF are the Ohio EMA EOF Liaison and the ODH EOF Liaison.
6. Utility JIC
  - a. Communication with the utility JIC is accomplished through commercial telephones, MS Teams, fax, and email.
  - b. Cell phones and MARCS radios are available as backup communication systems.
  - c. Alternate contacts at the State EOC are the State JIC Manager or the State JIC PIO.
  - d. The alternate contact at the Utility JIC is the Utility JIC PIO.
7. ODNR/USCG
  - a. In the event waterway clearing operations are in progress, each responding agency will utilize departmental radio networks to establish and maintain communications between their headquarters and on-scene coordinators. At times, it may be necessary for an agency to use another's radio net in order to coordinate actions and response. This action is intended to be kept at a minimum.
  - b. The Search-and-Rescue (SAR) Mission Commander utilizes USCG frequencies to communicate with:
    - i. Headquarters, Ninth District
    - ii. Sector Detroit

- iii. Sector Buffalo
- iv. USCG helicopter air crew
- v. USCG responding vessels and crew
- c. The ODNR Division of Parks and Watercraft Supervisor utilizes departmental radio frequencies to communicate with:
  - i. Division of Parks and Watercraft responders
  - ii. Division of Wildlife responders
- d. Upon a change in the emergency classification level at the nuclear power facility, responders will be notified of this change through MARCS, telephone, or back-up communications and advised of actions to be taken, if any.
  - i. ESF-9 will notify the ODNR offices nearest the plant of the situation and coordinate with the Division of Watercraft Law Administrator or Parks and Watercraft Captain.
  - ii. Agency regional offices will notify their on-scene coordinator, who will relay the message by radio to all responders.

## **B. Testing Frequencies**

### 1. eNotify System

eNotify is used intermittently. It is tested, at a minimum, multiple times annually during each dry run and biennial exercise.

### 2. Fax Machines

- a. The fax in Dose Assessment is tested monthly with the NPP phone tests.
- b. The State EOC JIC fax is tested quarterly for both incoming and outgoing capabilities.
- c. The fax machines in both the Watch Office and OSHP's Dispatch are used regularly and therefore, are not on a testing schedule.

### 3. MARCS Radios

- a. The radiological MARCS radio channels are tested on different intervals per plant.
  - i. BVPS tests the NUC-BV channel quarterly.
  - ii. DBNPS tests the NUC-DB channel monthly.
  - iii. PNPP tests the NUC-PERRY channel quarterly.
- b. The EMA-Rad channel is tested, at a minimum, twice a year. EMA-Rad is primarily used for FMTs, Sample Screeners, and Sample Teams.
- c. Both the USCG and ODNR use their radio frequencies regularly and are not on a testing schedule.

### 4. MS Teams

- a. MS Teams is utilized regularly and is not on a testing schedule.

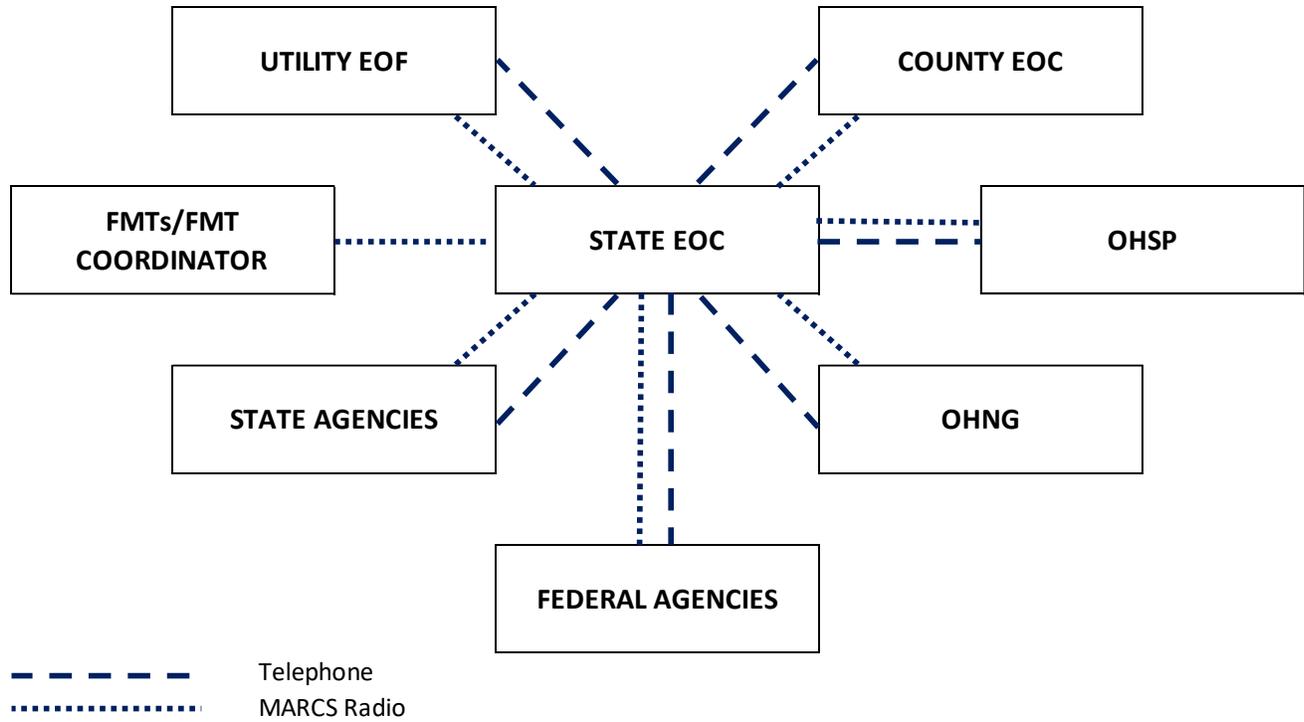
- b. Integrated drills are regularly participated in using the DPS BVPS, DPS DBNPS, or DPS PNPP Teams and their respective channels.
- 5. Telephones
  - a. The Initial Notification phones for BVPS, DBNPS, and PNPP are each tested monthly.
  - b. The commercial telephones are utilized regularly, therefore they are not on a testing schedule.
- 6. Telephone Contacts
  - a. The following Federal agencies are phoned quarterly:
    - i. DOE/NNSA Headquarters
    - ii. DOE/NNSA RAP Team Region V
    - iii. FEMA Region 3
    - iv. FEMA Region 5
  - b. The following contiguous governments are phoned quarterly:
    - i. Commonwealth of Pennsylvania
    - ii. Michigan
    - iii. Province of Ontario
  - c. The quarterly testing of the above contacts includes a content check.

## **C. Equipment**

- 1. Mobile Communications
  - a. Mobile communication assets may be dispatched to the affected NPP area, providing redundancy to the existing MARCS radio links between the State EOC, county EOCs and the utility EOF.
  - b. It also has the capability of establishing and maintaining emergency communication links with response/support agencies via MARCS radio systems, and serves as a secondary radio link with FMTs.
  - c. Assets may include:
    - i. Radio cache (800 MHz)
    - ii. Portable radio tower
    - iii. AT&T FirstNet Compact Rapid Deployable (CRD)

2. MARCS talk groups can be assigned as needed. The following MARCS talk groups are permanently maintained and available in the event of a radiological emergency.
  - a. EMA-Rad
  - b. NUC-BV
  - c. NUC-DB
  - d. NUC-PERRY

# Attachment V-A: Primary & Secondary Communication Links



# VI. Planning Standard G

## Public Education & Information



Information is made available to the public on a periodic basis on how they will be notified and what their initial actions should be in an emergency (e.g., listening to a local broadcast station and remaining indoors), the principal points of contact with the news media for dissemination of information during an emergency (including the physical location or locations) are established in advance, and procedures for coordinated dissemination of information to the public are established. [Regulatory References: 10 CFR 50.47(b)(7); 44 CFR 350.5 (a)(7)]

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### A. Public Information

#### 1. Emergency Phase

- a. An Emergency Public Information (EPI) brochure is mailed to the 10-mile EPZ population annually by each plant. The EPI may include:
  - i. Clear, concise, “plain language”
  - ii. A statement of purpose for receiving the information
  - iii. The year the document is issued and the issuing agency(ies)
  - iv. A statement instructing recipients to maintain the information for future use
  - v. A statement emphasizing that recipients should monitor information channels for updates
  - vi. A point of contact for additional information
  - vii. Basic information on radiation
  - viii. Detailed information on how the public located in the 10-mile EPZ will be notified
  - ix. Information on protective actions for those located both inside and outside their residence when a protective action is ordered
  - x. A 10-mile EPZ map clearly highlighting evacuation routes, reception center locations, and centers used for public services during an emergency
  - xi. Provisions and information for individuals with access and functional needs
  - xii. Information on centers used for public services during an emergency
  - xiii. Policies and provisions for service animals and pets
  - xiv. Agricultural information including information or instructions regarding protection of livestock and commercial agricultural or home garden/livestock products
- b. The public information targeted to the transient population is addressed in the county plans.

## 2. Ingestion Phase

- a. The Ohio Department of Agriculture annually publishes the Radiological Emergency Information for Food Producers, Processors, and Distributors. The brochure is also available at <https://agri.ohio.gov/divisions/food-safety/resources/Emergency-Preparedness>.
- b. The “Ag Brochure” is mailed to the 10-mile EPZ agricultural community annually.
- c. The “Ag Brochure” can be disseminated to the 50-mile EPZ population should the NPP declare an SAE or GE. OSU-Extension will assist in distribution of the brochure to the agricultural community.
- d. Information covered in the “Ag Brochure” includes, but is not limited to, topics such as:
  - i. The effects of radiation and radioactive material deposits on the human food supply
  - ii. An explanation of ingestion PAGs
  - iii. How farmers, human food processors, and distributors will be notified of when and which protective actions are taken in an emergency
  - iv. Identification of possible preventive protective actions taken for foodstuffs and water, including livestock, poultry, fruits, vegetables, milk, fish, honey, and grains
  - v. Proper soil management

## **B. Joint Information Center**

### 1. State JIC

- a. The State of Ohio maintains a JIC at the State EOC.
- b. The State JIC is responsible for creating the State’s news releases and after approval, sending them to the Utility JIC PIO stationed at the Utility JIC.
- c. At this time, the State of Ohio does not maintain a separate media facility.

### 2. Utility JIC

- a. The initial Utility JIC PIO for the State will be PIOs from either ODH or Ohio EMA. As the emergency progresses, other agencies’ communications departments will receive requests for assistance.
- b. The Utility JIC PIO addresses the media for the State of Ohio at the Utility JIC.

Note: The Utility JIC PIO will speak for Columbiana County during BVPS incidents.

Note: For a list of the Utility JIC locations operated by the NPPs, refer to Attachment VI-A.
- c. Contact with the Utility JIC is made using a phone directory provided by the NPPs which includes both commercial phone lines and faxes. Cell phones may also be used.
- d. The Utility JIC PIO will coordinate the exchange of information through the State JIC Manager or State JIC PIO.

3. Information Control and Release Procedures
  - a. News releases will be developed, as needed.
  - b. The Assistant EOC Director or their designee reviews, edits, and approves all news releases prior to their release. Only versions of releases that have been physically (or virtually, if necessary) signed by the approver will be released to the utility and/or media.
  - c. Approved news releases are sent to the Utility JIC PIO from the State JIC.
  - d. HAB Events
    - i. Approved news releases are reviewed by a law enforcement officer as they are being written during a HAB event.
    - ii. The news release templates are designed to avoid the release of sensitive information such as NPP security capabilities, actual or perceived threats, tactical law enforcement response, and/or crime scene investigation.
4. Exchange of Information
  - a. The State JIC Manager and Utility JIC PIO are in frequent contact with each other by phone, fax, or email.
  - b. MS Teams can also be used to exchange and coordinate information between the sites.
  - c. The Utility JIC will participate in a pre-briefing prior to each news briefing to bring all PIOs together to exchange and coordinate the information they plan to provide to the media and public.
5. Media Inquiry
  - a. When the news release is sent out notifying the media that the State JIC has been activated, the dedicated phone number is included and unforwarded at the State EOC.
  - b. Media Inquiry staff are provided a binder and matching Excel workbook with answers to a multitude of questions in varying radiological emergency topics including KI, pets, health, and school children. In addition, the binder includes various maps, the agricultural brochure, and key portions of each plant's emergency public information brochure.
  - c. Initial phone calls will be answered by one of the PIOs staffing the State JIC. Whoever answers the phone will ensure the State JIC PIO and the JIC Manager remain informed. The JIC Manager or the State JIC PIO will keep the Utility JIC PIO informed of the various calls.
  - d. Questions and answers will be logged into WebEOC.
  - e. If the incident escalates and the call volume becomes unmanageable, additional staff may be brought in to assist.
  - f. If Media Inquiry relocates to expand its capabilities, a supervisor or point of contact will be established to allow streamlined communications with the State JIC.
6. Public Inquiry
  - a. The Executives will give approval to staff Public Inquiry.

- b. When Public Inquiry is staffed and ready to take calls, the dedicated phone line is added to all news releases and unforwarded at the State EOC.
- c. The dedicated phone line is also provided on Facebook and Twitter posts.
- d. If the incident escalates and the call volume becomes unmanageable, Public Inquiry may relocate to expand its capabilities. A supervisor or point of contact will be established to allow streamlined communications with the State JIC.
- e. Public Inquiry staff are provided a binder and matching Excel workbook with answers to a multitude of questions in varying radiological emergency topics including KI, pets, health, and school children. In addition, the binder includes various maps, the agricultural brochure, and key portions of each plant's emergency public information brochure.
- f. Public Inquiry staff are responsible for monitoring the topics of incoming calls. If there is a trend in the calls (defined as three or more calls with the same topic), they are to notify the State JIC PIO or JIC Manager.
- g. All questions and answers will be logged into WebEOC.

#### 7. Social Media

- a. Ohio EMA maintains a Twitter and Facebook account for public messaging and feedback. The Twitter tags that will be utilized are #ohioema, #beavervalley nuclear, #davisbessenuclear, and #perrynuclear.
- b. The Social Media Manager (SMM) is responsible for maintaining a social presence regarding the emergency, retweeting messages from partner agencies, and keeping the public updated.
- c. The SMM is responsible for monitoring the topics of internet posts. If there is a trend (defined as three or more posts with the same topic), the SMM is to notify the State JIC PIO or the JIC Manager.
- d. The SMM will be staffed by a State PIO.

#### 8. Media Monitoring

- a. The SMM will monitor a variety of media to identify incomplete, inaccurate, or vague information being disseminated in to the public domain.
- b. The State JIC has multiple televisions that can be turned to local or cable channels. The SMM can also go to individual websites to review their news online.
- c. The SMM will be responsible for monitoring the topics of internet posts. The SMM will notify the State JIC PIO or the JIC Manager if:
  - i. A trend (defined as three or more stories with the same topic) is observed.
  - ii. Incomplete, inaccurate, or ambiguous information related to the emergency is found.

9. State JIC PIO/State JIC Manager

- a. If incomplete, inaccurate, or ambiguous information is reported, the State JIC PIO, in coordination with the State JIC Manager, will determine if the clarifying and/or corrected information warrants a new or updated press release, can be mentioned in the next press release, and/or should be discussed during the next media briefing by the Utility JIC PIO. The State JIC Manager should share the information with the Utility JIC PIO.
- b. If a trend is reported, the State JIC PIO, in coordination with the State JIC Manager, will determine if there is clarifying and/or corrected information that warrants a new or updated press release, can be mentioned in the next press release, and/or should be discussed during the next media briefing by the Utility JIC PIO. The State JIC Manager should share the information with the Utility JIC PIO.
- c. If a rumor is reported, the State JIC Manager will notify the Utility JIC PIO.
  - i. The Utility JIC PIO will ask the PIOs at the Utility JIC if they are aware if the report is true or false. If an answer is found, it will be shared with the State JIC Manager.
  - ii. If the Utility JIC is unaware of the information, the Utility JIC PIO will present the information to the State JIC Manager requesting assistance.
  - iii. The State JIC Manager will then try to determine the truth through the State EOC. If an answer is found, it will be shared with the Utility JIC PIO.
  - iv. Once the truth of the rumor is found, the State JIC PIO, in coordination with the State JIC Manager, will determine if there is clarifying and/or corrected information that warrants a new or updated press release, can be mentioned in the next press release, and/or should be discussed during the next media briefing by the Utility JIC PIO. The State JIC Manager should share the information with the Utility JIC PIO.
- d. The State JIC PIO or State JIC Manager will brief the State JIC and Public Inquiry staff when there is any newly clarifying and/or corrected information. If Public Inquiry has relocated to expand its capabilities, the State JIC PIO will notify the Public Inquiry's supervisor or point of contact.

## Attachment VI-A: Utility JIC Locations

<b>Plant</b>	<b>JIC Address</b>
BVPS	Pittsburgh Airport Business Park 181 Spring Run Road Extension, Building 3 Coraopolis, PA 15108
DBNPS	Edison Plaza 300 Madison Avenue, 8 <sup>th</sup> Floor Toledo, OH 43604
PNPP	Auburn Career Center 8140 Auburn Road Painesville, OH 44077

# VII.Planning Standard H

## Emergency Facilities & Equipment



Adequate emergency facilities and equipment to support the emergency response are provided and maintained. [Regulatory References: 10 CFR 50.47(b)(8); 44 CFR 350.5(a)(8)]

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### A. State EOC

1. The State EOC is located on the lower level of the Ohio EMA building at 2855 West Dublin-Granville Road, Columbus, OH. As the State EOC is more than 10 miles away from the NPPs, an alternate EOC is not necessary.

Note: For a State EOC layout, refer to Appendix D.

2. The Ohio EMA EOC Manager is responsible for maintaining the operational readiness of the State EOC.

3. Building Access

- a. The building's outer doors are locked during standard non-working hours.
- b. Proper credentials or an access badge are required to gain entry to the building.
- c. OSHP is responsible for staffing the locked interior front doors and verifying credentials.
- d. The State EOC's doors require an access badge or a State EOC badge obtained from the State EOC's Help Desk. A standard visitor's badge will not open the State EOC's doors.

4. Equipment Available

- a. Tables
- b. Desks
- c. Chairs
- d. Combination fax, copier, scanner, printer machines
- e. Commercial and satellite phones
- f. MARCS radios
- g. Televisions
- h. Projectors
- i. Computers
- j. Microphones
- k. Headsets

- l. White boards
- m. Administrative supplies
- n. 1000 kW Onan-Cummins backup generator (with two weeks' supply of fuel)

## **B. Equipment**

1. The State of Ohio does not maintain fixed monitoring stations near the NPPs.
2. The Ohio EMA RIM&C Laboratory is responsible for maintenance and testing of all dosimetry, survey instruments, and air samplers. This includes inventory, inspection, calibration, and operational checks.
3. The Ohio EMA RIM&C Laboratory calibrates the equipment it is responsible for annually.
4. The State stores no radiological monitoring equipment near the NPP sites, nor does it take any monitoring equipment to the NPP sites.
5. Quantities and Backup Equipment
  - a. The FMT kit inventories can be found in Ohio EMA 658 FMT SOP, Attachment 4.
    - i. There is a total of four (4) FMT kits.
    - ii. Two (2) kits are used by the FMTs, the remaining two (2) kits are used as backup equipment.
    - iii. The kits are stored at the Ohio EMA RIM&C Laboratory.
    - iv. The spare FMT kits are taken by the FMT Courier to the FMT staging area.
    - v. The Ohio EMA 658 FMT SOP identifies the source of power for the air samplers in the kits.
  - b. The dosimetry used in the field are the CD V-730 (0-20R) and CD V-742 (0-200R).
    - i. A set of dosimeters are maintained in a dosimeter pack which also includes a Mirion PRD.
    - ii. A total of 35 kits are available at the Ohio EMA RIM&C Laboratory with enough equipment to build 200 kits.
    - iii. A total of five (5) are needed during a shift, leaving 30 kits to use for backup.
    - iv. A box of dosimeter packs is taken by the FMT Courier to the FMT staging area.
    - v. If the remaining spare dosimeter packs, stored at the Ohio EMA RIM&C Laboratory, were needed, it would take approximately 2.5 – 3.0 hours for a courier to take them from Columbus to the FMT staging area.
  - c. ODH-BEHRP maintains a Handheld Radiation Isotope Identifier.
  - d. The ODH-Lab maintains:
    - i. One (1) Perkin Elmer Tri-Carb Liquid Scintillation Analyzer
    - ii. One (1) Protean Alpha/Beta WPC 9550
    - iii. Six (6) Protean Alpha/Beta MPC 9602-24

iv. Four (4) Canberra Gamma Spectroscopy System HPGe

Note: Backup laboratory equipment is not borrowed from other laboratories.

6. Maintenance, Calibration, and Operational Checks

a. Direct Reading Dosimeters (DRDs)

- i. The DRD packets include instructions on checking DRDs before each use. Emergency workers check dosimeters for initial readings and re-zero them, if necessary.
- ii. DRDs are calibrated annually.
  - 1) DRDs are zeroed and heated for five days to detect drift off of zero within  $\pm 10\%$ .
  - 2) The DRDs are re-zeroed and irradiated for an amount of time for the DRDs to read mid-scale  $\pm 10\%$ .
  - 3) This calibration is documented by replacing the calibration labels. Calibration certifications are not generated.

b. PRDs

- i. PRDs, either a Thermoluminescent Dosimeter (TLD) or an Optically Stimulated Luminescent Dosimeter (OSLD), are to be turned in to the Dosimetry Coordinator when one is no longer considered an emergency worker or when requested.
- ii. Control badges are kept with the emergency worker PRDs in a low background area in the Radiological Branch office. Control badges travel with the emergency worker PRDs to the staging area during an emergency.
- iii. PRDs are replaced annually.

c. Radiological Survey Instruments

- i. Instruments used to measure activity have a range of reading sticker affixed to the instrument indicating the effective range of readings.
- ii. The survey instruments are not regularly used, but are checked quarterly and before each use.
- iii. Ohio EMA 658 FMT Member SOP has instructions on how to operationally check the survey instruments.
- iv. Survey instruments are tested against a known source to ensure they are within their range of readings.
- v. Batteries are not kept in the survey instruments, eliminating the need for battery checks.
- vi. Survey instruments are calibrated annually.
  - 1) Survey meters are calibrated on each channel using a pulser and live radiation.
  - 2) Each calibration is documented by the technician.

- d. Air Sampling Equipment
    - i. Air samplers are not regularly used, but are checked quarterly and before each use.
    - ii. Air sampling equipment is calibrated annually.
      - 1) Each is calibrated by using a large DC power supply and varying the voltage powering the air sampled.
      - 2) Air flow rate is measured with an outside calibrated air flow meter with a cartridge and filter paper installed inline. Parameters are entered into the air sampler where it sets a calibrated air flow range that it operates within. The screen flashes if the air flow is outside of the determined flow limits.
      - 3) Each calibration is documented by the technician.
7. For Emergency Kits, refer to Attachment VII-B.

## C. Radiological Data

- 1. Emergency Phase
  - a. ODH is responsible for assessing radiological data and analyzing FMT data at the State EOC.
  - b. The State will use Unified Rascal Interface (URI) software provided by the utility to analyze radiological data and FMT data.
  - c. The data is relayed from the FMTs to the FMT Coordinator who in turn will relay the data to the FMT Communicator who is co-located with Dose Assessment.
  - d. ESF-1 will coordinate the transport of air filter and cartridge samples from the Sample Screeners to the ODH-Lab.
  - e. ODH-Lab will receive the samples taken in the field and analyze them.
  - f. ODH-Lab Sample Analysis Procedures
    - i. RAD 2 – Identification of Gamma-Ray Emitting Radionuclides Using High-Purity Germanium Detector
    - ii. RAD 3 – Gross Alpha and Beta (Filter Paper/Smears/Wipes)
    - iii. RAD 4 – Gross Beta Activity in Water
    - iv. RAD 5 – Gross Alpha Activity in Water by Co-precipitation
    - v. RAD 6 – Tritium in Water
  - g. At the State EOC, Dose Assessment will receive the sample results from the ODH-Lab through CBRNResponder. If CBRNResponder is not available, results can be transferred by phone call, fax, or email.
- 2. Intermediate Phase
  - a. ESF-1 will continue to coordinate the transport of the ingestion phase samples from the Sample Screeners to the ODH-Lab.

- b. ODH-Lab will continue to receive the samples taken in the field, analyze them, and enter the results into CBRNResponder or contact State Dose Assessment directly.
- c. ODH will use TurboFRMAC software and/or spreadsheets to assess the radiological data.



## Attachment VII-B: Emergency Phase Kits

Type	Equipment	Qty	Location
Communications	Case – (1) 800 MHz Radio	1	Ohio EMA 2855 W Dublin-Granville Road Columbus, OH 43235
	Case – (12) 800 MHz Radios	1	
	Case – (24) 800 MHz Radios	1	
	Case – (1) Satellite Phone	1	
	800 MHz Radio	2	
	Case - (1) Satellite Phone	6	
	Cell Phones	5	
Radiological Monitoring Equipment	See FMT Inventory List <sup>2</sup>	3	
FMT Supplies	See FMT Inventory List <sup>2</sup>	3	
Radiological Monitoring Equipment - Backup	See FMT Courier Inventory List <sup>3</sup>	1	
FMT Supplies	See FMT Courier Inventory List <sup>3</sup>	1	

<sup>2</sup> Inventory List located in SOP 658 Field Monitoring Team, Attachments 4 and 5.

<sup>3</sup> Inventory List located in SOP 660 Field Monitoring Team Courier, Attachments 3 and 4.

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## VIII. Planning Standard I

### Accident Assessment



Adequate methods, systems, and equipment for assessing and monitoring actual or potential offsite consequences of a radiological emergency condition are in use. [Regulatory References: 10 CFR 50.47(b)(9); 44 CFR 350.5(a)(9)]

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#### A. Public Drinking Water

1. Public drinking water will be tested using methods that adhere to the standards in 40 CFR 141.25.
2. Ohio EPA is responsible for the sampling of public drinking water using the methods found in the Drinking Water Sampling (Deposition) Guidelines During a Nuclear Power Plant Incident procedure.

#### B. FMTs

1. Responsibility
  - a. Ohio EMA and ODH-BEHRP will each provide a trained radiological emergency worker to act as an FMT. Individuals will be identified in CBRNResponder online.
  - b. There are situations where one of the agencies may need to staff both FMT member positions with trained personnel. For example:
    - i. If an NPP emergency were to occur during a public health emergency where social distancing is a necessity due to a pandemic or a state-wide weather emergency such as a derecho, it is possible that FMTs could be limited to a single person for safety reasons or staffing priorities.
    - ii. In the case of a prolonged event, additional FMT support could be requested through FRMAC or ESF-7's EMAC process.
  - c. Ohio EMA or ODH-BEHRP will provide a trained radiological emergency worker to act as the FMT Courier.
  - d. Ohio EMA will staff the FMT Coordinator position and is stationed at either the Columbiana, Lake, or Ottawa County EOC during the emergency phase of the incident.
  - e. Ohio EPA will staff the FMT Communicator position in Dose Assessment at the State EOC.
  - f. Ohio EMA will store and maintain the equipment needed by the FMTs and FMT Courier.

## 2. Activation and Notification

- a. The Executives at the State EOC will approve to activate FMTs at an Alert. If the event is a fast-breaker and Alert is not declared, FMTs will be activated during the first ECL declared.
- b. The FMT Communicator in Dose Assessment will inform the Ohio EMA FMT Coordinator of the activation of the FMTs and Sample Screeners.
- c. The FMT Coordinator will contact the ODH On-Call Supervisor and inform them of the FMT and Sample Screener activation.
- d. The FMT Coordinator will notify Ohio EMA FMT members using a commercial phone or a cell phone.
- e. The ODH On-Call Supervisor will notify ODH-BEHRP FMT members of their activation. When staffing is determined, the ODH On-Call Supervisor will provide the FMT Coordinator with a list of the ODH-BEHRP FMT members who will be arriving at the Ohio EMA RIM&C Laboratory or the staging area, dependent on home location of personnel.
- f. The initial team members will be staffed from Ohio EMA's Radiological Instrument Technicians and ODH's Health Physicists or Senior Health Physicists, if available. A list of personnel, including alternates, to be contacted for FMT activities is available upon request.
- g. FMTs will typically staff the same 8- or 12-hour daytime shifts as the Sample Screeners, dependent upon conditions in the field, plume conditions, and staff availability. If there is inclement weather or a night shift is required, the safety of the responders will be considered first.

## 3. Deployment and Staging Areas

- a. Once FMTs arrive at the RIM&C Laboratory, preparation will take one to two hours. FMTs will then leave for the staging areas.  

Note: Some FMT members may be staffed out of a regional office. They may meet the FMTs at the staging area.
- b. The estimated minimum drive times to the designated FMT staging areas are:
  - i. Columbiana County EMA (BVPS) – 3.5 hours
  - ii. Fremont Airport (DBNPS) – 2.5 hours
  - iii. Lake County EMA (PNPP) – 3.0 hours
- c. Staging area locations for the FMTs are identified in Appendices G.7, H.7, and I.7.

4. Capabilities and Resources

a. Radioiodine Concentrations

- i. FMTs have the capability to detect and measure radioiodine concentrations in air as low as  $10^{-7}$   $\mu\text{Ci/cc}$  under field conditions.

Note: Interference from noble gas and background radiation does not decrease the stated minimum detectable activity.

- ii. The calculation used to determine the radioiodine concentration is:

$$I - 131 \frac{\mu\text{Ci}}{\text{cc}} = \text{Net cpm} \div \text{Volume (cc)} * \text{Detector Efficiency} * \text{Collection Efficiency} * 2.22\text{E}6 \frac{\text{dpm}}{\mu\text{Ci}}$$

Detector Efficiency	Pancake Probe	0.0025
	Sodium Iodide Probe	0.07
Collection Efficiency	0.95 (up to ~3.5 cfm air flow)	
Volume	10 ft <sup>3</sup> (283,168 cc)	

- b. Each FMT maintains identical equipment with the responsibility of monitoring and sampling during the emergency phase of the incident.

Note: Refer to Ohio EMA SOP 658 Field Monitoring Team, Attachments 4 and 5 for FMT inventories.

5. Operations

- a. Typically, there will be a minimum of two FMTs and one FMT Courier staffed for each shift.

- b. FMTs and the FMT Courier will utilize Ohio EMA pool vehicles (e.g., vans or SUVs) for transportation.

c. FMT Communicator

- i. The FMT Communicator at the State EOC will be in contact with the FMT Coordinator through commercial phone, cell phone, MARCS radio, or MS Teams.
- ii. The FMT Communicator will be responsible for maintaining the line of communication from the FMTs and FMT Coordinator to Dose Assessment.

d. Exposure Control

- i. At the staging area, FMTs will wear PPE including a Tyvek suit, booties, and double gloves. Outer gloves will be changed whenever there is a chance they may have been contaminated.
- ii. To minimize internal exposure, FMTs will not normally eat or drink while in the potential plume area. FMTs will survey themselves prior to eating or drinking to ensure their safety.
- iii. At the end of each shift, FMTs will report to an emergency worker monitoring and decontamination station to doff the PPE and be surveyed.

## 6. Response

### a. Emergency Phase

#### i. FMTs

Note: Refer to Ohio EMA's SOP 658 Field Monitoring Team for monitoring, sampling, and field analysis procedures.

- 1) FMTs will be responsible for monitoring to identify the edges and center of a plume from an airborne radiological release. In the event of no release, they may be required to monitor the area to show background readings for public assurance.
- 2) FMTs will traverse the plume area with survey meters. As readings begin to rise, the FMTs will identify the edge of the plume. The FMTs will continue to traverse the projected plume area seeking the centerline readings (i.e., peak plume measurements).
- 3) FMTs will keep the FMT Coordinator informed of when they reach traversal points, when they see the edges of the plume, and when they've reached the center of the plume.
- 4) FMTs, when directed, will take an air sample and analyze it in the field to provide a radioiodine count and a particulate count to Dose Assessment at the State EOC. If there is a plume, air samples will be taken at or near the peak plume measurement or the plume's centerline.
  - a) If FMT turn-back values would be exceeded when taking centerline readings or samples, utility or federal resources would be requested to complete the mission. If the mission cannot be completed, off-center samples would be taken and centerline readings interpolated.
  - b) If FMTs must exceed their dosimeter limits, the FMT Coordinator will ask ESF-10 at the State EOC for approval.
- 5) After FMTs have analyzed the air sample, they will immediately notify the FMT Coordinator of the results. The FMT Coordinator will pass the information along to the FMT Communicator, who in turn will inform Dose Assessment of the FMT results.
- 6) FMTs will follow a chain of custody procedure with the appropriate documentation.

#### ii. FMT Coordinator

- 1) The FMT Coordinator should provide a situational awareness and safety briefing at the beginning of each shift.
- 2) The FMT Coordinator will utilize meteorological data to create an approximate plume outline on the online CBRNResponder software map. Both the FMT locations and monitoring data can be followed on the CBRNResponder map.

- 3) With the CBRNResponder map created, the FMT Reference Point map is reviewed to determine traversal locations. Traversals are typically chosen near the 2-, 5-, or 10-mile distances.

Note: Refer to Appendices G.6, H.6, and I.6 for general traversal locations.

- 4) The FMT Coordinator will request an FMT take an air sample when it has located the peak plume measurement along the assigned traversal. If there is no plume or a plume below the EPA PAGs, the FMT Coordinator may guide the FMTs to the approximate center of the area where the plume would have traversed and have them take an air sample for public reassurance.
- 5) The FMT Coordinator will be responsible for informing each FMT when it is appropriate for them to take an air sample, to ingest KI, or to take a different route.

- a) Air samples are typically taken near the center of the plume and only when open-window exposure rate measurements are approximately twice the value of the closed-window exposure rate measurements.

Note: The State of Ohio does not use predetermined field monitoring points.

- b) The State of Ohio will recommend the ingestion of KI if there is a General Emergency with either an actual or a potential/imminent airborne release with radioiodine.

Note: This is the general practice. However, the decision of recommending KI may be adapted to the situation.

- 6) When at the Lake County EOC, the FMT Coordinator will coordinate FMT activities with the Lake County General Health District's (LCGHD) FMT Coordinator to ensure FMTs are adequately spaced out to not duplicate data.

Note: For more information on the LCGHD's FMTs, refer to the Lake County Radiological Emergency Response Plan.

- iii. The FMT Courier will receive samples with the chain of custody from the FMTs. The samples will be driven to and transferred, along with the chain of custody, to the Sample Screeners.

#### b. Intermediate Phase

##### Grid Survey

- i. The FMT Coordinator will have the FMTs perform a grid survey by assigning specific areas for each FMT to traverse the area and obtain survey readings which will be plotted on CBRNResponder online.
- ii. IZRRAG can view the grid survey results virtually through the CBRNResponder application.
- iii. GIS will map the survey results.
- iv. IZRRAG will analyze the map and apply the results from the 10-point soil sample analysis to determine a Restricted Zone.

## C. Sample Screeners

1. Responsibility
  - a. ODH-BEHRP will provide Sample Screeners and equipment to screen and prepare radiological samples for transport to an approved radiological laboratory for the emergency and intermediate phases of the emergency.
  - b. ODH-BEHRP will provide a trained individual during the intermediate phase to analyze soil samples after collection.
2. Activation and Notification
  - a. Sample Screeners will be activated and deployed in conjunction with the FMTs.
  - b. After the Executives at the State EOC approve to activate FMTs at a minimum ECL of Alert, the FMT Communicator will inform the FMT Coordinator of the FMT and Sample Screener activation.
  - c. The FMT Coordinator will notify the ODH On-Call Supervisor of the FMTs' and Sample Screeners' activation.
  - d. The ODH On-Call Supervisor will notify ODH-BEHRP Sample Screeners of their activation.
  - e. The ODH On-Call Supervisor will contact the FMT Coordinator and provide the name and phone number of the Sample Screeners' equipment driver.
  - f. A list of personnel, including alternates, to be contacted for Sample Screener activities is available upon request.
3. Operations
  - a. Staffing
    - i. ODH-BEHRP is responsible for staffing the Sample Screeners.

Note: For a long activation, EMAC may be used to supplement the Sample Screener staff.
    - ii. Sample Screeners are composed of: four trained Sample Screeners and one driver for the pickup truck and trailer with the equipment.

Note: The driver may fill in as a Sample Screener. During the intermediate phase, one individual trained to analyze the soil samples will be added to the staff.
    - iii. Sample screeners will typically staff the same shifts as the FMTs or Sample Teams, operating 8- or 12-hour daytime shifts, dependent upon conditions in the field, plume conditions, and staff availability. If there is inclement weather or a night shift is required, the safety of the responders will be considered first.
  - b. Communications

The FMT Coordinator or FTC Coordinator and Sample Screeners will communicate by MARCS radio or cell phone.

c. Chain of Custody

Sample Screeners will maintain the integrity of the samples by following the samples' chain of custody procedures.

d. Exposure Control

- i. Sample Screeners will wear PPE including a Tyvek lab coat and double gloves. Outer gloves will be changed when there is a chance they may have been contaminated.
- ii. To minimize internal exposure, Sample Screeners will not eat or drink while in the sample processing area. Outside the sample processing area, Sample Screeners will survey themselves prior to eating or drinking to ensure their safety.
- iii. At the end of each shift, Sample Screeners will survey themselves for contamination.

4. Response

a. Emergency Phase

- i. The driver from ODH will transport the necessary equipment from Columbus to the chosen location. The location will be based upon the plant and the wind direction.

Note: For a list of Sample Screener locations, refer to Attachments VIII-A – VIII-C.

Note: For a map of the Sample Screener locations, refer to Appendices G.7, H.7, and I.7.

Note: For Sample Screener equipment, refer to the ODH RAD-REP-0355 Field Sample Screening Station: Radiological Response procedure.

- ii. Sample Screeners will set up the equipment and supplies to receive samples. Once operational, the FMT Coordinator will be notified.

- iii. When samples arrive, they will be processed in accordance with the Sample Screeners' procedure. The Sample Screeners will:

- 1) Revert to the use of paper documents, if CBRNResponder online is not available.
- 2) Enter sample information into CBRNResponder online, if the FMTs did not enter the information prior to relinquishing the sample to the FMT Courier.
- 3) Enter all contamination checks of samples into CBRNResponder online.
- 4) Place nonconformance samples (e.g., samples with survey readings over 1 mrem/hr.) into a Radioactive Material Area until disposition can be determined.
- 5) Ensure all samples are safely packaged for transport.
- 6) Contact the FMT Coordinator for assistance in coordination of transportation of samples to the ODH-Lab.

b. Intermediate Phase

- i. ODH-BEHRP will provide a trained individual to analyze soil samples to determine a preliminary Derived Response Level (DRL). The sample analysis results will be provided to Dose Assessment who will calculate a DRL to provide to the IZRRAG, assisting in the determination of a Restricted Zone.

- ii. When samples arrive, they will be processed in accordance with the Sample Screeners' procedure. The Sample Screeners will:
  - 1) Revert to the use of paper documents, if the CBRNResponder mobile app is not available.
  - 2) Enter sample information into the CBRNResponder mobile app, if the Sample Teams did not enter the information prior to relinquishing the sample to Sample Screeners.
  - 3) Enter all contamination checks into the CBRNResponder mobile app.
  - 4) Place nonconformance samples (e.g., samples with survey readings over 1 mrem/hr.) into a Radioactive Material Area until disposition can be determined.
  - 5) Ensure all samples are safely packaged for transport.
  - 6) Contact the FTC Coordinator for assistance in coordination of transportation of samples to the ODH-Lab.

## **D. Sample Teams**

### **1. Responsibilities**

- a. After the emergency phase of the incident, a Field Team Center (FTC) will be established near the ingestion zone area to facilitate the dispatching of State Sample Teams.

Note: If logistically feasible, the FTC will be co-located with FRMAC.

### **b. State Agencies**

- i. ODA will sample various foodstuffs including, but not limited to, meat and meat products, vegetables, fruit, poultry, animal feed, grain, milk and milk products, and honey.
- ii. ODH-BEHRP will sample private water.
- iii. ODNR will sample fish and wildlife.
- iv. Ohio EPA will sample soil, public water, surface water, snow, and vegetation.
- v. Ohio EMA will provide an FTC Coordinator who will manage the operation of the FTC and provide situational awareness to the State Sample Teams.
- vi. ODA, ODH, ODNR, and Ohio EPA will each provide a Team Leader at the FTC to coordinate the collection of samples with their Sample Teams.

### **2. Activation and Notification**

- a. IZRRAG will determine when the Sample Teams should be activated.
- b. Team members will be contacted by their respective agencies, once activated.

### 3. Operations

- a. A Sample Team will be composed of two trained individuals from the respective agency. Individuals will be trained in the sampling techniques for the media which their agency is responsible for.

Note: For Sample Team equipment and for environmental sampling procedures, refer to each agency's sampling procedures as listed in Appendix F.

- b. Sample Teams will staff the same shifts as the Sample Screeners, operating 8- or 12-hour daytime shifts, dependent upon conditions in the field and staff availability.
- c. Sample Teams will be directed by their agency Team Lead at the FTC.
- d. Each agency will utilize their available vehicles or watercraft.
- e. Sample Teams will utilize the CBRNResponder mobile app, if available. If unavailable, Sample Teams will revert to the use of paper forms.
- f. Sample Teams will utilize a chain of custody form to maintain the integrity of the collected samples.
- g. Exposure Control
  - i. Ohio EPA Sample Teams who work inside the Restricted Zone will wear Tyvek suits, booties, and double gloves.
  - ii. Sample Teams working outside of the Restricted Zone will wear double gloves. Outer gloves will be changed whenever they may have been contaminated.

## E. Dose Assessment

### 1. Responsibility

- a. ODH-BEHRP will perform dose assessment calculations during both the Emergency and Intermediate Phases at the State EOC.
- b. Ohio EMA will maintain a room and equipment for dose assessment activities at the State EOC.
- c. Dose Assessment will use the best information available. As data improves, Dose Assessment should verify and update recommendations, if warranted.

### 2. Staffing

- a. ODH-BEHRP will provide Health Physicists or Senior Health Physicists who are trained in the use of the current dose assessment computer software and analysis of the software results.
- b. Ohio EMA will staff the Radiological Assessment Branch Director at the State EOC. This position manages the room and introduces the speakers at the Executive Room briefings.

Note: The Group Supervisor will perform these tasks if the Radiological Assessment Branch Director is unavailable.

- c. During the emergency phase, Ohio EMA will staff the Formal Line Communicator who is responsible for communications with the NPP.

### 3. Equipment

- a. In addition, there will be work stations for ten personnel including the Formal Line Communicator. Each work station includes a computer, two monitors, a chair, a telephone, and a rolling file cabinet.
- b. The Dose Assessment Room contains a projector, two dry erase boards, four televisions, and a combination fax, scanner, printer. Seven computers have dual monitors, two have a single monitor, and one is a laptop.
- c. Three phones are provided for communications with each individual NPP.

### 4. Emergency Phase

#### a. Software

- i. The primary dose modeling software utilized is URI. There are four programs of URI on each computer, one customized to each plant's individual unit(s).
- ii. Data is obtained through the utility's eData website or from the plant EOF. The ODH EOF Liaison gets information from wall boards maintained by the plant with up-to-date plant data. The data is then shared through Teams, commercial phone, or cell phones with the Dose Assessment Team.
- iii. Information and variables used to run the model can be found in the RAD-REP-0349 ODH Dose Assessment Team (ODAT) Systems Operator: Emergency & Intermediate Phases SOP.

#### b. Alternate Methods

- i. The backup software available for use is the Radiological Assessment System for Consequence Analysis (RASCAL).
- ii. If necessary, forms are available to perform hand calculations for BVPS.

#### c. Field Data

- i. FMTs will survey, sample, and analyze air samples in the field. The FMT Coordinator will communicate the results to the FMT Communicator who, in turn, will provide the information to Dose Assessment.
- ii. Dose Assessment will determine the approximate time the plume left the plant to reach the distance of the FMTs at the time of the sample.
- iii. Dose Assessment will compare the dose projection that was created nearest to the estimated time the plume left the plant.
- iv. The FMT data will be compared to the dose projection to confirm that the projection and resulting PAR was conservative for that location.
- v. If the projection proves not conservative enough, Dose Assessment will determine if:
  - 1) Another sample needs to be taken to verify the results.
  - 2) Additional protective actions need to be recommended.

d. Comparison of Results

Dose Assessment's results are compared to the results provided by the plant's Dose Assessors.

5. Intermediate Phase

a. Software

- i. The software used during the Intermediate Phase is TurboFRMAC.
- ii. Laboratory analysis data is uploaded to CBRNResponder.

b. Alternate Methods

- i. Spreadsheets are available for use.
- ii. Calculations are available in the FRMAC Assessment Manual, Volume 2, Methods.

## F. Integration

1. A-Team

- a. Each A-Team member will be seated with the members of their partner State agency in the IZRRAG room.
- b. The seating arrangement will facilitate communications and ensure continuous interaction.

2. NNSA RAP Teams

- a. The State will request a RAP Liaison co-locate with the FMT Coordinator/FTC Coordinator.
- b. The co-location will allow for coordination between the State and federal teams.
- c. The RAP Liaison will coordinate with the RAP team members in the field.

3. FRMAC

- a. With the exception of an incident at BVPS, it is anticipated that the FTC Coordinator will co-locate with FRMAC.
- b. The co-location will allow for the FTC Coordinator to establish a communication center between IZRRAG, the Sample Team Leads, and FRMAC relaying information and requests, as needed.
- c. The BVPS FRMAC will be in Pennsylvania. In order to maintain an FTC within the State of Ohio, the State may send a liaison to the FRMAC site to coordinate between the in-state FTC and FRMAC.
- d. FRMAC and the State of Ohio will share field data through RadResponder.
- e. FRMAC will make mapping products available through CMWeb.

4. Other Agencies

Integration with additional agencies will be made on a case-by-case basis.

## Attachment VIII-A: Sample Screener Locations – BVPS

Location	Distance from Plant	Direction from Plant
Wellsville Fire Department 1202 Main Street Wellsville, OH 43968	13 miles	W
Columbiana County Engineer Complex 235 S. Market Street. Lisbon, OH 44432	20 miles	W
United Local School Complex 8143 SR 9 Hanoverton, OH 44423	27 miles	WNW
Rogers Flea Market & Auctions 45625 SR 154 Rogers, OH 44455	16 miles	NW
Kent State University at Salem 2491 SR 45 Salem, OH 44460	27 miles	NW
Department of Natural Resources 3601 New Garden Road Salem, OH 44460	28 miles	WNW

## Attachment VIII-B: Sample Screener Locations – DBNPS

Location	Distance from Plant	Direction from Plant
Fremont Airport 365 South State Route 53 Fremont, OH 43420	18 miles	SSW
New Life Pentecostals 30470 Lemoyne Road Walbridge, OH 43465	20 miles	W
Storage of America 1825 Oak Harbor Road Fremont, OH 43420	16 miles	S
Allen Township Hall 21030 W. Toledo Street Williston, OH 43468	13 miles	W
Sandusky County Health Department 2000 Countryside Drive Fremont, OH 43420	17 miles	S
Dorn Park 699 Bardshar Road Sandusky, OH 44870	20 miles	ESE

## Attachment VIII-C: Sample Screener Locations – PNPP

Location	Distance from Plant	Direction from Plant
Lake Catholic High School 6733 Reynolds Road Mentor, OH 44060	14 miles	WSW
Lake County EOC 8505 Garfield Road Mentor, OH 44060	16 miles	SW
OSHP Post 28, Chardon 530 Center Street Chardon, OH 44024	15 miles	SSW
South-Central Ambulance District 3100 U.S. 6 Rome, OH 44085	20 miles	SSE
OSHP Post 4, Ashtabula 4860 North Ridge Road West Ashtabula, OH 44004	16 miles	E

# IX. Planning Standard J

## Protective Response



A range of protective actions has been developed for the plume exposure pathway EPZ for emergency workers and the public. In developing this range of actions, consideration has been given to evacuation, sheltering, and, as a supplement to these, the prophylactic use of potassium iodide (KI), as appropriate. ETEs have been developed by applicants and licensees. Licensees will update the ETEs on a periodic basis. Guidelines for the choice of protective actions during an emergency, consistent with Federal guidance, are developed and in place, and protective actions for the ingestion exposure pathway EPZ appropriate to the locale have been developed. [Regulatory References: 10 CFR 50.47(b)(10); 44 CFR 350.5(a)(10)]

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### A. Onsite Assistance

It is not anticipated that the State will provide assistance to licensees during an onsite evacuation. Assistance will be provided by county agencies. If OSHP's assistance is needed, it will be requested and coordinated through the county EOCs.

### B. Emergency Phase

#### 1. Protective Action Recommendations

##### a. PAR Philosophy

- i. The Dose Assessment's Group Supervisor or Unit Leader will utilize a General Emergency PAR Worksheet developed for each individual NPP to determine an appropriate PAR for the situation.
- ii. The State of Ohio issues at least one PAR for a General Emergency ECL.
  - 1) State PARs are based on each plant's PAR flow chart, estimated length of release, plant conditions, plant data, and dose projections. It is expected that the counties have better awareness of local conditions (e.g., weather, road conditions, hostile actions) and they will take those conditions into account when determining the final PAD.
  - 2) In general, the PAR will be issued for either 2 miles 360°/5-miles downwind or 2 miles 360°/10-miles downwind dependent upon dose projections or plant conditions.
  - 3) PARs are usually issued using the downwind sectors including the sector with the centerline of the plume and one sector to either side to determine sub-areas affected. Due to topography, PARs for the BVPS area include the sector with the centerline of the plume and two sectors to either side.

- 4) PARs will be reevaluated in any event which may precipitate the expansion of the initial PAR (e.g., wind direction change or an increase in severity of a release).
- 5) Coordination
  - a) The NPP includes a PAR on the General Emergency notification form.
  - b) If the NPP PAR and the Dose Assessment PAR do not agree, Dose Assessment will review the projections to determine the discrepancy and what the appropriate PAR should be.
  - c) Dose Assessment will provide a PAR to the Executives for approval, editing, or rejection.
  - d) Once approved, the Formal Line Communicator will, in the case of DBNPS or PNPP, relay the PAR to the county EOCs over the Formal Line. In the case of BVPS, either the Informal Line Communicator will relay the information over the Informal Line or the Unit Supervisor will relay the information over MS Teams.
  - e) PARs are communicated immediately, with a sense of urgency and without undo delay to the counties.
- b. Evacuation
  - i. The ODH KI Directive states that evacuation is the primary protective action for an NPP accident involving a release of radioactive iodine to the environment.
  - ii. The State of Ohio uses the 1992 EPA Manual of Protective Action Guides and Protective Actions for Nuclear Incidents, EPA-400-R-92-001 as the basis for evacuation PARs.
  - iii. Evacuation may be recommended to the counties if the emergency progresses to a General Emergency.
  - iv. In the case of a hostile action, the State of Ohio will consider recommending evacuation if there is a release occurring that is over the EPA PAGs.
- c. Sheltering
  - i. The State of Ohio does not currently follow the 2017 PAG Manual: Protective Action Guides and Planning Guidance for Radiological Incidents, EPA-400/R-17/001 approach to sheltering-in-place for the public at projected doses up to 5 rem over four days but could consider it, if needed.
  - ii. The State of Ohio will consider sheltering, also known as sheltering-in-place, as a PAR in cases where shelter will provide better protection to the population. For example, if a release is expected to be a puff of short duration, sheltering of the 2-miles 360°/5-mile or 2-miles 360°/10-mile population may be safer than evacuating the public from the area.
  - iii. In the case of a hostile action, the State of Ohio may recommend sheltering if there is no release or a release below the EPA PAGs.

## 2. Potassium Iodide (KI)

- a. The State of Ohio follows the 2001 FDA Guidance on Potassium Iodide as a Thyroid Blocking Agent in Radiation Emergencies with the exception of the tiered age recommendations. KI is recommended for all individuals regardless of age.
- b. The ODH Director and/or ODH Medical Director have the authority to make decisions regarding the use of KI during an emergency.
- c. KI Recommendation
  - i. Per the ODH KI Directive, the administration of KI is meant to be a supplement to evacuation or sheltering.
  - ii. KI will be recommended for the public, including institutionalized individuals, and emergency workers within the affected sub-areas at the declaration of General Emergency with a release or a significant probability of a release of radioactive iodine.  
Note: ODH may consider recommending KI under other conditions during a General Emergency.
- d. KI Supply
  - i. Replacement & Shelf-Life Extensions
    - 1) ODH receives the State's supply of KI from the NRC.
    - 2) Efforts to coordinate receipt of KI to replace an expiring supply begins two years prior to the expiration date.
    - 3) In the event that new KI cannot be received prior to the current supply's expiration date, ODH will work with an appropriate laboratory to test the KI and confirm its efficacy has not deteriorated. The length of time for a shelf-life extension is determined based upon the anticipated receipt date of the new KI with a margin for delays.
  - ii. Manufacturer Recommendations
    - 1) KI will be stored per the manufacturer's recommendations. Tablets should be stored between 68°F and 77°F, kept dry, and the foil kept intact.
    - 2) Manufacturer's instructions are provided with each packet of KI to emergency worker, institutionalized individual, and county health department locations.
  - iii. Emergency Worker & Institutionalized Individuals
    - 1) The quantities and storage locations of KI for emergency workers and institutionalized individuals in the state and risk counties are listed in the ALC.
    - 2) ODH provides KI packets to the Ohio EMA RRAs who distribute the KI to the assigned emergency worker and institutionalized individual locations when a new supply is received.
    - 3) Distribution of KI during an emergency can be found in each emergency worker's SOPs or Suggested Operating Guidelines (SOGs).

- 4) Communication
  - a) Recommendations to take KI are communicated to designated institutions through a liaison at each county's EOC.
  - b) FMTs are notified by the FMT Coordinator through the FMT Communicator.
  - c) ODNR is notified on the State EOC Operations Floor during a briefing.
- 5) Taking KI is voluntary.
- 6) If an emergency worker declines to take KI, they will be removed from any area where KI was recommended.

iv. General Public

- 1) Quantities and storage locations of KI for the general public are listed in the ALC.
- 2) ODH distributes KI tablets to the county health departments listed when a new supply of KI is received.

Note: For details of the distribution of KI during an emergency, refer to the county plans and SOGs.
- 3) Communication of the recommendation to the public is made by the county(ies) through EAS messages and/or news briefings.

v. Record-Keeping

- 1) Typically, a state emergency worker will contact the Dosimetry Coordinator to notify them if and when they ingested the KI tablet. The Dosimetry Coordinator will document the information on the dosimetry log.

Note: Ohio EPA's Dosimetry Coordinator is referred to as the Radiation Safety Officer.
- 2) State emergency workers are to make note of the KI ingestion on their personal Dosimetry Report Form.

3. Traffic/Access Control

a. Air

- i. At an Alert, a mission will be entered into WebEOC for ESF-1 to contact the FAA and request a Temporary Flight Restriction (TFR) of 10-miles around the specified NPP to an elevation of 10,000 feet. The mission will be assigned to ODOT Aviation.
- ii. When appropriate, ODOT Aviation will contact the FAA to amend or terminate the TFR.
- iii. No equipment, resources, or procedures are necessary.
- iv. Ohio EMA maintains an LOA with the Cleveland Air Route Traffic Control Center to provide for procedures and guidelines in the event of an NPP-related emergency.

b. Rail

- i. At an Alert, a mission will be entered into WebEOC for ESF-1 to contact CSX and/or Norfolk Southern and provide situational awareness of the Alert.

- ii. At an SAE, a mission will be entered into WebEOC for ESF-1 to contact CSX and/or Norfolk Southern to request they restrict rail traffic from entering the 10-mile EPZ.
  - iii. At a GE, a mission will be entered for ESF-1 to contact CSX and/or Norfolk Southern to request they restrict rail traffic from both entering and exiting the 10-mile EPZ.
  - iv. When appropriate, ESF-1 will contact CSX and/or Norfolk Southern to amend or terminate any restrictions.
  - v. All railroad missions will be assigned to PUCO.
  - vi. CSX and/or Norfolk Southern are the owners of the tracks within the 10-mile EPZ. Users of the tracks will be notified by the owners.
  - vii. No equipment, resources, or procedures are necessary.
- c. Water
- i. At an Alert, a mission will be entered directing ESF-9, ODNR, to close any navigable waterway within 10-miles of an NPP.
  - ii. At an Alert at BVPS, a mission will be entered directing ODNR to close the public boat ramps on the Ohio side of the Ohio River that lie within the 10-mile EPZ.
  - iii. Lake Erie
    - 1) At an Alert, a mission will be entered directing ODNR to coordinate with the USCG and clear the 10-mile EPZ portion of Lake Erie at DBNPS or PNPP of recreational boaters, having them return to their point of origin.
    - 2) At a GE, a mission will be entered directing ODNR to coordinate with the USCG to evacuate recreational boaters from the 10-mile EPZ portion of Lake Erie at DBNPS or PNPP and direct them to a “safe harbor.”
 

Note: For safe harbor locations, refer to Attachments H.8 and I.8.
    - 3) ODNR will use the Ohio EMA 669 – Lake Erie Restriction and Clearance SOP to clear and evacuate recreational boaters from the 10-mile EPZ portions of Lake Erie.
    - 4) The ESF-9 desk staff will relay instructions and ECL changes to the regional ODNR staff and the USCG. Status reports will be returned from the regional staff to the ESF-9 desk. The USCG may staff the State EOC and receive this information directly.
    - 5) The Ohio EMA will maintain an LOA with the USCG to provide procedures and guidelines to clear and evacuate the portions of the affected 10-mile EPZ within Lake Erie in the event of an NPP-related emergency.
 

Note: Locations for the boundaries of the Lake Erie 10-mile EPZ are located in the USCG LOA.

Note: For the necessary equipment to perform these duties, refer to Attachments IX-A and IX-B.
  - iv. When appropriate, ESF-9 will be notified to amend or terminate any restrictions or closures.

#### 4. Precautionary Protective Actions

Note: The following list is based on the typical ECL these actions are performed. However, if the emergency classification begins at an SAE, some actions from an Alert ECL will still need to be executed.

##### a. Alert

###### i. ESF-1

- 1) ODOT Aviation will notify the FAA and request a TFR of 10-miles around the plant to an elevation of 10,000 feet.

Note: At BVPS, Pennsylvania will contact the FAA for any TFR requests.

- 2) PUCO will notify CSX and/or Norfolk Southern for situational awareness only.

###### ii. ESF-5

FMTs and Sample Screeners will be activated and deployed to the utility staging area.

###### iii. ESF-9

- 1) At DBNPS and PNPP, ODNR will coordinate with the USCG to clear the 10-mile EPZ portion of Lake Erie of recreational boaters. Boaters will be told to return to their port of origin.
- 2) ODNR will close other navigable waterways within the 10-mile EPZ.
- 3) ODNR will close State properties including parks, forests, and boat ramps within the 10-mile EPZ.
- 4) For DBNPS, ODNR will coordinate with the Ottawa Wildlife Refuge for its closure and the evacuation of the public.

###### iv. ESF-15

The State JIC will issue a news release informing the public of the Alert declaration and any precautionary actions in progress.

##### b. Site Area Emergency

###### i. Executive Room

- 1) The Executives will have DPS Legal request a State of Emergency declaration from the Governor for the risk counties.
- 2) DPS Legal will coordinate with the Fiscal Branch to request the Department of Administrative Services suspend purchasing and contracting requirements contained in Chapters 125 and 153 of the ORC, pursuant to Section 125.061 of the ORC, during the period of the emergency for Ohio EMA and any other State agency participating in emergency assistance under this declaration.

###### ii. ESF-1

PUCO will request CSX and/or Norfolk Southern restrict rail traffic from entering the 10-mile EPZ.

iii. ESF-5

The State FMTs will deploy to the area to monitor and sample.

iv. ESF-11

The Director of ODA will recommend that livestock and poultry be brought inside and placed on stored feed and protected water in all townships and municipalities within the 10-mile EPZ.

v. ESF-15

The State JIC will issue a news release and provide the information at a Utility JIC briefing to inform the public of the:

- 1) SAE declaration and the precautionary actions in progress
- 2) Agricultural advisory issued for the 10-mile EPZ and its details
- 3) Governor's declaration of a State of Emergency

c. General Emergency

i. ESF-1

PUCO will request CSX and/or Norfolk Southern restrict rail traffic from both entering and exiting the 10-mile EPZ.

ii. ESF-9

ODNR will complete evacuation of boating traffic on the Lake Erie portion of the 10-mile EPZ. Boaters will be told to go to a safe harbor and where safe harbors are located.

5. Protective Action Strategy

- a. Site-specific protective action strategies were coordinated between the licensee and offsite response organizations (OROs). The strategies were developed using guidance from the Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants, NUREG-0654/FEMA-REP-1, Rev. 1, Supplement 3, November 2011.
- b. The offsite PAR flowcharts are located in the plant procedure NOP-LP-5504 Protective Measures which addresses all three plants.

## C. Ingestion Phase

1. Responsibility

- a. Each 50-mile county's Commissioners have the authority to make decisions in their county.
- b. The ODA Director has the authority to prohibit the sale or movement of human food or agricultural products.
- c. IZRRAG members create recommendations and advisories based upon the release path or sampling results.

- d. Any recommendation or advisory is given to the Executives at the State EOC for review and approval.
  - e. The Executives provide the agreed upon recommendations to the ingestion counties.
  - f. Signed advisories are provided to the State JIC to craft news releases for the public.
2. Protective Actions
- a. Initial protective action advisories are issued for communities in the 50-mile EPZ who were downwind of the release. As sample results are returned and the locations of contamination are identified, advisories will be modified to reflect ground truth.
  - b. Protective actions are intended to minimize both external and internal contamination of the public.
  - c. Protective action restrictions can affect:
    - i. Transport, sale, or commercial processing of human and animal foods, livestock, and nursery stock
    - ii. Hunting, trapping, or fishing activity (recreational or commercial)
    - iii. Recreational water use including recreational boating
    - iv. Swimming, diving, or other activities that may cause the ingestion of outside water
    - v. Access to incoming water from springs, ponds, rainwater cisterns, and wells
    - vi. Access to clean drinking water
  - d. Protective action advisories may include:
    - i. Not eating outside vegetables, fruit, or honey until it has been tested and released
    - ii. Not using surface-water resources such as rivers, streams, ponds, lakes, and reservoirs until the water can be tested and released
    - iii. Sheltering lactating animals and providing stored feed and protected/stored water
    - iv. Sheltering egg-producing fowl, breeding stock, other livestock, and poultry, if room is available
    - v. Covering feed and/or hay stored outdoors and storing water by covering wells, rain barrels, tanks, and other storage containers
    - vi. Postponing activities such as plowing, cultivating, or harvesting that could resuspend radioactive contamination and create an additional health hazard until the land and/or crops can be tested and released
    - vii. Not destroying any food products unless spoiled or otherwise advised
3. Information Available
- a. ODA, the Ohio State University Extension (OSU-Ext), and the USDA-FSA maintain information on the licensed agribusiness facilities in the state including names and addresses of points of contacts.

- b. ODA maintains information on facilities, including names, addresses, and points of contact, outside the ingestion zone at risk for receiving potentially contaminated products.
- c. The USDA-FSA receives up-to-date information from farmers regarding their land use including which crops are planted and when harvest is expected. The USDA-FSA maintains agricultural maps with current data.
- d. CBRNResponder online may be utilized to plot sample locations.
- e. Ohio EMA, Ohio Geographically Referenced Information Program (OGRIP), ODNR, and Ohio EPA have dedicated GIS personnel to provide additional maps, as needed, including the sampling results. ODH-BEHRP has staff with GIS experience, if needed.

#### 4. Sample Results

- a. The State of Ohio follows the guidance in the FDA’s Accidental Contamination of Human and Animal Feeds: Recommendations for State and Local Agencies, August 13, 1998.
- b. Derived Intervention Levels<sup>4</sup> (DIL)
  - i. A DIL corresponds to the concentration in food present throughout the relevant period of time that, in the absence of any intervention, could lead to an individual receiving a radiation dose equal to the PAG. Food with concentrations at or above the DILs is typically not permitted into commerce.

Note: For the FDA recommended DILs for the principal radionuclides from an NPP accident, refer to Attachment IX-C.

Note: For additional DILs, refer to Attachment IX-D.

- ii. The DIL for a specific radionuclide is calculated as follows:

$$DIL \left( \frac{\text{Bq}}{\text{kg}} \right) = \frac{PAG(\text{mSv})}{[f * Food Intake(\text{kg}) * DC(\text{mSv})]}$$

*DC* – Dose Coefficient

*Food Intake* – Quantity of food consumed in an appropriate period of time

*f* – Fraction of food intake assumed to be contaminated

*PAG* – Protective Action Guide

#### 5. Notification

- a. In the event of a protective action that would affect the ability to sell or move foodstuffs or agricultural products, OSU-Ext. county agents will contact the farmers who could be impacted and provide the necessary information.
- b. Agricultural protective actions will also be provided to the public and agricultural community through news releases and press briefings. Additional methods may include email, social media, or telephone.

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<sup>4</sup> The DIL for each radionuclide group is applied independently. Each DIL applies to the sum of the concentrations of the radionuclides in the group at the time of measurement.

## Attachment IX-A: Vessels Available to Respond to Emergencies at DBNPS

Resource	Qty	Vessel Type
<b>USCG<sup>5</sup></b>		
Station Marblehead	2	45 ft. vessels
	1	29 ft. vessel
	1	27 ft. vessel
	2	22 ft. vessels
Station Toledo	1	45 ft. vessel
	2	29 ft. vessels
	1	27 ft. vessel
<b>ODNR Division of Parks and Watercraft<sup>6</sup></b>		
East Harbor	1	23 ft. Metalshark
Maumee Bay	1	21 ft. Boston Whaler
	2	27 ft. Boston Whalers
	1	26 ft. Metalcraft
Sandusky	1	28 ft. Regulator
	1	29 ft. Mission Marine
	1	34 ft. Metalcraft

<sup>5</sup> Response times for U.S. Coast Guard units are estimated to be 15 to 45 minutes.

<sup>6</sup> Response times for Ohio Department of Natural Resources are estimated to be 2 to 3 hours.

## Attachment IX-B: Vessels Available to Respond to Emergencies at PNPP

Resource	Qty	Vessel Type
<b>USCG<sup>7</sup></b>		
Station Cleveland	1	45 ft. vessel
	3	29 ft. vessels
Station Fairport	1	47 ft. vessel
	3	29 ft. vessels
<b>ODNR Division of Parks and Watercraft<sup>8</sup></b>		
Cleveland	2	27 ft. Boston Whalers
	1	35 ft. Boston Whaler
Geneva	1	32 ft. Boston Whaler

<sup>7</sup> Response times for U.S. Coast Guard units are estimated to be 15 to 45 minutes.

<sup>8</sup> Response times for Ohio Department of Natural Resources are estimated to be 2 to 3 hours.

## Attachment IX-C: FDA Recommended DILs<sup>9</sup>

Radionuclide	Bq/kg	pCi/kg
Sr-90	160	4300
I-131	170	4600
Cs-134 + Cs-137	1200	32,000
Pu-238 + Pu-239 + Am-241	2	54
Ru-103 + Ru-106	$\frac{C_3}{6800} + \frac{C_6}{450} < 1$	$\frac{C_3}{180,000} + \frac{C_6}{12,000} < 1$

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<sup>9</sup> FDA Accidental Contamination of Human and Animal Feeds: Recommendations for State and Local Agencies, August 13, 1998

## Attachment IX-D: Additional DILs<sup>10</sup>

<b>Radionuclide</b>	<b>Bq/kg</b>	<b>pCi/kg</b>
Sr-89	1400	37,800
Y-91	1200	32,400
Zr-95	4000	108,000
Nb-95	12,000	324,000
Te-132	4400	118,800
I-129	56	1512
I-133	7000	189,000
Ba-140	6900	186,300
Ce-141	7200	194,400
Ce-144	500	13,500
Np-237	4	108
Np-239	28,000	756,000
Pu-241	120	3240
Cm-242	19	513
Cm-244	2	54

<sup>10</sup> FDA Accidental Contamination of Human and Animal Feeds: Recommendations for State and Local Agencies, August 13, 1998

## Attachment IX-E: Emergency Phase PAGs

PAR	PAG
Shelter-in-place or evacuation of the public <sup>11</sup>	1 to 5 rem TEDE <sup>12</sup> projected dose over four days <sup>13</sup>
Administration of KI <sup>14</sup>	5 rem CDE <sup>15</sup> projected child thyroid dose from radioactive iodine
Emergency worker exposure	5 rem/year (EPA PAGs provide guidelines to allow emergency workers receive higher doses)

<sup>11</sup> Should begin at 1 rem; the action (or combination of actions) that results in the lowest exposure for the majority of the population should be recommended. Sheltering may begin at lower levels if advantageous.

<sup>12</sup> TEDE – Total Effective Dose Equivalent

<sup>13</sup> Projected dose – The sum of the effective dose from external radiation exposure (e.g., groundshine and cloudshine) and the committed effective dose from inhaled radioactive material.

<sup>14</sup> KI provides thyroid protection from internal exposure to radioiodines only.

<sup>15</sup> CDE – Committed Dose Equivalent

## Attachment IX-F: Intermediate Phase PAGs

PAR	PAG
Relocation of the public	$\geq 2$ rem projected dose <sup>16</sup> in the first year
	0.5 rem/year projected dose in the second and subsequent years
Food interdiction <sup>17</sup>	0.5 rem/year projected whole body dose
	5 rem/year to any individual organ or tissue
Drinking water	See Appendix C for more information
Emergency worker exposure	5 rem/year

<sup>16</sup> Projected dose refers to the dose that would be received, by default, in the absence of shielding from structures or the application of dose reduction techniques. These PAGs may not provide adequate protection from some long-lived radionuclides. Incident-specific factors should be considered.

<sup>17</sup> Additional guidance may be found in the FDA Accidental Contamination of Human and Animal Feeds: Recommendations for State and Local Agencies, August 13, 1998.

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# **X. Planning Standard K**

## **Radiological Exposure Control**



Means for controlling radiological exposures, in an emergency, are established for emergency workers. The means for controlling radiological exposures shall include exposure guidelines consistent with EPA Emergency Worker and Lifesaving Activity Protective Action Guides. [Regulatory References: 10 CFR 50.47(b)(11); 44 CFR 350.5(a)(11)]

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### **A. Emergency Worker Doses**

#### **1. Occupational Dose Limits**

State agencies are covered by the occupational dose limits found in OAC 3701:1-38-12 in coordination with the Ohio Bureau of Workman's Compensation (BWC).

#### **2. State employees who may be considered emergency workers include, but are not limited to, the FMTs, Sample Screeners, ODNR Watercraft personnel, and Ohio EPA Sample Teams.**

#### **3. Emergency worker dose limits are defined in the EPA PAG Manual: Protective Action Guides and Planning Guidance for Radiological Incidents, EPA-400/R-17/001, January 2017. The assigned limit is mentioned during every dosimetry briefing.**

Note: For more information, refer to Attachment X-A.

#### **4. Emergency worker guidelines are based on cumulative dose constraint levels. It is assumed that doses acquired in response to a radiological incident would be "once in a lifetime" doses and that future radiological exposures would be substantially lower.**

#### **5. Every effort is made to keep emergency worker exposures ALARA. Excess exposure is undertaken only if absolutely necessary and authorized through the State EOC's ESF-10 staff.**

#### **6. Emergency Worker Dose Exceedance**

a. When an emergency worker is nearing their dose limit or exceeds it, if possible, they will remove themselves from the area. In the event that this cannot be accomplished, the emergency worker's Dosimetry Coordinator should be aware that the emergency worker was approaching their dose limit. If not, the emergency worker should contact the Dosimetry Coordinator and ask for guidance.

i. The Dosimetry Coordinator will contact the ESF-10 staff at the State EOC.

ii. The ODH staff will ask a series of questions and perform dose calculations based on the information provided.

iii. The ODH staff has the ability to approve or deny the dose exceedance request dependent upon the situation or the results of the calculations. The ODH Executive Room representative will be kept aware of all requests made.

- iv. If a request would allow an emergency worker to exceed 50 rem<sup>18</sup>, approval from the ODH Director or ODH Medical Director is required. No approval will be granted for doses above 70 rem.
  - v. Once a request is approved or denied, the Dosimetry Coordinator is responsible for notifying the emergency worker of the decision.
  - vi. The ESF-10 staff will maintain a copy of the dose calculations worksheet with the emergency worker's information.
  - vii. If approved, the Dosimetry Coordinator should make note of the new dose limit on the dosimetry log for the emergency worker. If the request was denied, the individual must be removed from the radiological area once their dose limit has been reached.
  - viii. Briefing information for those exceeding the administrative limits is located in Ohio EMA's 659 – Dosimetry Coordinator procedure.
7. Women with declared pregnancies may not be assigned to a role within the 10-mile EPZ. If the pregnancy is declared, the dose equivalent to an embryo/fetus from occupational exposure during the entire pregnancy is not to exceed 0.5 rem per OAC 3701:1-38-12. No "once in a lifetime" emergency exposure has been delineated for an embryo/fetus.
8. Minors will not be assigned as emergency workers. The annual occupational dose limit for minors are 10 percent of the annual limits for adult workers per OAC 3701:1-38-12. No "once in a lifetime" emergency exposure has been delineated for minors.

## **B. Dosimetry**

- 1. Dosimeters
  - a. A list of dosimeter quantities and locations can be found in the ALC.
  - b. The process for distributing dosimeters to emergency workers is detailed in the Dosimetry Coordinator procedures and the Ohio EMA 669 – Lake Erie Restriction and Clearance (ODNR) procedure.
  - c. DRDs will be returned to the Dosimetry Coordinator at the end of the shift dependent upon the organization. Some organizations may have the emergency worker maintain the DRD through the emergency.
  - d. PRDs will be turned in to the Dosimetry Coordinator when the individual's role in the emergency is complete or when requested. If an early reading of a PRD is required, a replacement PRD will be provided to the individual.
  - e. PRDs will be evaluated by a processor accredited by the NVLAP.
  - f. Dosimetry Readings
    - i. DRDs are to be read every 30 minutes, unless otherwise instructed.

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<sup>18</sup> Emergency workers who may exceed 25 rem must do so voluntarily and be made aware of the risks.

- ii. DRD readings will be relayed to the Dosimetry Coordinator to record on the Dosimetry Log.

Note: Emergency workers are to record readings on their dosimetry report form, as well.

- iii. Reporting dosimetry readings will be through the communication links from the emergency workers to the Dosimetry Coordinator. This may include, but is not limited to, cell phone, MARCS radio, or other cellular device.
- iv. When receiving dosimeters, emergency workers will indicate the initial readings on the HEA5537 Dosimetry Report Form. Upon return of the dosimeters, the emergency worker will indicate the return readings in order to maintain a running total of exposure.
- v. If an emergency worker is approaching or has exceeded their dosimetry limit, they are to notify the Dosimetry Coordinator as soon as possible.

g. Dose Records

- i. Emergency workers are responsible for knowing their cumulative exposure.

If an emergency worker's cumulative exposure has reached the current dosimetry limit, either a dose exceedance needs to be requested or the emergency worker needs to be assigned to a position that is unlikely to be exposed to further radiation.

- ii. Each agency is responsible for maintaining their workers' dose records.

2. Administrative Dose Limit

- a. An administrative dose limit has been determined in advance to ensure that emergency workers do not exceed the EPA emergency worker dose limits.
- b. In order to account for the inhalation dose, the emergency worker dose limit has been reduced by 1/5 allowing for a conservative external dose to be measured on a dosimeter.
  - i. The whole-body exposure calculation for emergency workers who have ingested KI does not include the contribution from thyroid dose due to inhalation of radioiodine, because that contribution will be minimal if KI is administered prior to exposure.
  - ii. For the less severe but more probable reactor incident sequences, the whole-body exposure to emergency workers who have taken KI is unlikely to exceed 5 times their measured external dose as shown on a dosimeter.
  - iii. Therefore, if the external dose measured by a dosimeter is limited to 1/5 of the applicable limit, the emergency worker is unlikely to exceed the whole-body exposure limit.

## Attachment X-A: Emergency Worker Dose Limits<sup>19</sup>

Guideline	Activity	Condition
5 rem <sup>20</sup>	All occupational exposures	All reasonably achievable actions have been taken to minimize dose.
10 rem <sup>21</sup>	Protecting critical infrastructure necessary for public welfare	Exceeding 5 rem is unavoidable and all appropriate actions are taken to reduce dose.
		Monitoring is available to project or measure dose.
25 rem	Lifesaving or protection of large populations	Exceeding 5 rem is unavoidable and all appropriate actions are taken to reduce dose.
		Monitoring is available to project or measure dose.
>25 rem	Lifesaving or protection of large populations	All conditions listed above and only for people fully aware of the risks involved.

<sup>19</sup> EPA PAG Manual: Protective Action Guides and Planning Guidance for Radiological Incidents, EPA-400/R17/001, January 2017

<sup>20</sup> Doses listed are considered Total Effective Dose Equivalent (TEDE).

<sup>21</sup> For potential doses >5 rem, medical monitoring programs should be considered.

# XI. Planning Standard L

## Medical & Public Health Support



Arrangements are made for medical services for contaminated injured individuals. [Regulatory References: 10 CFR 50.47(b)(12); 44 CFR 350.5(a)(12)]

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### A. Supplemental Lists

1. ODH-BHP maintains a list of hospitals and medical facilities in the state capable of providing medical support for contaminated, injured individuals.
2. The list includes:
  - a. Facility name
  - b. Location
  - c. Type (e.g., public, private, or other)
  - d. Capacity for ambulatory and non-ambulatory patients
  - e. Special radiological capabilities
    - i. Radiologically trained staff
    - ii. Types of monitoring equipment
    - iii. Capability to analyze samples for internal and external contamination

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## XII.Planning Standard M

### Recovery, Reentry, & Post-Accident Operations



General plans for recovery and reentry are developed. [Regulatory References: 10 CFR 50.47(b)(13); 44 CFR 350.5(a)(13)]

#### A. Restricted Zone

1. At the conclusion of the emergency phase, actions occur allowing the State to define the Restricted Zone (RZ).
  - a. Grid Surveys
    - i. The FMTs are assigned grids to traverse and provide survey readings through the CBRNResponder mobile app or the FMT Coordinator.
    - ii. GIS will take the readings or the online data from CBRNResponder and develop a map for IZRRAG.
  - b. Soil Samples
    - i. Ohio EPA will determine locations, in a 10-point pattern in the downwind direction of the release, to take soil samples.
    - ii. The DRL can be determined in one of two ways:
      - 1) A trained individual from ODH-BEHRP may perform an analysis on the soil samples while at the Sample Screening location. Dose Assessment will calculate the DRL based on the sample results.
      - 2) ODH-Lab will perform an analysis on the soil samples once they are received at the laboratory. Dose Assessment can calculate the DRL using the sample results.
  - c. Restricted Zone Definition
    - i. The initial RZ is considered to be the evacuated sub-areas.
    - ii. To revise the RZ, IZRRAG will take the DRL which is provided in mR/hr and, in coordination with GIS, draw a line through the grid surveys, also in mR/hr, approximately where the grid survey reading equals the DRL number.
      - 1) The line drawn is adjusted to the closest roads for ease in traffic and access control.
      - 2) The DRL is the number at which residents may exceed the 1- or 2-year EPA PAGs if they remain living there.

- iii. Locations where the grid reading is equal to or higher than the DRL are considered the new, recommended RZ.
- iv. The recommended RZ, as a PAR, is relayed to the Executives who will review it and approve, edit, or reject the recommendation.
- v. Once approved, the recommended RZ will be relayed to the county Executive Groups for review.
- vi. The county(ies) will revise the RZ to account for factors that IZRRAG cannot take into account when creating the recommended RZ, such as geo-political boundaries or locations which would be easier for access control.
- vii. The county(ies) will relay the RZ, now a PAD, to the State once finalized.
- viii. The RZ may be revised as samples are taken at varying frequencies as time progresses. The process will be performed in the same manner as above.

Note: Sample frequencies will be revised throughout the intermediate and late phases. Sampling will be more frequent at the beginning of the intermediate phase and decrease in frequency over time when appropriate.

- d. Aerial Measurement System (AMS) Flyovers
  - i. After AMS arrives at the affected area, flight routes will be determined.
  - ii. AMS will begin flying a serpentine route and gathering data on radiation levels.
  - iii. The data will be mapped and provided to IZRRAG. This data will be used to refine the RZ boundaries.

## B. Recovery

### 1. Definition

Recovery from a radiological incident refers to the process of reducing radiation exposure rates and concentrations of radioactive material in the environment to acceptable levels for the return of the general public for return or use after a release from an NPP.

### 2. Chain of Command

The State's chain of command will remain unchanged. The Governor is the person responsible for the response. The Director of Ohio EMA is the Governor's designee for managing the response.

### 3. Initiation of Recovery Actions

- a. Recovery planning begins during the emergency phase.
- b. The transition from emergency phase to intermediate phase is generally accepted to occur when the IZRRAG is staffed and operational.
  - i. IZRRAG's activation is planned during the emergency phase, but will be initiated after the release is brought under control.
  - ii. An eNotify will be sent to the IZRRAG group to give a date and time for people to mobilize to the State EOC's IZRRAG room.

- c. The initial recovery actions will include IZRRAG recommending a revised RZ to the Executives.
- d. Once staffed, IZRRAG will take Dose Assessment's place as the subject matter expert to the Executives for the response. Dose Assessment then reports to IZRRAG.
- e. GIS will take a major role in providing different maps for IZRRAG and mapping Dose Assessment's sample results.

#### 4. Sampling Plan

- a. Sampling plans will be developed by the IZRRAG at the State EOC.

- i. The IZRRAG will be comprised of representatives from:

- 1) ODA
- 2) ODH
- 3) ODNR
- 4) Ohio EMA
- 5) Ohio EPA

- ii. The following will serve as support agencies for IZRRAG:

- 1) OSU-Extension
- 2) USDA-FSA
- 3) Federal Advisory Team members

Each A-Team member will be seated with its equivalent State agency's members and provides guidance, as needed.

- c. With the exception of soil sampling, ingestion phase sampling will not occur within the area determined to be the restricted zone.
- d. Sampling locations will be initially chosen with the focus being within the 50-mile downwind sectors.
- e. IZRRAG Sample Priorities (in order of highest to lowest)

- i. Soil samples

These soil samples will be specifically collected using the 10-point strategy within the downwind 10-mile EPZ and analyzed to determine the RZ's DRL. Snow may be collected if present.

- ii. Water

Sampling locations will include both public and private water sources. Community surface water supplies and open-air treatment facilities closest to the plant will be sampled first. Service connections outside of the deposition footprint will be considered.

iii. Milk

Milk sampling will begin after plume passage and continue for at least three days. Re-sampling will be performed weekly to determine if radioiodine is still present.

iv. Crops

Initial sampling will take place within a week after plume passage and will be re-sampled as crops mature or seasons change.

v. Soil and vegetation

Soil and vegetation will be sampled within the RZ and the ingestion zone. The continued analysis will account for the decay of the short half-life radionuclides in the area and allow for the adjustment of the RZ. Samples may also be utilized for the development of a soil DRL for food crops.

vi. Meat

Initial sampling will occur within one week after plume passage and will be re-sampled. Meat from processing plants within the ingestion zone will be sampled before being released to market.

f. Within each IZRRAG agency, there are priorities on what and where to sample.

i. For example, ODA's primary priorities are:

- 1) Milk
- 2) Mature, leafy perishable produce (e.g., lettuce, spinach)
- 3) All other above-ground crops, including fruit, that is ready for harvest
- 4) Eggs
- 5) Bottled water from production facilities in the area
- 6) Animal feed
- 7) Meat (e.g., pork, chicken)
- 8) Root crops that are ready for harvest
- 9) Honey
- 10) Crop seed
- 11) Nursery stock

ii. There may be additional considerations in choosing a site to sample such as selecting:

- 1) Large commercial operations (producers, processors, manufacturers) inside the ingestion zone
- 2) Large commercial operations (processors or manufacturers) outside the ingestion zone that may receive foods from the affected area
- 3) Small commercial operations (producers, processors, manufacturers) inside the ingestion zone

- 4) Producers, processors, or manufacturers near, but outside, the ingestion zone boundary
  - g. Additional locations or media may be sampled upon request or to guide decision-making.
  - h. The frequency of each media sampled will be evaluated as time progresses. Early in the intermediate phase, samples will be taken more frequently and spread out further as time progresses.
5. Dose Assessment
  - a. Dose Assessment will receive sample analysis results from the ODH-Lab. The results will be evaluated using spreadsheet calculations or TurboFRMAC.
  - b. Dose Assessment may perform dose reconstruction calculations.
6. Reentry
  - a. The counties are responsible for the reentry process and requirements.
  - b. ODH-BEHRP and/or IZRRAG will provide and regularly update information to the Reentry Verification and Orientation Centers (REVOCs) to assist with radiation levels and stay times.
  - c. ODH-BEHRP may provide personnel to REVOCs to assist with reentry instructions. If ODH-BEHRP is unavailable, EMAC or contractors may be utilized.
  - d. IZRRAG will be available for consultation regarding reentry requirements.
7. Return
  - a. By determining the RZ, IZRRAG will recommend which locations may relax the evacuation and allow persons to return to their homes or businesses.
    - i. The RZ is defined using the DRL and survey readings. Areas outside of the revised RZ may still be contaminated, but residents will not exceed the 1- or 2-year EPA PAGs if living there.
    - ii. Recommendations may be made regarding simple decontamination processes or how to reduce one's potential for becoming contaminated.
  - b. This information is relayed to the Executives who in turn will inform the counties of the return recommendations.
  - c. Counties are responsible for the process of returning the public to previously Restricted Zones.
8. Relocation
  - a. The counties are responsible for the implementation of relocating persons who were evacuated from the restricted zone and those who were not evacuated during the emergency, but have been discovered to be located in an area where radiation levels are above the EPA PAGs.
    - i. The EPA PAG for relocation is 2 rem over the first year of exposure.
    - ii. After the first year, the EPA PAG for relocation is 0.5 rem per year.

- b. When creating the revised RZ, IZRRAG may find grid surveys show areas outside the initial RZ to be above the DRL.
  - i. If an area is above the DRL, the EPA PAGs will be exceeded by residents.
  - ii. Dependent upon the DRL exceeded, the time required to remain at a location may be one or more years before the EPA PAGs will be exceeded.
- c. Relocation Assistance – The following lists include examples of support that may be available following a nuclear power plant emergency.
  - i. Local, State, Private Sector, and Nonprofit
    - 1) Ohio EMA
      - a) The Disaster Recovery Branch administers the:
        - i) State of Ohio Individual Assistance Grant Program
        - ii) State Disaster Relief Program
        - iii) FEMA Individuals and Households Program
      - b) Ohio EMA may coordinate and leverage state, federal, and NGO resources to assist local governments in addressing housing-related recovery needs.
    - 2) Department of Aging
 

The Department of Aging may identify funds, if available, and strategies to meet unmet needs and support delivery of long-term care supports and services.
    - 3) Ohio Development Services Agency (ODSA)
 

ODSA may:

      - a) Following a disaster, work with communities to amend or extend current grants in order to meet the needs of the citizens in the affected area.
      - b) Using the majority of the agency’s funds to assist low- and moderate-income residents in the area of new construction, rental assistance, financial counseling and other eligible activities after the initial state or federal assistance has been provided.
      - c) Assist with the identification of available housing and coordinate referrals of disaster survivors to appropriate emergency housing to meet short and long-term needs.
      - d) Process applications and coordinate with Ohio EMA concerning the use of Community Development Block Grants (CDBG) and other state/federal disaster assistance programs.
    - 4) Ohio Housing Finance Agency (OHFA)
      - a) OHFA may work with owners of OHFA-funded properties to develop action plans to relocate residents.

- b) OHFA will maintain a free website for the general public, called Ohio Housing Locator, which provides information about affordable, accessible, rental housing in Ohio.
- 5) American Red Cross (ARC)
- a) When there is no federal declaration for Individual Assistance or when such a declaration will be delayed, ARC may provide finance assistance.
  - b) In the event of a federal declaration, financial assistance may be provided for undocumented individuals or others ineligible for Individual Assistance from ARC.
- ii. Federal
- 1) Department of Housing and Urban Development (HUD)
- a) HUD may help identify long-term housing priorities and conducts housing assessments with local, state, and federal partners, as needed.
  - b) HUD may coordinate and leverage applicable local, state, and Federal resources for long-term housing recovery.
  - c) HUD has programs that can help support housing issues.
    - i) The State and local communities that have received annual formula funding through the CDBG Program and/or the HOME Investment Partnerships Program (HOME) may amend their action plans to re-allocate existing funds toward recovery activities. Following a disaster with significant unmet needs, Congress may appropriate additional funding for the CDBG program dedicated specifically for disaster recovery purposes.
    - ii) Following a Presidential Major Disaster Declaration, relief options are made available to Federal Housing Administration (FHA) mortgagors, including a 90-day moratorium on foreclosures and forbearance on foreclosures of FHA-insured home mortgages. In addition, under the National Housing Act, HUD's Section 203(h) program is available and provides 100 percent financing through FHA-approved lenders, and HUD's Section 203(k) loan program can be utilized by those who have lost their homes to finance the purchase of a house through a single mortgage. These are available up to 12 months after the Presidential Declaration.
- 2) USDA
- a) The USDA may provide technical assistance and identify current housing programs that may be utilized for recovery, including determinations of eligibility, application processes, and project requirements.
  - b) The agency mission will be executed by the USDA during disaster recovery, supporting rural housing and farm labor housing assistance.

- c) The USDA will provide technical assistance in identifying animal housing alternatives and support services to accommodate people with animals, including household pets and service animals.
- d) The USDA will facilitate a multiagency coordination of whole community animal mission recovery activities to support housing operations.
- e) The USDA may provide emergency loans to help producers recover from production and physical losses due to a disaster.

3) FEMA

- a) FEMA may provide financial and technical resources for both disaster housing and long-term recovery assistance, deriving its post-disaster coordination, authority, and resources from the Stafford Act.
- b) FEMA will act as the lead agency for the National Housing Task Force for coordinating post-disaster housing assistance.

4) U.S. Department of Veterans Affairs (VA)

- a) The VA will provide expertise on financial and technical assistance programs designed to support veterans and their purchases of homes.
- b) The VA may possess an inventory of real estate owned properties that could be a potential housing resource.

5) Small Business Administration (SBA)

- a) The SBA may provide loans for property damages to homeowners, renters, businesses of all sizes and private nonprofit organizations.
- b) The SBA may provide Economic Injury Disaster Loans to eligible small businesses and private nonprofits.

6) U.S. Access Board

The U.S. Access Board may serve in an advisory role on issues and regulations on emergency housing for people with disabilities and others with access and functional needs.

9. Reoccupancy

- a. The counties are responsible for the prioritization and conditions for reoccupancy.
- b. IZRRAG will be available for locals to consult regarding “acceptable radiation levels,” short-term exposure, health risks, remediation options, land use, and the period of time temporary cleanup levels will be considered acceptable.

10. Population Health Monitoring

ODH will assist HHS in implementing a population health monitoring program after an NPP emergency.

## 11. Population Exposure

- a. ODH, in coordination with a university, CDC, DOE and/or NRC, will estimate total population exposure caused by the incident and estimate the health effects from the incident.
- b. There are multiple methods that may be used to determine Projected Public Dose.
  - i. TurboFRMAC
  - ii. FRMAC Assessment Manual, Volume 1, Overview and Methods, SAND2020-10446R, July 2020, Method 1.5
    - 1) Calculated using the radionuclide mixture data.
    - 2) Calculated using a dose rate measurement.

## 12. Informed Response

- a. Assessment is responsible for ensuring the involved response organizations are kept informed of the recovery efforts. They do this through:
  - i. Operations Floor briefings
  - ii. SPOT reports – SPOT reports include information from the Operations Floor briefing and ESF emails in report format and emailed to a group contact that contains a wider range of partner agencies. Dependent on the tempo of the response, SPOT reports may be released up to twice each day.
  - iii. Situation reports – The Situation report is a daily report sent to the Governor regarding the response efforts.
- b. Organizations can stay informed by monitoring the Activity Log, Incident Documentation, and Resource Requests boards in WebEOC.

## 13. Housing

- a. OHFA and ODSA will jointly facilitate the ESF-14 Housing Task Force.

Note: For more information, refer to Ohio EOP ESF-14 Tab D, Housing Recovery Strategy.
- b. Support agencies are listed in the Ohio Emergency Operations Plan, ESF-14 Tab D – Housing Recovery Strategy.
- c. OHFA will identify possible temporary and permanent housing resources.
- d. Ohio EMA, in conjunction with ESF-14 and the county EMAs will determine the number of displaced households.
- e. ARC may provide client assistance cards for up to three days emergency lodging. ARC may provide case management, referrals, etc., in securing temporary housing.
- f. The Salvation Army may be allowed to repurpose the Rapid Re-Housing Program (RRHP). RRHP provides those left homeless in shelters rental unit identification, financial assistance, and case management.

- g. The ESF-14 Housing Task Force will evaluate housing needs with consideration given to individuals with functional needs and their caregivers. Consideration is also given to households with pets. For longer term housing options, the financial capability of the renter is considered.
- h. Ohio Department of Aging will assess the impact the event has made to facilities for older adults (e.g., residential care facilities, congregate housing), and identify short- and long-term needs.
- i. Ohio Department of Education will monitor intra-district open enrollment to allow students to attend schools in districts other than the district where their parent(s) resides.
- j. Grants and loans may be available dependent upon the type of emergency declaration.

#### 14. Debris Management

- a. ODNR, ODOT, and Ohio EPA will jointly facilitate the ESF-3 Debris Management Task Force (DMTF) when activated.

Note: For more information, refer to the Ohio Emergency Operations Plan, ESF-3 Tab A – Debris Management.

- b. Additional support agencies include DAS, Ohio Department of Rehabilitation and Corrections (ODRC), ODA, ODH, Ohio EMA, OHNG, and PUCO.
- c. The DMTF will be activated to coordinate with county, state, and federal agencies to address, prioritize, and assign debris removal and disposal missions and tasks.
- d. The State and counties may provide initial debris removal. However, contractors may be used to perform the debris removal as soon as contracts are in place. Cleanup operations may be dependent upon the situation.
- e. ODA will provide guidance on the collection, transportation, rendering, and acceptable disposal options of animal carcasses. ODA will provide guidance on the regulatory requirements for these activities.
- f. ODH will provide regulatory oversight to ensure storage or staging of radioactive material is performed in accordance with the OAC. ODH will also provide regulatory oversight to ensure radioactive material is disposed of in accordance with the OAC.
- g. Ohio EPA will provide guidance on establishing temporary staging areas.
- h. PUCO will regulate the transportation of radioactive waste; to include loading, movement by highway, proper packaging, and identification of radioactive waste through the adoption of 49 CFR 171.1 and 49 CFR 171.2.
- i. DAS will research current contracts and canvas respective contractors to establish a contract for the radioactive debris removal.
- j. Resources for debris removal may be numerous. Resources will range from personnel, PPE, flatbed trucks, and dump trucks, to front-end loaders. It will be widely varied and situation dependent.
- k. Applicable federal guidance will be taken into consideration during any cleanup operation.

# XIII. Planning Standard N

## Exercises & Drills



Periodic exercises are (will be) conducted to evaluate major portions of emergency response capabilities, periodic drills are (will be) conducted to develop and maintain key skills, and deficiencies identified as a result of exercises or drills are (will be) corrected. [Regulatory References: 10 CFR 50.47(b)(14); 44 CFR 350.5(a)(14)]

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### A. Exercises

1. Exercises are conducted in accordance with NRC and FEMA regulations and guidance.
2. Critique
  - a. There will be a hot wash at the end of each exercise and drill. Players, controllers, observers will have the opportunity to share observations.
  - b. In addition, there is an after-action meeting after every dry run and exercise that allows players, observers, and controllers to share more details than during the hot wash.
3. Findings and Corrective Actions
  - a. Identified findings are put into an after-action matrix. The matrix includes:
    - i. Description of finding
    - ii. Description of corrective action
    - iii. Organization/individual responsible for implementing the corrective action
    - iv. Timeframe for completion
    - v. Date completed
  - b. The matrix is periodically reviewed until all actions are addressed.
4. Full/Partial Participation Exercises
  - a. Typically, each NPP rotates as a State full participation during one biennial exercise and as a partial participation during the next biennial exercise. However, the State will participate in at least one full participation exercise within a two-year time frame.
  - b. For a full participation exercise, the following are activated and evaluated at the State: Assessment, Dose Assessment, Executive Room, FMTs, JIC, and Operations.
  - c. For a partial participation exercise, the following are activated and evaluated at the State: Assessment, Dose Assessment, Executive Room, and JIC.

- d. ODNR Parks and Watercraft participate and are evaluated in any DBNPS or PNPP exercise.
5. Plume Exposure Pathway Exercises
- a. Plume exposure pathway exercises will be conducted biennially for each NPP affecting the State of Ohio, typically using scenarios that result in a simulated release or significant threat of release of radioactive material to the environment.
  - b. OROs will be driven to demonstrate their capability to integrate with other response organizations to implement emergency plans and respond to an incident at an NPP.
  - c. Scenarios will include varied release conditions, non-sequential escalation of ECLs, and may include hostile action incidents.
  - d. Plume scenarios will simulate potential conditions prompting PARs for the public including evacuation or sheltering at varying distances from the plant.
  - e. The indication of a simulated release will be verifiable through simulated field monitoring and sampling data.
6. Ingestion Exposure Pathway Exercises
- a. Ingestion exposure pathway exercises, also known as Ingestion Pathway Exercises (IPX), will be conducted at least once every eight years in response to an ingestion exposure pathway scenario.
  - b. The type and numbers of personnel participating in an IPX will be sufficient for demonstrating capabilities required by plans and procedures.
  - c. The State of Ohio will alternate its IPX cycle every seven years between DBNPS and PNPP.
  - d. An IPX will be conducted in conjunction with a full participation plume exposure pathway exercise.
7. Exercise Scenarios
- a. Exercise scenarios will be varied from exercise to exercise to provide opportunity for appropriate capabilities to be demonstrated and to avoid anticipatory responses by participants.
  - b. All exercise scenario elements will be utilized during each eight-year exercise cycle.
  - c. Hostile Action-Based (HAB)
    - i. A HAB scenario will involve an initiating hostile action directed at the NPP site and will involve the integration of offsite resources with onsite response.
    - ii. The HAB scenario will be used at least once during each eight-year exercise cycle for each NPP affecting the State of Ohio.
    - iii. A no/minimal radiological release scenario will not be used in conjunction with a HAB scenario in consecutive HAB exercises at an individual NPP.

- d. Rapid Escalation
  - i. A rapid escalation is defined as an initial classification of or rapid escalation, within 30 minutes, to an SAE or GE.
  - ii. The rapid escalation scenario will be used at least once during each eight-year exercise cycle at each NPP affecting the State of Ohio.
- e. No/Minimal Release
  - i. A no/minimal release scenario will involve no radiological releases or an unplanned minimal radiological release that requires the site to declare an SAE, but does not require the declaration of a GE.
  - ii. The no/minimal release scenario will only be used once each eight-year exercise scenario at each NPP affecting the State of Ohio.
  - iii. The planning process will account for capabilities and activities that may not have the opportunity to be evaluated with the no/minimal scenario.
  - iv. Alternative demonstration and evaluation venues will be considered.
  - v. If the State's biennial requirements have been met, it may consider participating, to support the counties, but not being evaluated.

## **B. Drills**

- 1. All major elements of plans and procedures will be tested at the minimum frequency specified.
- 2. Laboratory Drills
  - a. Laboratory drills are conducted biennially.
  - b. FEMA evaluates laboratory demonstrations once in each eight-year cycle.
  - c. The following will be demonstrated during a laboratory drill:
    - i. Sample collection
    - ii. Contamination control while handling samples
    - iii. Prevention of elevation of background
    - iv. Prevention of sample cross-contamination
    - v. Preservation of samples
    - vi. Sample tracking
    - vii. Sample preparation
    - viii. Sample measurement and analysis
    - ix. Sample analysis data transmission
  - d. The laboratory drill will be documented and reported in the ALC.
- 3. Environmental Monitoring Drills
  - a. Environmental monitoring drills will be conducted annually and documented in the ALC.

- b. These drills will include direct radiation measurements in the environment, collection, and analysis of all sample media (e.g., air, soil, vegetation, and water).
  - c. The drills will include the following activities/capabilities:
    - i. Alert, notification, and mobilization of emergency personnel
    - ii. Establish and maintain communication capabilities with appropriate locations
    - iii. Utilization of necessary equipment and supplies to support emergency operations
    - iv. Collection of sufficient information to help FMTs characterize the release and control radiation exposure
    - v. Collection and record keeping of ambient radiation measurements, and radioiodine and particulate samples
    - vi. Identification of significant radioactivity levels on collected sampling media
    - vii. Ability to make appropriate measurements and collect samples to support adequate assessments and protective action decision-making
4. Ingestion Pathway/Post-Plume Phase Drills
- a. Ingestion pathway drills will be conducted biennially and documented in the ALC.
  - b. Participants will include any OROs that have roles or responsibilities for the ingestion pathway and/or post-plume phase activities.
  - c. Participation may be rotated according to drill objectives.
  - d. The following activities will be considered during each eight-year cycle:
    - i. Sample plan development
    - ii. Analysis of lab results from samples
    - iii. Assessment of the impact on foodstuffs and agricultural products
    - iv. Protective decisions for reentry, relocation, return, and reoccupancy
    - v. Foodstuffs/crop embargo
    - vi. Dissemination of 50-mile EPZ information to pre-determined individuals and businesses
    - vii. Assessment of emergency worker knowledge of 50-mile EPZ procedures
    - viii. Identification of the individual authorized to make decisions within the 50-mile EPZ.
5. Communications Drills
- a. Communications drills between all applicable emergency response organizations within the 10- and 50-mile EPZs will be conducted at specific frequencies.
    - i. ORO communications systems are tested monthly.
    - ii. Communications with the Federal response organizations, states within the 50-mile EPZ, and the Province of Ontario are tested quarterly.
    - iii. Communications with the NPPs, ORO EOCs, and FMTs are tested annually.

- b. Drills will include a message content check.
- c. These drills will confirm the hardware is functioning properly and messages are understood by the receiving organization.

## Attachment XIII-A: Exercise & Drill Frequencies

Type	Frequency
<b>Power Plant Evaluated Exercises</b>	
Partial Participation/Full Participation <sup>22</sup>	Biennially
Ingestion Pathway	Once in an 8-Year Cycle
Hostile Action-based (HAB)	Once in an 8-Year Cycle
<b>Other Evaluated Exercises</b>	
Laboratory	Once in an 8-Year Cycle
<b>Communication Drills</b>	
State/Federal Government	Quarterly
State/Local EOCs, EOF, Field Teams	Annually
State/Local EOCs/Utility	Monthly
State/Adjacent States/Nations (Canada)	Quarterly
<b>Other Drills</b>	
Environmental Monitoring	Annually
Ingestion Pathway/Post-Plume	Biennially
Laboratory	Biennially

<sup>22</sup> A minimum of one full participation exercise will be performed biennially.

## Attachment XIII-B: State of Ohio 8-Year Schedule

2024-2031	BVPS	DBNPS	PNPP
2024	6.11		9.24
	FP <sup>CRRR</sup>		PP
2025		5.13	
		FP	
2026	6.9		9.22-9.23
	PP <sup>HAB</sup>		FP <sup>IPX</sup>
2027		5.11	
		PP <sup>CRRR</sup>	
2028	6.6		9.12
	FP		PP
2029		4.24	
		FP	
2030	6.4		8.27
	PP		FP <sup>HAB</sup>
2031		5.13	
		PP <sup>HAB</sup>	

<b>Legend</b>	
<b>CRRR</b>	County RRR
<b>FP</b>	Full Participation
<b>HAB</b>	Hostile Action Based
<b>IPX</b>	Ingestion Pathway Exercise
<b>PP</b>	Partial Participation

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# XIV. Planning Standard O

## Radiological Emergency Response Training



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Radiological emergency response training is provided to those who may be called on to assist in an emergency. [Regulatory References: 10 CFR 50.47(b)(15); 44 CFR 350.5(a)(15)]

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### A. Responsibilities

1. Ohio EMA
  - a. The RRAs will be available to provide training in the counties, if requested.
  - b. The Ohio EMA Training Point of Contact can assist in scheduling federal training programs in-state or in helping an individual sign up for federal training out-of-state.
  - c. Ohio EMA will retain sign-in sheets for state-related trainings and report it in the ALC.
  - d. Ohio EMA will maintain a record of individuals who take the web-based training located on the DPS Public Safety Training Campus (PSTC).
  - e. Ohio EMA will ensure its employees with an operational role receive initial and annual training, as appropriate.
2. Other State Agencies
  - a. Each agency is responsible for ensuring their employees with operational roles receive initial and annual training, as appropriate.
  - b. Each agency should maintain a record of their employees' training.
3. Individuals
  - a. If an individual attends a federal training course, they are responsible for providing documentation of having attended to their employer.
  - b. Individuals should also maintain a record of their training history.

### B. Training Programs

1. Training should be commensurate with each individual's emergency response role.
2. The following training is an example of the courses available for emergency workers. Equivalent training is acceptable.

a. State

Note: Refer to Attachment XIV-A for a list of state training modules offered. Availability of web-based modules is noted and can be located at <https://learning.dps.ohio.gov/PSTC/>.

- i. In-person training is available upon request.
- ii. NPP integrated drills, dry runs, and evaluated exercises are also considered training opportunities.

b. Federal

Note: Refer to Attachments XIV-B through XIV-D.

- i. Training programs are typically scheduled, at a minimum, annually.

c. Commercial

- i. A number of courses exist, offered by providers such as universities, national laboratories, and utilities, which may be used to supplement state and federal training programs.
- ii. Commercially offered courses vary widely in topic and scheduled availability.

# Attachment XIV-A: State Training – Local and/or Web-Based

## Module 1 – Basic Radiation Principles

- Scope** To provide information on basic radiological principles and concepts, including the structure of an atom, the various types of ionizing radiation and the definitions of common terms.
- Audience** Emergency workers who could potentially be exposed to elevated levels of ionizing radiation.
- Online** This module is available online at the PSTC as WBT820.

## Module 2A – Biological Effects: Basic

- Scope** To provide basic information concerning the biological effects on the human body due to exposure to the different types and levels of radiation.
- Audience** Emergency workers who could potentially be exposed to elevated levels of ionizing radiation.
- Online** This module is available online at the PSTC as WBT801.

## Module 2B – Biological Effects: Medical Personnel

- Scope** To provide basic information concerning the biological effects on the human body due to exposure to the different types and levels of radiation.
- Audience** Hospital workers who could potentially be exposed to elevated levels of ionizing radiation.
- Online** This module is not available online.

## Module 3 – Contamination Pathways

- Scope** To provide information on the common pathways of radiological contamination and define the related terminology.
- Audience** Emergency workers who are expected to be exposed to radioactive contamination.
- Online** This module is available online at the PSTC as WBT802.

## Module 4 – Contamination Control

- Scope** To explain the basic principles in limiting a person's exposure to radiation and what the regulatory limits for exposure are.
- Audience** Emergency workers who could potentially be exposed to elevated levels of ionizing radiation.
- Online** This module is available online at the PSTC as WBT803.

# Attachment XIV-A: State Training – Local and/or Web-Based (Continued)

## Module 5 – Basics: Radiological Emergency Response

**Scope** To provide information on the basics of the radiological emergency response plan, including the EPZ, ECLs, notifications, protective actions, and recommendations versus decisions.

**Audience** Anyone who could be involved in a nuclear power plant emergency response.

**Online** This module is available online at the PSTC as WBT804.

## Module 6A – Instrumentation: Dosimetry

**Scope** To provide information on direct-reading dosimetry (DRD), including the various types available, their use, and the advantages/disadvantages of each.

**Audience** Emergency workers who may be assigned dosimetry during their response.

**Online** This module is available online at the PSTC as WBT805.

## Module 6B – Instrumentation: Survey Instruments

**Scope** To provide information on survey meters, including the different types available, their operation, and the advantages/disadvantages of each.

**Audience** Emergency workers expected to use survey meters in their response.

**Online** This module is not available online.

## Module 6C – Instrumentation: Portal Monitors

**Scope** To provide information on the use of and advantages/disadvantages of portal monitors.

**Audience** Emergency workers expected to use portal monitors to screen for radioactive contamination.

**Online** This module is available online at the PSTC as WBT808.

## Module 6D – Instrumentation: Survey Instruments - General

**Scope** To provide information on survey meters, including the different types available, their operation, and the advantages/disadvantages of each.

**Audience** Emergency workers expected to use survey meters in their response.

**Online** This module is available online at the PSTC as WBT814.

## Module 6E – Instrumentation: Dosimetry – UltraRadiac

**Scope** To provide information on the UltraRadiac electronic dosimeter, including operational checks and operations.

**Audience** Emergency workers expected to use UltraRadiacs in their duties.

**Online** This module is available online at the PSTC as WBT809.

# Attachment XIV-A: State Training – Local and/or Web-Based (Continued)

## Module 7A – Personal Protective Equipment (PPE): Medical Personnel

<b>Scope</b>	To provide medical personnel information on PPE for radiological contamination control, including the types of equipment/clothing available and how to properly use them.
<b>Audience</b>	Hospital personnel who are likely to work in areas with radiological contamination.
<b>Online</b>	This module is not available online.

## Module 7B – PPE: Fire/Police/Emergency Medical Services (EMS)

<b>Scope</b>	To provide emergency workers information on PPE for radiological contamination control, including the types of equipment/clothing available and how to properly use them.
<b>Audience</b>	Fire, police, and EMS who could come into contact with radiological contamination.
<b>Online</b>	This module is available online at the PSTC as WBT815.

## Module 7C – PPE: FMTs

<b>Scope</b>	To provide FMTs information of PPE for radiological contamination control, including the types of equipment/clothing available and how to properly use them.
<b>Audience</b>	FMTs who could work in areas with radiological contamination.
<b>Online</b>	This module is not available online.

## Module 7D – PPE: Monitoring and Decontamination

<b>Scope</b>	To provide emergency workers information on PPE for radiological contamination control, including the types of equipment/clothing available and how to properly use them.
<b>Audience</b>	Emergency workers working at monitoring and decontamination stations who could come into contact with radiological contamination.
<b>Online</b>	This module is available online at the PSTC as WBT811.

## Module 8A – Sampling Techniques: Early Phase

<b>Scope</b>	To provide information on the air and particulate samples to be taken, the reasons for taking them, and how to take them during the early phase of an NPP emergency.
<b>Audience</b>	FMTs
<b>Online</b>	This module is not available online.

# Attachment XIV-A: State Training – Local and/or Web-Based (Continued)

## Module 8B – Sampling Techniques: Intermediate Phase – Ohio EPA

**Scope** To provide information on the soil and water samples to be taken, the reasons for taking them, and how to take them during the intermediate phase of an NPP emergency.

**Audience** Ohio EPA Sample Teams

**Online** This module is not available online.

## Module 8C – Sampling Techniques: Intermediate Phase – ODA

**Scope** To provide information on the crop and milk samples to be taken, the reasons for taking them, and how to take them during the intermediate phase of an NPP emergency.

**Audience** ODA Sample Teams

**Online** This module is not available online.

## Module 8D – Sampling Techniques: Intermediate Phase – ODNR

**Scope** To provide information on the fish and wildlife samples to be taken, the reasons for taking them, and how to take them during the intermediate phase of an NPP emergency.

**Audience** ODNR Sample Teams

**Online** This module is not available online.

## Module 9A – Monitoring & Decontamination: People – Monitoring

**Scope** To provide information on the criteria for the use of survey instruments to detect radioactive contamination on a person, the process to monitor a person, and the documentation of the process.

**Audience** Emergency workers expected to use survey instruments to screen people for radiological contamination.

**Online** This module is available online at the PSTC as WBT812.

## Module 9B – Monitoring & Decontamination: People - Decontamination

**Scope** To provide information on the method to decontaminate contaminated people and documentation of the decontamination.

**Audience** Emergency workers whose duties include the decontamination of contaminated people.

**Online** This module is not available online.

# Attachment XIV-A: State Training – Local and/or Web-Based (Continued)

## Module 9C – Monitoring & Decontamination: Vehicles/Equipment - Monitoring

<b>Scope</b>	To provide information on the criteria for the use of survey instruments to detect radiological contamination on vehicles and equipment, the process to monitor vehicles and equipment, and the documentation of the process.
<b>Audience</b>	Emergency workers expected to use survey instruments to screen vehicles and/or equipment for radiological contamination.
<b>Online</b>	This module is available online at the PSTC as WBT813.

## Module 9D – Monitoring & Decontamination: Public Vehicles – Decontamination

<b>Scope</b>	To provide information on the methods to decontaminate public vehicles and documentation of the process.
<b>Audience</b>	Emergency workers whose duties include the decontamination of vehicles owned by the public.
<b>Online</b>	This module is not available online.

## Module 9E – Monitoring & Decontamination: Emergency Vehicles/Equipment - Decontamination

<b>Scope</b>	To provide information on the methods to decontaminate emergency vehicles and equipment and documentation of the process.
<b>Audience</b>	Emergency workers whose duties include the decontamination of emergency vehicles and equipment.
<b>Online</b>	This module is not available online.

## Module 10 – Medical Transport

<b>Scope</b>	To provide information to emergency workers on how to identify, treat, package, and transport radiologically contaminated, injured patients to the hospital.
<b>Audience</b>	EMS personnel who could transport radiologically contaminated, injured patients.
<b>Online</b>	This module is not available online.

## Module 11 – Hospital Radiation Exclusion Area (REA)

<b>Scope</b>	To provide information to hospital emergency workers on how to identify and treat radiologically contaminated, injured patients.
<b>Audience</b>	Medical personnel who could treat radiologically contaminated, injured patients.
<b>Online</b>	This module is not available online.

# Attachment XIV-A: State Training – Local and/or Web-Based (Continued)

## Module 12 – Potassium Iodide (KI)

- Scope** To provide information to emergency workers on the purpose for taking KI, the agency who will recommend the ingestion of KI, when to take KI, and the documentation of the process.
- Audience** Emergency workers who could take KI, as a protective measure, during the course of their duties.
- Online** This module is available online at the PSTC as WBT806.

## Module 13A – Protective Actions: Early Phase

- Scope** To provide information on the purpose of protective actions during the early phase of an NPP emergency, the conditions that initial PARs are based, the criteria use for making PARs and the PAD decision-making process.
- Audience** Directors, Coordinators, PIOs
- Online** This module is not available online.

## Module 13B – Protective Actions: Intermediate Phase

- Scope** To provide information on reentry, relocation, return, and the purpose of protective actions during the intermediate phase of an NPP emergency, and the conditions that protective actions are based.
- Audience** Directors, Coordinators, IZRRAG members, PIOs
- Online** This module is not available online.

## Module 14A – Early Phase Dose Assessment: Non-Technical Overview

- Scope** To provide a non-technical overview of the early phase and the purpose of dose assessment for the early phase, including the basic steps in performing dose assessment, and definitions of terms used.
- Audience** Directors, Coordinators, PIOs, EOC Personnel
- Online** This module is not available online.

## Module 14B – Early Phase Dose Assessment: Technical Overview

- Scope** To provide a technical overview of the early phase and the purpose of dose assessment, including the basic steps in performing dose assessment, and definitions of terms used.
- Audience** Dose Assessment, FMTs
- Online** This module is not available online.

# Attachment XIV-A: State Training – Local and/or Web-Based (Continued)

## Module 15A – Intermediate Phase Dose Assessment: Non-Technical Overview

<b>Scope</b>	To provide a non-technical overview of the intermediate phase and the purpose of dose assessment, including the basic steps in performing dose assessment, and definitions of terms used.
<b>Audience</b>	Directors, Coordinators, PIOs, EOC Personnel
<b>Online</b>	This module is not available online.

## Module 15B – Intermediate Phase Dose Assessment: Technical Overview

<b>Scope</b>	To provide a technical overview of the intermediate phase and the purpose of dose assessment, including the basic steps in performing dose assessment, and definitions of terms used.
<b>Audience</b>	Dose Assessment, IZRRAG members
<b>Online</b>	This module is not available online.

## Module 16 – IZRRAG

<b>Scope</b>	To provide information on the purpose of protective actions during the intermediate and recovery phases of an NPP emergency, the conditions that protective actions are based, the criteria used for making PARs and the PAD decision-making process.
<b>Audience</b>	IZRRAG members
<b>Online</b>	This module is not available online.

## Module 17 – Plant: Basics

<b>Scope</b>	To provide information on how the major processes and components of U.S. designed NPPs generate electricity, potential accident scenarios, and related protective actions.
<b>Audience</b>	Anyone who could respond to an NPP emergency.
<b>Online</b>	This module is not available online.
<b>Other</b>	Prior to each biennial exercise, the NPP being evaluated provides State agencies with “Systems Training” which discusses this information.

## Attachment XIV-B: CTOS Classes

For additional courses, refer to <https://ctosnnsa.org/training.aspx>. Options available include Resident Courses, Mobile Training, Web-Based Training, or Virtual Training.

### **AWR-140 – Introduction to Radiological/Nuclear Weapons of Mass Destruction (WMD) Operations**

**Description** This instructor-led course presents a radiological/nuclear WMD overview consisting of ionizing radiation fundamentals, terminology, health effects, and recognition factors. This information is requisite knowledge for responders performing the interdiction/prevention mission as well as first responders and other personnel who are likely to be the first to arrive on the scene. This fundamental knowledge of ionizing radiation and its effects is vital to responder safety, allowing performance of their mission while keeping the risk to themselves and the public as low as reasonably achievable.

**Audience** Agricultural Safety, Emergency Management, Environmental Protection, Governmental Administrative, Public Health

**Prerequisite** None

**Online** This course is available online at CTOS (<https://www.nts-ctos.com>) as AWR-140-W.

### **PER-332 – Population Monitoring at Community Reception Centers (CRC)**

**Description** This course trains emergency responders and non-uniformed support personnel to operate monitoring stations within the CRC or similar reception centers in order to perform population monitoring and contamination reduction measures after a radiological or nuclear incident. Responders learn the basic operation of radiation detectors, dosimeters, portal monitors, PPE selection, and decontamination procedures. Attendees are taught to conduct radiological surveys of personnel and vehicles.

**Audience** Emergency Management, Emergency Medical Services, Fire Service, Governmental Administrative, Healthcare, Hazardous Materials, Law Enforcement, Public Health, Citizen/Community Volunteer, and other personnel who may be assigned radiological detection operations.

**Prerequisite** None

**Online** This course is not available online.

## Attachment XIV-B: CTOS Classes (Continued)

### PER-345 – Radiation Instruments Operations

**Description** This course trains emergency responders and non-uniformed support personnel in the individual skills needed to use radiation detection equipment and dosimetry while operating in the prevent or response radiological/nuclear mission fields. Responders will be trained to select the appropriate instrument for a specific mission and use the instrument in performance of that mission.

Responders learn the basic operation of radiation detectors, dosimeters, and portal monitors. Attendees are taught radiation detection activities using a variety of detection instruments. This course uses radioactive material to provide realism.

Upon completion of this course, participants will distinguish between various radiation detection and measuring devices. The participant will:

- Identify basic radiation concepts
- Describe the characteristics of a dosimeter
- Describe the characteristics of a Personal Radiation Detector
- Describe the characteristics of a survey meter
- Describe the characteristics of a Radioisotope Identification Device (RIID)
- Describe the general characteristics and operation of a portal monitor

**Audience** Emergency Management, Governmental Administrative, Public Health, and other personnel who may be assigned radiological detection operations.

**Prerequisite** AWR-140 – Introduction to Radiological/Nuclear WMD Operations

**Online** This course is not available online.

### PER-348 – Operations Level Response to Radiological/Nuclear WMD

**Description** The course provides an introduction to operations in a radiological/nuclear environment during incidents involving radiological WMD. The curriculum includes detailed information on the radiological and nuclear threats facing our Nation, fundamentals of radiation, an introduction to radiological detection and survey instruments, protective measures that may be employed by first responders, personal protective equipment and decontamination. As part of the training, participants will engage in drills designed to enhance their ability to perform the basic tasks required to safely and effectively execute their duties in a radiological WMD response mission.

**Audience** Public safety personnel and first responders who, in the course of their duties may participate in radiological/nuclear emergency response.

**Prerequisite** None

**Online** This course is not available online.

# Attachment XIV-C: FEMA Courses – Web-Based

## IS-100 – Introduction to Incident Command System

**Description** IS-100, Introduction to the Incident Command System, introduces the Incident Command System (ICS) and provides the foundation for higher level ICS training. This course describes the history, features and principles, and organizational structure of the Incident Command System. It also explains the relationship between ICS and the National Incident Management System (NIMS).

**Prerequisite** None

## IS-200 – ICS for Single Resources and Initial Action Incidents

**Description** IS-200 is designed to enable personnel to operate efficiently during an incident or event within the ICS. IS-200 provides training on and resources for personnel who are likely to assume a supervisory position within the ICS.

**Prerequisite** IS-100 Introduction to the Incident Command System (required)  
IS-700.A, National Incident Management System (NIMS), An Introduction (recommended)

## IS-302 – Modular Emergency Radiological Response Transportation Training (MERRTT)

**Description** This course includes the following topics: radiological basics, biological effects, hazard recognition (markings, labels, and placards), initial response actions, radioactive material shipping packages, on-scene patient handling, radiological terminology and units, assessing package integrity, radiation detection instrumentation, and radiological decontamination.

**Prerequisite** None

## IS-700 – National Incident Management System (NIMS), An Introduction

**Description** This course introduces and overviews NIMS which provides a consistent nationwide template to enable all government, private sector, and nongovernmental organizations to work together during domestic incidents.

**Prerequisite** None

## IS-800 – National Response Framework (NRF), An Introduction

**Description** This course introduces the concepts and principles of the NRF.

**Prerequisite** None

## Attachment XIV-D: FEMA/CDP Courses

For additional courses, refer to <https://cdp.dhs.gov/training>. Options include In-Person Training and Web-Based Training.

### AWR-317 – REP Core Concepts Course (RCCC)

**Description** This course provides an overview of the off-site REP program. Addresses the REP Program history and sentinel events, federal regulatory policies, basic radiation principles, REP planning guidance (planning standards), REP demonstration guidance (exercise evaluation areas) and the REP Disaster Initiated Review (DIR) process.

**Audience** Any member of an organized federal, state, local, or tribal radiological/hazardous materials response element who has responsibility for responding to or managing a radiological incident.

**Prerequisite** AWR-923-W Radiological Emergency Management (REM)

**Online** This course is not available online.

### AWR-327 – REP Exercise Controller Course (RECC)

**Description** This course provides learners foundational knowledge on the preparation for, and conduct of, REP exercise control, and presents an opportunity for participants to begin building controller skills. To prepare participants to control the flow of scenario events to ensure an exercise is conducted in accordance with the exercise objectives and extent of play.

**Audience** New and experienced controllers from State or local emergency management and utilities involved with offsite REP exercise/drill control for NPPs.

**Prerequisite** AWR-317 Radiological Core Concepts (RCCC)

**Online** This course is not available online.

### AWR-351 – REP Post-Plume Awareness (RPPA) Course

**Description** The REP Program has developed an instructor-led course that will help State and local emergency managers and planners more effectively meet the challenges presented to the emergency responder community during a radiological incident at an NPP. The main purpose for the development of this abbreviated awareness-level course is to provide a precise training track which focuses on the specific needs of those 50-mile emergency planning zones jurisdictions responsible for addressing protective actions related to contaminated commercial food products during a radiological incident.

**Audience** REP ingestion counties within the 10 to 50-mile EPZ who usually do not write their own plans but rely on State agency plans to identify procedures and capabilities to be implemented during a radiological incident that affects their jurisdiction.

## Attachment XIV-D: FEMA/CDP Courses (Continued)

State, local, and utility emergency managers and planners responsible for emergency operations plans and implementation procedures concerning ingestion protective actions response capabilities within the 50-mile EPZ.

Personnel from supporting agencies involved in response to a radiological incident at an NPP.

**Prerequisite** None

**Online** This course is not available online.

### AWR-352 – REP Plan Core Concepts (RPCC) Course

**Description** The REP Program has developed a course that will assist State and local emergency managers more effectively meet the planning challenges presented to the emergency responder community during a radiological incident at an NPP. This awareness-level 0.5-day course will focus specifically and be limited to the introduction of the existing REP planning methodology. This methodology goes beyond the planning guidance provided in Comprehensive Preparedness Guide - 101 and incorporates the unique preparedness aspects of FEMA's REP Program.

**Audience** State, local, and utility emergency managers and planners responsible for the development, review, and maintenance of REP emergency operations plans and implementation procedures.

**Note** This abbreviated course is meant to satisfy the prerequisite course requirements in preparations for the MGT-453 REP Post-Plume Planning Course (RPPP) for Ingestion Counties which are not necessarily directly involved in response planning during the Plume Phase of a radiological incident at an NPP.

**Prerequisite** AWR-317 REP Core Concepts (RCCC)  
AWR-923-W Radiological Emergency Management (REM)

**Online** This course is not available online.

### AWR-923-W – Radiological Emergency Management (REM)

**Description** Radiological emergency management is a term that describes efforts to prevent, prepare for, respond to, and recover from events and to mitigate risk of future events that could result in significant radiation-related effects.

This course is designed to familiarize members of the general public with:

- Types of radiological emergencies
- Potential effects of radiological emergencies on the public
- Fundamental concepts related to how you can best ensure the safety of yourself and others during a radiological emergency

**Audience** Anyone with a desire to learn about radiological emergency management

## Attachment XIV-D: FEMA/CDP Courses (Continued)

**Prerequisite** None

**Online** This course can be found online at [https://cdp.dhs.gov/online\\_course](https://cdp.dhs.gov/online_course).

### AWR-925-W – Radiological Accident Assessment Concepts (RAAC)

**Description** This course provides only an overview of key concepts that will be addressed in more depth in the classroom course.

In this course, you will learn how to assess the offsite radiological consequences to the public following a release of radioactivity from nuclear power reactors and non-reactor incidents, and how to use this assessment as a basis for recommending protective actions to decision makers.

**Note** This course will take approximately 16 hours to complete. It is recommended that you take the course in multiple sittings.

**Audience** Anyone interested in attending the resident RAAC Course (PER-316)

**Prerequisite** None

**Online** This course can be found online at [https://cdp.dhs.gov/online\\_course](https://cdp.dhs.gov/online_course).

### AWR-928-W – Nuclear/Radiological Incident Annex (NRIA)

**Description** This course is designed to help you understand the NRIA.

At the end of the course, you will be able to:

- Describe the overall purpose of the NRIA and the policies that govern its use.
- Describe the roles and responsibilities of agencies involved in the management of nuclear/radiological incidents.
- Describe the types of incidents for which it would be activated and the concept of operations for a response.

**Note** This course should take approximately 120 minutes to complete.

**Audience** Anyone interested in the Federal response to an NPP emergency

**Prerequisite** None

**Online** This course can be found online at [https://cdp.dhs.gov/online\\_course](https://cdp.dhs.gov/online_course).

### AWR-930-W – REP Decision-Makers Course (RDMC)

**Description** This web-based course provides a basic awareness and understanding of a radiological event, and how the information supplied during the event may affect your decision-making process.

## Attachment XIV-D: FEMA/CDP Courses (Continued)

In this course you will:

- Learn basic information about radiation, radiation exposure, and radioactivity.
- Understand nuclear power plant operations, accidents, and emergency response.
- Understand the relationship between PAGs, PARs, and PADs.

Identify incident phases and how emergency workers play a role in your protective action decisions.

<b>Note</b>	This course will take approximately 8 hours to complete. It is recommended that you take the course in multiple sittings.
<b>Audience</b>	Directors, Coordinators, other Decision-Makers
<b>Prerequisite</b>	None
<b>Online</b>	This course can be found online at <a href="https://cdp.dhs.gov/online_course">https://cdp.dhs.gov/online_course</a> .

### ICS-300 – Intermediate ICS for Expanding Incidents

<b>Description</b>	This course expands upon information covered in the IS-100 and IS-200 courses.
<b>Audience</b>	Personnel who require advanced knowledge of the ICS
<b>Prerequisite</b>	IS-0100 Introduction to the ICS IS-0200 ICS for Single Resources and Initial Action Incidents; IS-0700 NIMS, An Introduction IS-0800 NRF, An Introduction
<b>Online</b>	This course is not available online.

### ICS-400 – Advanced ICS for Command and General Staff, Complex Incidents

<b>Description</b>	This course expands upon information covered in the IS-100, IS-200 and ICS-300 courses.
<b>Audience</b>	Senior personnel expected to perform in a management capacity in an Area Command or Multi-Agency Coordination Entity
<b>Prerequisite</b>	IS-0100 Introduction to the ICS IS-0200 ICS for Single Resources and Initial Action Incidents ICS-300: Intermediate ICS for Expanding Incidents IS-0700 NIMS, An Introduction IS-0800 NRF, An Introduction
<b>Online</b>	This course is not available online.

## Attachment XIV-D: FEMA/CDP Courses (Continued)

### MGT-445 – REP Plume Plan Review (RPPR) Course

**Description** This course focuses on the review of REP emergency plans, specifically the NUREG 0654 FEMA-REP-1, Rev. 2 planning standards that address the public's health and safety. The REP Plume Plan Review Course will include training based on the Comprehensive Preparedness Guide (CPG) -101, familiarization of a HAB plan review, annual plan review and the ALC Review Guide process.

**Audience** Emergency Managers, Public Health Professionals

**Prerequisite** AWR-317 REP Core Concepts Course (RCCC)  
IS-235.c Emergency Planning Course

**Online** This course is not available online.

### MGT-453 – REP Post-Plume Plan Review (RPPP) Course

**Description** This course focuses on the review of offsite response organizations' REP plans and implementation procedures utilizing the 16 planning standards (from 44 CFR Part 350 and 10 CFR §50.47) and associated evaluation criteria (from NUREG-0654 FEMA-REP-1, Rev.2) which address protecting the health and safety of the public when responding during the post-plume phase of a radiological emergency at an NPP.

The scenario-driven classroom exercises will focus on the participants' organization Post-Plume (Intermediate) Phase plans and implementation procedures for response activities related to Relocation, Reentry, Return using EPA PAGS and the Ingestion Exposure Pathway protective actions following FDA guidelines.

**Audience** Emergency Managers and Planners from Offsite Response Organizations with responsibilities within the entire 50-mile EPZ, REP Program Staff responsible for reviewing State and County plans and procedures, personnel from supporting agencies involved in response to an NPP emergency

**Prerequisite** MGT-445 REP Plume Plan Review Course (RPPR) or AWR-352 REP Planning Core Concepts (RPCC)

**Online** This course is not available online.

### PER-314 – REP Exercise Evaluator Course (REEC)

**Description** Topics include regulations and guidelines for evaluating REP exercises, in preparation of, observations during, post-exercise activities, and techniques for exercise evaluation. This also includes the observation of video vignettes of REP exercises and the development of exercise narratives submitted for review by REP adjunct instructors.

## Attachment XIV-D: FEMA/CDP Courses (Continued)

<b>Audience</b>	State, Local, and utility personnel who are involved in the development of off-site REP plans and exercises
<b>Prerequisite</b>	AWR-317 REP Core Concepts Course (RCCC) MGT-445 REP Plan Review Course (RPPR) or AWR-352 REP Planning Core Concepts Course (RPCC)
<b>Online</b>	This course is not available online.

### PER-316 – Radiological Accident Assessment Concepts (RAAC)

<b>Description</b>	This course addresses radiological consequences of accidents involving radiological materials. This includes accidents or incidents involving commercial power reactors, lost sources, dispersion devices, and transportation. The focus of the course is concepts involved in formulating protective action recommendations following a radiological accident, such as dose quantities, atmospheric dispersion, dose projection, protective action guides, and derived intervention levels. Participants engage in problem-solving sessions and a tabletop exercise.
<b>Note</b>	The participant is required to pass a final exam. It not intended for emergency management staff. The material requires familiarity with mathematical equations and exponential manipulations.
<b>Audience</b>	Enrollment is limited to local, State, and Federal technical radiological accident assessment staff. Private sector staff also may apply.
<b>Prerequisite</b>	AWR-925-W Radiological Accident Assessment Concepts (RAAC)
<b>Online</b>	This course is not available online.

### PER-904 – Radiological Emergency Response Operations (RERO)

<b>Description</b>	RERO is a five-day course includes lectures, hands-on training, and team exercises. Students learn the concepts, equipment, and procedures related to radiological incident response, including a commercial nuclear power facility. During the course, the responders work in teams to perform radiological emergency response operations in a realistic exercise environment. The course culminates with an exercise that implements the ICS in response to an incident that requires team coordination.
<b>Audience</b>	Any member of an organized state or local radiological/hazardous materials response element who has responsibility for responding to or managing a radiological incident
<b>Prerequisite</b>	AWR-160 Weapons of Mass Destruction (WMD)/Terrorism Awareness for Emergency Responders IS-100 Introduction to the ICS IS-200 ICS for Single Resources and Initial Action Incidents

## Attachment XIV-D: FEMA/CDP Courses (Continued)

IS-700 NIMS, An Introduction

IS-800 NRF, An Introduction

AWR-923-W Radiological Emergency Management (REM)

Meet the requirements and standards of Hazardous Waste Operations and Emergency Response (HAZWOPER), 29 CFR. §1910.120(q)(6)(ii), (2009) and/or National Fire Protection Association 472 Standard for Competence of Responders to Hazardous Materials/WMD Incidents, Chapters 5, 6, and 7.

**Online** This course is not available online.

### PER-905 Advanced Radiation Incident Operations (ARIO)

**Description** ARIO is a five-day course that provides participants with the advanced skills necessary to safely respond to and manage incidents involving radiological hazards. Participants apply these skills in tabletop exercises based on realistic radiological incident scenarios, set within the ICS structure.

The course will focus on EOC responsibilities, coordination of the FMTs, data collection, and developing recommendations for protective actions whereas the RERO course will focus on first responder hands-on equipment skills, and responsibilities as members of a field monitoring team during radiological Plume and Ingestion Pathway incidents.

**Audience** Any member of an organized state or local radiological/hazardous materials response team who has responsibility for responding to or managing a radiological incident

**Prerequisite** AWR-160 WMD/Terrorism Awareness for Emergency Responders  
PER-904 Radiological Emergency Response Operations (RERO)  
PER-240 WMD Radiological/Nuclear Responder Operations, or PER-241 WMD Radiological/Nuclear Course for HazMat Technicians

**Online** This course is not available online.

### PER-918 – REP Field Operations Course (RFOC)

**Description** The REP Field Operations course is a 4-day, 32-hour training course offering lectures, hands-on training, and team exercises. Students review, discuss information, and practice skills necessary to effectively respond to an NPP radiological incident. The REP Field Operations course culminates with a final team exercise integrating the field operations knowledge and skills learned during the course.

Topics for this course include:

- Radiological concepts and biological effects of ionizing radiation
- Commercial NPP incident responses

## Attachment XIV-D: FEMA/CDP Courses (Continued)

- Introduction to field operations
- Radiological exposure control – dose limits and dosimeters
- Instruments and technologies
- Early phase air sampling
- Surveying and monitoring
- Intermediate phase sampling
- Demobilization – emergency worker decontamination and checking in dosimetry
- Plume drill and intermediate drill exercises

**Audience** The target audience for this course is any member of an organized State or local radiological FMT that may respond to an incident involving an NPP.

**Prerequisite** AWR-923-W Radiological Emergency Management (REM)  
IS-100 Introduction to the ICS  
IS-200 ICS for Single Resources and Initial Action Incidents  
AWR-317 REP Core Concepts Course (RCCC) (highly recommended)

**Online** This course is not available online.

### TBD – REP Hostile Action-Based (RHAB) Course

**Description** During a Hostile Action-Based (HAB) incident, there are special considerations to consider. This virtual HAB awareness-level webinar will focus on those differences, from a non-HAB incident.

The FEMA/NPD/THD/Radiological Emergency Preparedness (REP) Program training section has developed a 4-hour webinar that will familiarize Offsite Response Organizations (OROs) with 2019 REP Program Manual (RPM) guidance related to hostile action-based offsite response to an incident at a commercial nuclear power plant (NPP). The webinar is meant to support emergency responders' recognition of response planning and preparedness specific to a hostile action-based event.

**Audience** Federal, State, local, and utility emergency responders

**Online** This course is a webinar.

## **XV. Planning Standard P**

### **Responsibility for the Planning Effort: Development, Periodic Review, & Distribution of Emergency Plans**



Responsibilities for plan development and review and for distribution of emergency plans are established, and planners are properly trained. [Regulatory References: 10 CFR 50.47(b)(16); 44 CFR 350.5(a)(16)]

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#### **A. Responsibilities**

1. The Ohio EMA Director has the overall authority and responsibility for radiological emergency planning in the state.
2. The Radiological Branch Chief has the operational authority and responsibility for the State of Ohio's radiological emergency planning.
3. A Radiological Analyst is responsible for the development, maintenance, review, updating, and distribution of the Ohio REP Plan.

#### **B. Training**

1. Personnel with planning responsibilities will receive initial training, at a minimum, with FEMA/CDP's REP Core Concepts and REP Plan Core Concepts.
2. Radiological Analysts will attend REP training courses listed in Attachments XIV-A through XIV-E to develop their abilities in REP planning. Additional classes may be approved through the Radiological Branch Chief.

#### **C. Logistics**

1. Quarterly Reviews
  - a. A Radiological Analyst will perform a quarterly communications test for reviewing and updating contact information.

The review is for contact information in implementing procedures. No contact information is contained in the Ohio REP Plan.
  - b. Each phone number listed in a procedure will be called during the quarterly test to ensure the information is still accurate. If a change is found, the procedure where the contact is reference will be immediately updated.
  - c. Fax machines that are not utilized on a regular basis will be checked quarterly for proper function.

d. Documentation of the quarterly reviews will be retained electronically.

## 2. Annual Reviews

### a. Ohio REP Plan

- i. The Ohio REP Plan is reviewed and updated throughout the year with a final revision published January of each year.
- ii. A comprehensive review includes input from multiple State agencies. Occasionally due to scheduling issues, a less complex review may be performed. A cursory review includes input from the team in Ohio EMA's Radiological Branch.
- iii. Ohio EMA management is provided the Ohio REP Plan for review prior to release.
- iv. Updates may be made after findings from integrated drills, the dry runs and/or the biennial exercises. Planning issues identified during the biennial exercises will be tracked and updated in a timely manner.
- v. The annual revised Ohio REP Plan is provided with the ALC.

### b. Procedures

- i. Procedures are typically reviewed prior to a biennial exercise's dry run. Some years, procedures may be reviewed and updated more than once due to multiple exercises.
- ii. Updates may be made after findings from integrated drills, the dry runs and/or the biennial exercises.
- iii. Planning issues identified during the biennial exercises will be tracked and procedures will be updated in a timely manner.
- iv. Updated and/or reviewed procedures are submitted annually with the ALC.

### c. Maps

#### i. Ohio EMA

- 1) The maps within this document are reviewed on an annual basis and updated when necessary. Any updates will be published in the annual Ohio REP Plan.
- 2) Updates may be made after findings from integrated drills, the dry runs and/or the biennial exercises.
- 3) All maps for a specific NPP are reviewed and updated prior to its biennial exercise, especially those with population numbers involved.
- 4) Any map with population numbers is updated, at a minimum, once the 10-year census numbers have been released.

#### ii. Other state agencies

- 1) Locations of farms, foodstuffs processing facilities, water treatment plants, etc. are annually updated by the responsible state agency.
- iii. Maps are typically created at the time of need. An annual review is not performed on new maps are created for a specific exercise.

- iv. Information regarding the updated and/or review of maps or their basis information will be provided with the ALC.
  - d. Agreements
    - i. LOAs and Memorandum of Understanding (MOUs) are reviewed annually to ensure they are still active and accurate.
    - ii. LOAs and MOUs are updated in coordination with DPS Legal.
    - iii. A date for the review of the LOAs and MOUs and a statement that they have been reviewed for accuracy and completeness of information is provided in the ALC. Updated LOAs and MOUs will be provided with the ALC submission.
  - e. Changes in plans and procedures will typically be identified using change bars. If changes are too extensive, changes will be detailed in the Record of Changes table.
  - f. Each plan and procedures will contain a revision date. In the case of the Ohio REP Plan, if a change is made on a page after release, each individual page with a change will have the date at the bottom updated.
  - g. A Record of Changes will be provided on procedures with a summary of changes to record updates for reference and historical context to preserve the intent of the changes.
- 3. The revised Ohio REP Plan is emailed annually to the agencies and positions found in Attachment XV-A. A read receipt is received when the email is read indicating the agency's receipt of the plan.

# Attachment XV-A: Plan Distribution List

<b>State Agencies</b>
<b>Ohio Department of Agriculture</b>
Director
Chief, Division of Food Safety
Chief, Enforcement Division
Public Information Officer
<b>Ohio Department of Health</b>
Director
Chief, Bureau of Environmental Health & Radiation Protection
Chief, Bureau of Health Preparedness
Chief, Office of Communications
Supervisor, Health Physicist
Supervisor, ODH Laboratory
Bureau of Environmental Health & Radiation Protection Library
<b>Ohio Department of Natural Resources</b>
Director
Staff Officer
<b>Ohio Department of Public Safety</b>
Director
Advisor, Policy & Legislative
Director, Communications
<b>Ohio DPS: Emergency Management Agency</b>
Executive Director
Assistant Director
Administrator, Administrative
Administrator, Operations
Chief, Communications
Chief, Fiscal Branch
Chief, Grants Branch
Chief, Logistics Branch
Chief, Mitigation Branch
Chief, Planning Branch
Chief, Radiological Branch

## Attachment XV-A: Plan Distribution List (Continued)

<b>State Agencies</b>
<b>Ohio DPS: Emergency Management Agency (Continued)</b>
Chief, Recovery Branch
Chief, Regional Operations
Chief, Watch Office
Dose Assessment Room (115)
Executive Room (120)
Joint Information Center (109)
Manager, EOC
Public Information Officer
Radiological Analysts
Resident Radiological Analysts
Supervisor, Central Regional Office
Supervisor, Northeast Regional Office
Supervisor, Northwest Regional Office
Supervisor, Radiological Analysts
Supervisor, Radiological Instrument Maintenance & Calibration Laboratory
Supervisor, Training
<b>Ohio DPS: State Highway Patrol</b>
Superintendent
Columbus Field Operations
Commander, Ashtabula Post (4)
Commander, Bowling Green Post (87)
Commander, Bucyrus District (17)
Commander, Chardon Post (28)
Commander, Findlay District (32)
Commander, Fremont Post (72)
Commander, Hub/STACC
Commander, Lisbon Post (15)
Commander, Sandusky Post (22)
Commander, Toledo Post (48)
Commander, Warren District (78)
Manager, State Dispatch
Supervisor, Columbus Dispatch

## Attachment XV-A: Plan Distribution List (Continued)

<b>Ohio Department of Transportation</b>
Director
Coordinator, Emergency Response
Highway Management, District 4
Operations Engineer, District 11
Operations Engineer, District 2
Roadway Services Manager, District 12
<b>Ohio Environmental Protection Agency</b>
Director
Chief, Division of Drinking & Ground Water (DDGW)
Chief, Division of Environment Response & Revitalization (DERR)
Chief, Division of Environmental Response, Investigation & Enforcement (DERIE)
Chief, Division of Materials and Waste Management (DMWM)
Chief, Division of Surface Water (DSW)
Chief, NE District
Chief, NW District
Environmental Specialist, DERR
<b>Ohio National Guard</b>
Adjutant General
Director, J5
Joint Plans (J55)
<b>Ohio State University Extension</b>
Director
Safety & Health Coordinator
<b>Office of the Governor</b>
Executive Assistant
Press Secretary
<b>Public Utilities Commission of Ohio</b>
Chair
Coordinator, Radiological
Supervisor, Field Staff, Service Monitoring & Enforcement

## Attachment XV-A: Plan Distribution List (Continued)

<b>Risk/Support Counties</b>
<b>Ashtabula County</b>
Director, County Emergency Management Agency
County Commissioners
County Health Department
County Sheriff
<b>Columbiana County</b>
Director, County Emergency Management Agency
Chief Deputy Sheriff
County Commissioners
County Health Department
County Sheriff
<b>Erie County</b>
Director, Homeland Security and Emergency Management
County Commissioners
County Health Department
County Sheriff
<b>Geauga County</b>
Director, Emergency Management Agency
County Commissioners
County Health District
County Sheriff
<b>Lake County</b>
Director, Emergency Management Agency
County Commissioners
County Health Department
County Sheriff
<b>Lucas County</b>
Director, Emergency Management Agency
Operations Officer

## Attachment XV-A: Plan Distribution List (Continued)

<b>Risk/Support Counties</b>
<b>Ottawa County (Continued)</b>
Director, Emergency Management Agency
Deputy Director, Emergency Management Agency
<b>Sandusky County</b>
Director, Emergency Management Agency

<b>50-Mile EPZ Ohio Counties</b>
<b>BVPS Area</b>
Director, Belmont County Emergency Management Agency
Director, Carroll County Emergency Management Agency
Director, Harrison County Emergency Management Agency
Director, Jefferson County Emergency Management Agency
Director, Mahoning County Emergency Management Agency <sup>23</sup>
Director, Portage County Emergency Management Agency <sup>23</sup>
Director, Stark County Emergency Management Agency
Director, Trumbull County Emergency Management Agency <sup>23</sup>
Director, Tuscarawas County Homeland Security and Emergency Management Agency
<b>DBNPS Area</b>
Director, Crawford County Emergency Management Agency
Director, Erie County Emergency Management Agency <sup>24</sup>
Director, Fulton County Emergency Management Agency
Director, Hancock County Emergency Management Agency
Director, Henry County Emergency Management Agency
Director, Huron County Emergency Management Agency
Director, Lorain County Office of Emergency Management Homeland Security <sup>25</sup>
Director, Richland County Emergency Management Agency
Director, Sandusky County Emergency Management Agency <sup>24</sup>
Director, Seneca County Emergency Management Agency

<sup>23</sup> Mahoning, Portage, and Trumbull Counties also lie within the PNPP 50-mile EPZ.

<sup>24</sup> Erie and Sandusky Counties are also listed in the Risk/Host Counties.

<sup>25</sup> Lorain County also lies within the PNPP 50-mile EPZ.

## Attachment XV-A: Plan Distribution List (Continued)

<b>50-Mile EPZ Ohio Counties</b>
<b>DBNPS Area (Continued)</b>
Director, Wood County Emergency Management Agency
Director, Wyandot County Emergency Management Agency
<b>PNPP Area</b>
Director, Cuyahoga County Emergency Management Agency
Director, Lorain County Office of Emergency Management Homeland Security <sup>26</sup>
Director, Mahoning County Emergency Management Agency <sup>27</sup>
Director, Medina County Emergency Management Agency
Director, Portage County Emergency Management Agency <sup>27</sup>
Director, Summit County Emergency Management Agency
Director, Trumbull County Emergency Management Agency <sup>27</sup>

<b>Utilities</b>
<b>Beaver Valley Power Station</b>
Supervisor, Emergency Planning
Senior Nuclear Specialist (Offsite)
<b>Davis-Besse Nuclear Power Station</b>
Supervisor, Emergency Planning
Senior Nuclear Specialist (Offsite)
Station Document Control
<b>Perry Nuclear Power Plant</b>
Supervisor, Emergency Planning
Senior Nuclear Specialist (Offsite)
<b>Energy Harbor</b>
Manager, Emergency Planning
<b>Fermi-2 Nuclear Power Plant (DTE Energy)</b>
Manager, Emergency Planning

<sup>26</sup> Lorain County also lies within the 50-mile DBNPS Planning Area.

<sup>27</sup> Mahoning, Portage, and Trumbull Counties also lie within the 50-mile PNPP Planning Area.

## Attachment XV-A: Plan Distribution List (Continued)

<b>Contiguous Governments</b>
<b>Province of Ontario</b>
Planning Officer, Emergency Management Ontario
<b>State of Michigan</b>
Manager, Training, Exercise & Radiological Unit, Department of State Police, Emergency Management Division
REP Unit Supervisor, Department of Environment, Great Lakes, and Energy
<b>Commonwealth of Pennsylvania</b>
Chief, Nuclear Plants Division, Pennsylvania Emergency Management Agency
Director, Beaver County Emergency Services
<b>State of West Virginia</b>
Director, Hancock County Office of Emergency Management
Manager, REP Program, West Virginia Emergency Management

<b>Federal Agencies</b>
<b>Federal Emergency Management Agency, RII</b>
Technical Hazards Program Specialist
<b>Federal Emergency Management Agency, RIII</b>
Emergency Management Specialist
<b>Federal Emergency Management Agency, RV</b>
RAC Chair, Region V
Supervisory Emergency Management Specialist
<b>Nuclear Regulatory Commission, RI</b>
State Liaison Officer
<b>Nuclear Regulatory Commission, RIII</b>
State Liaison Officer
<b>U.S. Coast Guard</b>
Commander, Ninth District
Marine Safety Unit, Cleveland
Marine Safety Unit, Toledo
Response Unit, Ninth District

## Attachment XV-A: Plan Distribution List (Continued)

<b>Federal Agencies (Continued)</b>
<b>U.S. Coast Guard (Continued)</b>
Sector Commander, Sector Buffalo
Sector Commander, Sector Detroit
<b>U.S. Department of Agriculture – Ohio Farm Service Agency</b>
Director
<b>U.S. Fish and Wildlife</b>
Manager, Ottawa Wildlife Refuge

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## Appendix A: Acronyms

Acronym	Definition
μCi	microCurie
AAR	After Action Report
ALARA	As Low as Reasonably Achievable
ALC	Annual Letter of Certification
AMS	Aerial Measuring System
ANI	American Nuclear Insurers
ARC	American Red Cross
ARIO	Advance Radiological Incident Operations
ASPECT	Airborne Spectral Photometric Environmental Collection Technology
A-Team	Advisory Team for Environment, Food & Health
Bq	Becquerel
BVPS	Beaver Valley Power Station
BWC	Ohio Bureau of Workman's Compensation
CBRN	Chemical, Biological, Radiological & Nuclear
cc	cubic centimeter
CDBG	Community Development Block Grant
CDC	Centers for Disease Control and Prevention
CDE	Committed Dose Equivalent
CDP	Center for Domestic Preparedness
CFR	U.S. Code of Federal Regulations
Ci	Curie
CMAD	Consequence Management Advisory Division
CMHT	Consequence Management Home Team
CMRT	Consequence Management Response Team

<b>Acronym</b>	<b>Definition</b>
CPG	Comprehensive Preparedness Guide
cpm	Counts Per Minute
COVID-19	Coronavirus Disease 2019
CRC	Community Reception Center
CST	Civil Support Team
CTOS	Counterterrorism Operations Support
DAS	Department of Administrative Services
DBNPS	Davis-Besse Nuclear Power Station
DC	Direct Current
DHS	Department of Homeland Security
DIL	Derived Intervention Level
DIR	Disaster Initiated Review
DMTF	Debris Management Task Force
DOC	U.S. Department of Commerce
DOE	U.S. Department of Energy
DOI	U.S. Department of Interior
DOT	U.S. Department of Transportation
DPS	Ohio Department of Public Safety
DRC	Disaster Recovery Center
DRD	Direct Reading Dosimeter
DRL	Derived Response Level
EAL	Emergency Action Level
EAS	Emergency Alert System
ECL	Emergency Classification Level
EMA	Emergency Management Agency
EMAC	Emergency Management Assistance Compact
EMS	Emergency Medical Services
EOC	Emergency Operations Center

<b>Acronym</b>	<b>Definition</b>
EOF	Emergency Operations Facility
EOP	Emergency Operations Plan
EPA	Environmental Protection Agency
EPI	Emergency Public Information
EPZ	Emergency Planning Zone
ERLN	Environmental Response Laboratory Network
ERT	Environmental Response Team
ESF	Emergency Support Function
ETE	Evacuation Time Estimate
FAA	Federal Aviation Administration
FDA	U.S. Federal Drug Administration
FEMA	Federal Emergency Management Agency
FHA	Federal Housing Authority
FMT	Field Monitoring Team
FR	Federal Register
FRMAC	Federal Radiological Monitoring and Assessment Center
FRPCC	Federal Radiological Preparedness Coordinating Committee
ft	feet
FTC	Field Team Center
GE	General Emergency
GELO	Guard Emergency Liaison Officer
GIS	Geographic Information Systems
HAB	Hostile Action-Based
HHS	U.S. Department of Health and Human Services
HOME	HOME Investment Partnerships Program
HUD	Housing & Urban Development
IA	Individual Assistance

<b>Acronym</b>	<b>Definition</b>
ICRP-60	International Commission on Radiological Protection - Publication 60
ICS	Incident Command System
IMAAC	Interagency Modeling and Atmospheric Assessment Center
IPX	Ingestion Pathway Exercise
IZRRAG	Ingestion Zone Recovery and Reentry Advisory Group
J3	OHNG Joint Operations
JIC	Joint Information Center
JIS	Joint Information System
kg	kilogram
KI	Potassium Iodide
LCGHD	Lake County General Health District
LEADS	Law Enforcement Automated Data System
LOA	Letter of Agreement
MARCS	Multi-Agency Radio Communication System
MCL	Maximum Contaminant Level
MEMP	Michigan Emergency Management Plan
MERRTT	Modular Emergency Radiological Response Transportation Training
MHz	MegaHertz
MOU	Memorandum of Understanding
mR/hr	milliroentgen per hour
mRem	milliRem
MS	Microsoft
mSv	milliSievert
N/A	Not Applicable
NARAC	National Atmospheric Release Advisory Center
NCOIC	Non-Commissioned Officer-in-Charge

<b>Acronym</b>	<b>Definition</b>
NFEMP	Michigan Nuclear Facilities Emergency Management Plan
NGO	Non-Governmental Organization
NIMS	National Incident Management System
NNSA	National Nuclear Security Administration
NPP	Nuclear Power Plant
NPPEP	Nuclear Power Plant Emergency Phase
NRC	U.S. Nuclear Regulatory Commission
NRCC	National Response Coordinator Center
NRF	National Response Framework
NRIA	Nuclear/Radiological Incident Annex
NUREG	Nuclear Regulatory Commission Regulation
NVLAP	National Voluntary Laboratory Accreditation Program
OAC	Ohio Administrative Code
OCA	Owner Controlled Area
ODA	Ohio Department of Agriculture
ODAT	Ohio Dose Assessment Team
ODH	Ohio Department of Health
ODH-BEHRP	ODH Bureau of Environmental Health & Radiation Protection
ODH-BHP	ODH Bureau of Health Preparedness
ODH-Comms	ODH Office of Communications
ODH-Lab	ODH Bureau of Public Health Laboratory
ODH-OHO	ODH Office of Health Opportunity
ODNR	Ohio Department of Natural Resources
ODOT	Ohio Department of Transportation
ODRC	Ohio Department of Rehabilitation & Correction
ODSA	Ohio Development Services Agency
OGRIP	Ohio Geographically Referenced Information Program
OHFA	Ohio Housing Finance Agency

<b>Acronym</b>	<b>Definition</b>
Ohio EMA	Ohio Emergency Management Agency
Ohio EPA	Ohio Environmental Protection Agency
OHNG	Ohio National Guard
ORC	Ohio Revised Code
ORO	Offsite Response Organization
OSHP	Ohio State Highway Patrol
OSLD	Optically Stimulated Luminescent Dosimeter
OSU	Ohio State University
PA	Public Assistance
PAD	Protective Action Decision
PAG	Protective Action Guide
PAR	Protective Action Recommendation
pCi	picoCurie
PIO	Public Information Officer
PNPP	Perry Nuclear Power Plant
PPE	Personal Protective Equipment
PRD	Permanent Record Dosimeter
PUCO	Public Utilities Commission of Ohio
R	Roentgen
RAAC	Radiological Accident Assessment Concept Course
RAP	Radiological Assistance Program
RASCAL	Radiological Assessment System for Consequence Analysis
RAT	Radiological Assessment Team
RC	Ohio Revised Code
RCCC	REP Core Concepts Course
RDMC	REP Decision-Makers Course
REA	Radiation Exclusion Area
REAC/TS	Radiological Emergency Assistance Center/Training Site

<b>Acronym</b>	<b>Definition</b>
RECC	REP Exercise Controller Course
REEC	REP Exercise Evaluator Course
rem	Roentgen Equivalent Man
REM	Radiological Emergency Management Course
REP	Radiological Emergency Preparedness
RERO	Radiological Emergency Response and Operations Course
RERT	Radiological Emergency Response Team
REVOG	Reentry Verification and Orientation Center
RFOG	REP Field Operations Course
RHAB	REP Hostile Action-Based Course
RIID	Radioisotope Identification Device
RIM&C	Radiological Instrument Maintenance and Calibration
ROSS	Radiological Operations Support Specialist
RPCC	REP Planning Core Concepts Course
RPM	REP Program Manual
RPPA	REP Post-Plume Awareness Course
RPPP	REP Post-Plume Plan Review Course
RPPR	REP Plan Review Course
RRA	Resident Radiological Analyst
RRHP	Rapid Re-Housing Program
RSF	Recovery Support Function
RTFL	Radiation Task Force Leader
RZ	Restricted Zone
SAE	Site Area Emergency
SAR	Search and Rescue
SBA	Small Business Administration
SMM	Social Media Manager
SOG	Suggested Operating Guideline

<b>Acronym</b>	<b>Definition</b>
SOP	Standard Operating Procedure
SDWA	Safe Drinking Water Act
STAAC	Statewide Terrorism Analysis & Crime Center
SUV	Sports Utility Vehicle
TED	Total Effective Dose
TEDE	Total Effective Dose Equivalent
TFR	Temporary Flight Restriction
TLD	Thermo-Luminescent Dosimeter
URI	Unified RASCAL Interface
URSB	Utility Radiological Safety Board
USACE	U.S. Army Corp. of Engineers
USC	U.S. Code
USCG	U.S. Coast Guard
USDA	U.S. Department of Agriculture
USDA-FSA	U.S. Department of Agriculture - Farm Service Agency
UHF	Ultra-High Frequency
VA	U.S. Department of Veteran Affairs
VHF	Very High Frequency



## Appendix B: Glossary

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### **ACCESS CONTROL**

All activities accomplished for the purpose of controlling entry or reentry into an area that has either been evacuated or is under a sheltering PAD to minimize the radiation exposure of individuals because of radiological contamination. This function is needed to prevent the general public from entering restricted areas (sheltered and/or evacuated) and permitting only emergency workers with essential missions and limited members of the general public to enter.

### **ACCIDENT ASSESSMENT**

The evaluation of the actual and potential consequences of a radiological incident.

### **ACTIVATED**

An EOC or other facility is considered activated as soon as notification of an incident is received and the Director/Commissioner/responsible representative makes the determination to activate the facility. The facility is not considered operational until it is ready to carry out full emergency operations with key decision-makers in place.

### **ADVISORY TEAM FOR ENVIRONMENT, FOOD, AND HEALTH (A-TEAM)**

Includes representatives from the EPA, USDA, HHS (FDA), the CDC, and other Federal agencies as needed. The A-Team, supported by the FRPCC, develops coordinated advice and recommendations on environmental, food, health, and animal health matters for the Incident Command/Unified Command, the Joint Field Office, the Unified Coordination Group, the Federal agency with primary authority, and/or state and local governments, as appropriate. The A-Team uses information provided by the Interagency Modeling and Atmospheric Assessment Center, FRMAC, and other relevant sources. The A-Team makes protective action recommendations not decisions; provides coordinated technical and scientific advice through the state and Federal agency with primary authority; and bases its recommendations on science and best practices.

### **AFTER-ACTION REPORT (AAR)**

Summarizes key exercise-related evaluation information, including the exercise overview and analysis of objectives and core capabilities.

### **ALERT**

An ECL indicating that events are in progress or have occurred which involve an actual or potential substantial degradation of the level of safety of the plant or a security event that involves probable life-threatening risk to site personnel or damage to site equipment because of hostile action. Any releases are expected to be limited to small fractions of the EPA PAG exposure levels.

### **ANNUAL**

Every calendar year, except in cases relevant to 10 CFR 50.54(t) where “annual” means 365 days.

### **ANNUAL LETTER OF CERTIFICATION (ALC)**

Used to facilitate monitoring of REP Program planning and preparedness. Each state that has a REP Program annually submits an ALC to the appropriate FEMA Regional Administrator. The ALC assists FEMA in making reasonable assurance findings and determinations regarding offsite radiological emergency plans/procedures and preparedness.

### **AS LOW AS REASONABLY ACHIEVABLE (ALARA)**

A philosophy followed to achieve making every reasonable effort to maintain exposures to ionizing radiation as far below the dose limits as practical. A practice to ensure consistency with the purpose for which the licensed activity is undertaken, taking into account the state of technology, the economics of improvements in relation to the state of technology, the economics of improvements in relation to benefits to the public health and safety, and other societal and socioeconomic considerations. These means are in relation to utilization of nuclear energy and licensed materials in the public interest.

### **ASSESSMENT**

This is the evaluation and interpretation of radiological measurements and other information to provide a basis for decision-making. Assessments can include projections of offsite radiological impact.

### **BACKGROUND RADIATION**

The natural radiation that is always present in the environment. It includes cosmic radiation which comes from the sun and stars, terrestrial radiation which comes from the Earth, and internal radiation which exists in all living things. The typical average individual exposure in the United States from natural background sources is about 620 millirems per year.

### **BIENNIAL**

Every two calendar years.

**CALIBRATION:** The adjustment, as necessary, of a measuring device such that it responds within the required range and accuracy to known values of input.

### **CHAIN-OF-CUSTODY FORM**

The documentation of the transfer of samples from one organization and individual to another with respect to the name of the organization and individual and dates of acceptance and/or transfer of samples.

### **COMMITTED DOSE**

The dose that will be received over a period of 50 years from the ingestion or inhalation of a particular quantity of a radionuclide or a specific mix of radionuclides.

### **COMMITTED DOSE EQUIVALENT (CDE)**

The dose equivalent to organs or tissues of reference that will be received from an intake of radioactive material by an individual during the 50-year period following ingestion.

### **CONCEPT OF OPERATIONS**

This provides the delineation of an organization's roles and responsibilities and how the organization will function to accomplish those responsibilities.

### **CONTAMINATED**

The condition resulting from the adhesion of radioactive particulates to the surface of structures, objects, soil, water, or living organisms (people, animals, or plants).

### **CONTAMINATION**

Undesirable radioactive material (with a potentially harmful effect) that is either airborne or deposited in (or on the surface of) structures, objects, soil, water, or living organisms (people, animals, or plants).

**CORRECTIVE ACTION**

A concrete, actionable step that is intended to resolve emergency preparedness program gaps and shortcomings experienced in drills, exercises, or actual events.

**CURIE (Ci)**

It is a unit used to measure the intensity of radioactivity in a sample of material, equal to 37 billion ( $3.7 \times 10^{10}$ ) disintegrations per second.

**DECONTAMINATION**

A process used to reduce, remove, or neutralize radiological, chemical, or biological contamination to reduce the risk of exposure.

**DECONTAMINATION STATION**

A building or location suitably equipped and organized where personnel and material are cleansed of chemical, biological, or radiological contaminants.

**DERIVED INTERVENTION LEVEL (DIL)**

Concentration derived from the intervention level of dose at which the FDA recommends consideration of protective measures. DILs correspond to the radiation concentration in food throughout the relevant time period that, in the absence of any intervention, could lead to an individual receiving a radiation dose equal to the PAG, or in international terms, the intervention levels of dose.

**DERIVED RESPONSE LEVEL (DRL)**

The calculated concentration of a particular radionuclide in a particular medium (e.g., soil) that will produce a dose equal to a protective action guide.

**DESIGNEE**

A person assigned by a primary, assisting, or cooperating federal, state, local, or tribal government agency or private entity that has been delegated authority to make decisions affecting that agency's or organization's participation in incident management activities following appropriate consultation with the leadership of that agency.

**DIRECT READING DOSIMETER (DRD)**

A small ionization detection instrument that indicates radiation exposure directly. An auxiliary charging device is usually necessary. DRDs can be read in real time by the user. A DRD is also referred to as a "pocket dosimeter."

**DIRECTION AND CONTROL**

The management of emergency functions within a particular context (e.g., emergency operations center) through leadership and use of authority.

**DOSE**

The quantity of energy absorbed from ionization per unit mass of tissue. The rad is the unit of absorbed dose.

**DOSE RATE**

The radiation dose delivered per unit time. The dose rate may be expressed numerically in rads per second or rads per hour (frequently expressed in rem per hour).

**DOSIMETER**

A small portable instrument (such as a film badge, thermoluminescent dosimeter (TLD), or electronic dosimeter) used to measure and record the total accumulated personal dose of ionizing radiation.

**EARLY PHASE**

The beginning of a radiological incident for which immediate decisions for effective use of protective actions are required and must therefore be based primarily on the status of the radiological incident and the prognosis for worsening conditions. This phase may last from hours to days.

**EMERGENCY CLASSIFICATION LEVEL (ECL)**

One of a set of names or titles established by the NRC for grouping off-normal events or conditions according to potential or actual effects or consequences and resulting onsite and offsite response actions. The four ECLs used for commercial NPPs, in ascending order of severity, are: Unusual Event, Alert, SAE, and GE.

**EMERGENCY OPERATIONS FACILITY (EOF)**

A support facility for the management of overall licensee emergency response (including coordination with Federal, state, local, and tribal government officials), coordination of radiological and environmental assessments, and determination of recommended public protective actions.

**EMERGENCY PLANNING ZONE (EPZ)**

A geographic area, as defined in 10 CFR 50.47(c)(2) (45 FR 55409, August 19, 1980) and 44 CFR 350.7(b) (48 FR 44338, September 28, 1983), surrounding a commercial nuclear power plant for which emergency planning is needed to ensure that prompt and effective actions can be taken by OROs to protect the public health and safety in the event of a radiological incident. The plume pathway EPZ is approximately 10 miles in radius, while the ingestion pathway EPZ has a radius of approximately 50 miles.

**EMERGENCY WORKER**

An individual who has an essential mission to protect the health and safety of the public, and who could be exposed to ionizing radiation from the plume or from its deposition. Emergency workers may or may not be individuals normally exposed to ionizing radiation as a part of their occupations. Ultimately, state and local authorities designate what categories of workers are classified as emergency workers. Emergency workers may include law enforcement personnel, radiation monitoring personnel, firefighters, health services personnel, EOC personnel, and animal care specialists.

**EVACUATION**

The urgent removal of people from an area to avoid or reduce high-level, short-term exposure, from the plume or from deposited radioactivity. Evacuation may be a preemptive action taken in response to a facility condition rather than an actual release.

**EXERCISE**

An instrument to train for, assess, practice, and improve performance in prevention, protection, mitigation, response, and recovery capabilities. Exercises can be used for testing and validating policies, plans, procedures, training, equipment, and interagency agreements; clarifying and training personnel in roles and responsibilities; improving interagency coordination and communications; improving individual performance; identifying gaps in resources; and identifying opportunities for improvement.

**EXPOSURE**

The absorption of radiation or ingestion of a radionuclide. The exposure at a given point is a measurement of radiation in relation to its ability to produce ionization. The unit of measurement of the exposure is the roentgen. A measure of radiation dose received by a person, usually broken down and used to refer to whole-body exposure compared with exposure to the hands only.

**EXPOSURE RATE**

The rate of charge production from ionizing radiation per unit mass of air (e.g., the amount of gamma radiation that an individual would be exposed to in one hour as measured in air), commonly expressed in roentgens per hour (R/h) or milliroentgens per hour (mR/h).

**FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA)**

The agency responsible for establishing Federal policies for and coordinating emergency planning, management, mitigation, and assistance functions of executive agencies. FEMA assists state, local, and tribal government agencies in their emergency planning. Its primary role is one of coordinating Federal, state, local, and tribal governments and volunteer response actions. FEMA is part of the Department of Homeland Security.

**FEDERAL RADIOLOGICAL MONITORING AND ASSESSMENT CENTER (FRMAC)**

A center usually located at an airport near the scene of a radiological emergency from which the DOE Offsite Technical Director conducts the NRF response. This center need not be located near the onsite or Federal-state operations centers as long as its operations can be coordinated with them.

**FIELD MONITORING TEAM (FMT)**

A group used to detect and monitor radiation in the environment (e.g., measure radiation levels in the air).

**FIELD MONITORING TEAM (FMT) COORDINATOR**

The individual who manages the functions of field teams and coordinates data with the dose assessment group located in EOCs and other operational facilities.

**GENERAL EMERGENCY (GE)**

An ECL indicating that events are in progress or have occurred which involve actual or imminent substantial core degradation or melting with potential for loss of containment integrity or hostile action that results in an actual loss of physical control of the facility. Releases can be reasonably expected to exceed EPA PAG exposure levels offsite for more than the immediate site area.

**GEOGRAPHIC INFORMATION SYSTEM (GIS)**

A system designed to capture, store, manipulate, analyze, manage, and present all types of geographical data.

**HOST/SUPPORT JURISDICTION**

A geographical area that is at least 5 miles, and preferably 10 miles, beyond the boundaries of the plume exposure pathway EPZ (e.g., 15-20 miles from the commercial NPP) where functions such as congregate care, radiological monitoring, decontamination, and registration are conducted.

**HOSTILE ACTION**

An act directed toward an NPP or its personnel that includes the use of violent force to destroy equipment, take hostages, and/or intimidate the licensee to achieve an end. This includes attack by air,

land, or water using guns, explosives, projectiles, vehicles, or other devices used to deliver destructive force.

### **INCIDENT**

An occurrence, natural or man-made, which requires a response to protect life or property. Incidents can include major disasters, emergencies, terrorist attacks, terrorist threats, civil unrest, wildland and urban fires, floods, hazardous materials spills, nuclear accidents, aircraft accidents, earthquakes, hurricanes, tornadoes, tropical storms, tsunamis, war-related disasters, public health and medical emergencies, and other occurrences requiring an emergency response.

### **INGESTIBLES**

A transport mechanism for internal dose.

### **INGESTION EXPOSURE PATHWAY**

The principal exposure from this pathway would be from ingestion of contaminated water or foods, such as milk or fresh vegetables. The duration of potential exposure could range in length from hours to months to even years.

### **INGESTION EXPOSURE PATHWAY EMERGENCY PLANNING ZONE**

A geographic area, approximately 50 miles in radius, including and surrounding, a commercial NPP, within which the health and safety of the general public could be adversely affected through the ingestion of water or food which has been contaminated through exposure to radiation, primarily from the deposition of radioisotopes after a radiological incident.

### **INGESTION EXPOSURE PATHWAY EXERCISE**

Exercises include mobilization of state and local government personnel and resources and implementation of emergency plans to demonstrate response capabilities to a release of radioactive materials requiring post-plume phase protective actions within the ingestion exposure pathway EPZ. These exercises are conducted at least once every eight years.

**INGESTION PHASE** – See **INTERMEDIATE PHASE**.

### **INSTITUTIONALIZED INDIVIDUALS**

Individuals who reside in institutions, such as a nursing home or correctional facility, who may need to depend on others for assistance with taking protective actions. An institutionalized individual may or may not have access and functional needs.

### **INTERMEDIATE PHASE**

The period beginning after the source and releases have been brought under control (has not necessarily stopped but is no longer growing) and reliable environmental measurements are available for use as a basis for decisions on protective actions and extending until these additional protective actions are no longer needed. This phase may overlap the early phase and late phase and may last from weeks to months.

### **JOINT INFORMATION CENTER (JIC)**

A location that facilitates operation of the Joint Information System, where personnel with public information responsibilities perform critical emergency information functions, crisis communications, and public affairs functions.

**JOINT INFORMATION SYSTEM (JIS)**

A structured approach to organizing, integrating, and delivering information that ensures that timely, accurate, accessible, and consistent messages can be delivered across multiple jurisdictions and/or disciplines to the media, non-governmental organizations, and the private sector. Critical supporting elements of the JIS include the plans, protocols, procedures, and structures used to provide public information.

**LATE PHASE**

The period beginning when recovery actions designed to reduce radiation levels in the environment to acceptable levels are commenced, and ending when all recovery actions have been completed. This period may extend from months to years. A PAG level, or dose to avoid, is not appropriate for long-term cleanup.

**LETTER OF AGREEMENT (LOA)**

A document executed between two or more parties outlining specific agreements relating to the accomplishment of an action. REP LOAs may cover personnel, equipment, or other types of emergency support, and may take the form of letters, contracts, purchase orders, or other procurement mechanisms.

**LEVEL 1 FINDING**

An observed or identified inadequacy of organizational performance during an assessment activity that could cause a determination that offsite emergency preparedness is not adequate to provide reasonable assurance that appropriate protective measures can be taken in the event of a radiological emergency to protect the health and safety of the public living in the vicinity of an NPP.

**LEVEL 2 FINDING**

An observed or identified inadequacy of organizational performance during an assessment activity that is not considered, by itself, to adversely impact public health and safety.

**LICENSEE**

The utility or organization that has applied for or has received from the NRC (1) a license to construct or operate a commercial nuclear power plant, (2) an early site permit for a commercial nuclear power plant, (3) a combined license for a commercial nuclear power plant, or (4) any other NRC license that is now or may become subject to requirements for radiological emergency planning and preparedness activities.

**MOBILIZED**

When an organization that has completed the activation process and is able to carry out the essential emergency functions, as needed by scenario events and as set forth in emergency response plans/procedures.

**MONITORING**

The act of detecting the presence of radiation and the measurement of radiation levels usually performed with a portable survey instrument.

## **NATIONAL INCIDENT MANAGEMENT SYSTEM (NIMS)**

A systematic, proactive approach to guide all levels of government, non-governmental organizations, and the private sector to work together to prevent, protect against, mitigate, respond to, and recover from the effects of incidents. NIMS provides stakeholders across the whole community with the shared vocabulary, systems, and processes to successfully deliver the capabilities described in the National Preparedness System. NIMS provides a consistent foundation for dealing with all incidents, ranging from daily occurrences to incidents requiring a coordinated Federal response.

## **NATIONAL RESPONSE FRAMEWORK (NRF)**

The guiding principles, roles, and structures that enable all domestic incident response partners to prepare for and provide a unified national response to disasters and emergencies. It describes how the Federal government, states, tribal governments, communities, and private sector work together to coordinate a national response. The framework builds upon the scalable, flexible, and adaptable concepts identified in NIMS, which provides a template for managing incidents.

## **NOTIFICATION**

Distributing an instructional message, either through the EAS or some other system.

## **NOTIFICATION AND MOBILIZATION OF EMERGENCY PERSONNEL**

The transmission of messages to emergency personnel informing them of an incident and directing them to report for emergency duty at their assigned duty stations.

## **NUCLEAR POWER PLANT (NPP)**

A facility licensed by the NRC to use a nuclear reactor to produce electricity.

## **NUCLEAR/RADIOLOGICAL INCIDENT ANNEX (NRIA)**

This document provides guidance and serves as a reference for federal agency planning efforts involving nuclear/radiological incidents. Other stakeholders (e.g., local, state, tribal, territorial, and insular area governments; NGOs; voluntary agencies; and the private sector) engaged in their own planning will find this document useful in enhancing their understanding of how the NRIA will be implemented and how their planning efforts can be complementary.

## **NUCLEAR REGULATORY COMMISSION (NRC)**

The Federal agency that regulates commercial NPPs and other uses of nuclear materials, such as in nuclear medicine, through licensing, inspection, and enforcement of its requirements.

## **OCCUPATIONAL DOSE**

The internal and external dose of ionizing radiation received by workers in the course of employment in such areas as fuel cycle facilities, industrial radiography, nuclear medicine, radiological materials inspectors, and NPPs. These workers are exposed to varying amounts of radiation, depending on their jobs and the sources with which they work. The NRC requires its licensees to limit occupational exposure to 5,000 mrem per year. Occupational dose does not include the dose received from natural background sources, doses received as a medical patient or participant in medical research programs, or “second-hand doses” received through exposure to individuals treated with radioactive materials.

## **OFFSITE**

Beyond the boundaries of the owner-controlled area around a commercial nuclear power plant.

**OFFSITE RESPONSE ORGANIZATION (ORO)**

Any state or local governmental organization; private or voluntary organization; that is responsible for carrying out emergency response functions during a radiological emergency.

**ONSITE**

The owner-controlled area of a commercial nuclear power plant.

**OPERATIONAL**

The status of a facility (e.g., EOC, EOF, JIC, laboratory, etc.) when all key decision-makers, as identified in plans/procedures, are at their duty stations and capable of performing all emergency functions assigned to that facility.

**OWNER CONTROLLED AREA (OCA)**

All areas contiguous to the commercial NPP that are owned or leased by the licensee (or by any of its associated business units) over which the licensee exercises control. The OCA is usually larger than, and encompasses, the exclusion area.

**PERMANENT READING DOSIMETER (PRD)**

A device designed to be worn by a single individual for the assessment of radiation dose from external sources of radiation and evaluated by a processor accredited by the NVLAP.

**PLAN ISSUE**

An observed or identified inadequacy in the ORO's emergency plan/implementing procedures, rather than in the ORO's performance.

**PLANS/PROCEDURES**

Includes radiological emergency preparedness and response plans that are associated with implementing procedures and other supporting and referenced materials. FEMA may review all of these documents to the extent necessary in order to determine whether they meet the intent of the requirements. FEMA uses the generic term "plans/ procedures" specifically for flexibility. OROs may either incorporate procedural detail into the main plans or into separate procedural documents at its discretion.

**PLUME**

Generally, a gaseous atmospheric release from an NPP, from a radiological incident, which may contain radioactive noble gases and volatile solids. While emergency plans/procedures must recognize the very low probability that particulates could be released in a serious incident, primary emphasis is given to the development of protective actions against the release of noble gases and volatiles, such as radio-iodines. This cloud is not visible to the eye, but can be measured, or "seen" with radiation measurement equipment.

**PLUME EXPOSURE PATHWAY**

The means by which whole body radiation exposure occurs as a result of immersion in a gaseous release of radioactive material. The principal exposure sources from this pathway are: (a) whole body external exposure to gamma radiation from the plume and from deposited materials, and (b) inhalation exposure from the passing radioactive plume. The duration of principal potential exposures could range in length from 30 minutes to days.

### **PLUME EXPOSURE PATHWAY EPZ**

A geographic area, approximately 10 miles in radius, including and surrounding a commercial NPP within which the health and safety of the general public could be adversely affected by direct whole body external exposure to gamma radiation from the plume and from deposited materials, as well as inhalation exposure from the passing radioactive plume during a radiological incident.

### **PLUME EXPOSURE PATHWAY EXERCISE**

These exercises are conducted biennially. These exercises include mobilization of licensee, state, and local government personnel and resources and implementation of emergency plans to demonstrate response capabilities within the plume exposure pathway EPZ.

### **POTASSIUM IODIDE (KI)**

A prophylactic compound containing a stable (e.g., non-radioactive) form of iodide that can be used effectively to block the uptake of radioactive iodine by the thyroid gland in a human being. Commonly referred to as a radioprotective drug.

### **PRECAUTIONARY PROTECTIVE ACTION**

Any preventive or emergency protective actions implemented without the verification of radionuclide measurements by field monitoring or laboratory analysis.

### **PRIVATE SECTOR ORGANIZATION**

An industry group or entity, volunteer group, quasi-governmental body, etc. having a role in emergency planning and preparedness.

### **PROCEDURES**

An organization's documented implementing instructions for managing its internal response to emergencies and coordinating its external response with other organizations. The term "procedures" as used in this document includes implementing procedures, standard operating procedures, administrative procedures, maintenance procedures, and testing procedures.

### **PROJECTED DOSE**

The prediction of the dose that a population or individual could receive.

### **PROTECTIVE ACTION**

An action taken to avoid or reduce projected dose, isolate food to prevent its introduction into commerce and to determine whether condemnation or other disposition is appropriate, and/or prevent or reduce contamination of milk, food, and drinking water such as covering water sources and providing dairy cows with stored feed.

### **PROTECTIVE ACTION GUIDES (PAG)**

The projected dose to an individual, resulting from a radiological incident at which a specific protective action to reduce or avoid that dose is warranted.

### **PROTECTIVE ACTION RECOMMENDATION (PAR)**

An advisement from an NPP licensee and OROs with responsibilities to conduct radiological accident assessment to state and local government officials, concerning emergency response measures that should be taken to protect the public from exposure to radiation.

## **PUBLIC INFORMATION**

Information provided to the general public on a periodic basis concerning what they should know about radiation and how to respond to a radiological emergency. This would include topics such as educational information about radiation, who to contact for additional information, and what their actions should be in an actual emergency.

## **RADIATION WORKER**

An individual who might come into contact with radioactive materials as a result of the incident and whose job assignment may be inside or outside the plume EPZ.

## **RADIOACTIVITY**

The spontaneous decay or disintegration of an unstable atomic nucleus usually accompanied by the emission of ionizing radiation, generally alpha or beta particles, often accompanied by gamma rays from the nuclei of an unstable isotope.

## **RADIOISOTOPE**

An unstable isotope of an element that decays or disintegrates spontaneously, emitting radiation. Approximately 5000 natural and artificial radioisotopes have been identified.

## **RADIONUCLIDE**

A radioactive isotope of a particular element.

## **REASONABLE ASSURANCE**

A determination that NRC licensee or applicant onsite plans and state, local, and tribal government and utility offsite plans and preparedness are adequate to protect public health and safety in the emergency planning areas of a commercial NPP.

## **RECOVERY**

The process of reducing radiation exposure rates and concentrations of radioactive material in the environment to acceptable levels for return by the general public for unconditional occupancy or use after the emergency phase of a radiological emergency. More broadly, recovery is accomplished through the timely restoration, strengthening, and revitalization of infrastructure, housing, and a sustainable economy, as well as the health, social, cultural, historic, and environmental fabric of communities affected by a catastrophic incident.

## **RECOVERY PLAN**

A plan to restore an incident-affected area or community.

## **REENTRY**

Workers or members of the public going into a restricted zone on a temporary basis under controlled conditions.

## **RELEASE**

Escape of radioactive materials into the environment.

## **RELOCATION**

The removal or continued exclusion of people (households) from contaminated areas to avoid chronic radiation exposure.

**REOCCUPANCY**

The return of households and communities to relocation areas during the cleanup process, at radiation levels acceptable to the community.

**RESTRICTED ZONE (RZ)**

An area of controlled access from which the population has been evacuated, relocated, or sheltered-in-place.

**RETURN:**

Permanent resettlement in evacuation or relocation areas with no restrictions, based on acceptable environmental and public health conditions.

**ROENTGEN (R)**

A unit of exposure of gamma (or X-ray) radiation in field dosimetry. One roentgen is essentially equal to one rad. A unit for measuring the amount of radiation energy imparted to a volume of air. The roentgen can be used only to measure X-rays or gamma rays.

**ROENTGEN EQUIVALENT MAN (rem)**

The unit of dose of any ionizing radiation that produces the same biological effect as a unit of absorbed dose of ordinary X-rays. A unit of dose for measuring the amount of ionizing radiation energy absorbed in biological tissue.

**RUMORS**

Information circulated by individuals and organizations during an emergency that may or may not be true.

**SAMPLING**

Collecting specimens of materials (e.g., particles or radioiodine in the air, animal feed, vegetation, water, soil, or milk) at field locations.

**SAMPLING TEAM**

A group used to detect and monitor radiation in the environment (e.g., measure radiation levels in water, vegetation, soil, etc.).

**SHELTER-IN-PLACE**

A protective action that includes going indoors listening to an EAS radio or television station, closing all windows and doors, closing exterior vents, and turning off heating and air conditioning equipment using outside air.

**SITE AREA EMERGENCY (SAE)**

An ECL indicating that events are in progress or have occurred which involve an actual or likely major failure of plant functions needed for protection of the public or hostile action that results in intentional damage or malicious acts: 1) toward site personnel or equipment that could lead to the likely failure of; or 2) prevents effective access to equipment needed for the protection of the public. Any releases are not expected to result in exposure levels which exceed EPA PAG exposure levels beyond the site boundary.

**SUB-AREA**

A pre-designated geographic subdivision of the plume exposure pathway EPZ. In some plans/procedures.

**THERMOLUMINESCENT DOSIMETER (TLD)**

A type of dosimetry badge used to measure an individual's level of exposure to ionizing radiation. It is characteristic of thermoluminescent material that radiation produces internal changes that cause the material, when subsequently heated, to give off a measurable amount of light directly proportional to the radiation dose. This type of dosimeter cannot be read directly by the wearer; it must be read by a laboratory.

**TOTAL EFFECTIVE DOSE EQUIVALENT (TEDE)**

The sum of the deep dose equivalent (for external exposures) and for committed effective dose equivalent (for internal exposures).

**TRAFFIC CONTROL**

All activities accomplished for the purpose of facilitating the evacuation of the general public in vehicles along specific routes.

**TRANSIENT POPULATION**

A person or persons who do not permanently reside in the plume exposure pathway EPZ, but may be present during an emergency.

**TURN-BACK VALUES**

Accumulated exposure or exposure rates at which the emergency or radiation worker should leave the area without further consultation or direction.

**UNUSUAL EVENT**

An ECL indicating that events are in progress or have occurred which indicate a potential degradation of the level of safety of the plant or indicate a security threat to facility protection. No releases of radioactive material requiring offsite response or monitoring are expected unless further degradation of safety systems occurs.

**WHOLE BODY COUNTER**

Detection device that measures internal contamination.

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# Appendix C: Ohio Implementation of the 2017 US EPA Protective Action Guide (PAG) Manual

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## Appendix C – Ohio Implementation of the 2017 US EPA Protective Action Guide (PAG) Manual

The 2017 "EPA PAG Manual: Protective Action Guides and Planning Guidance for Radiological Incidents" was published in the Federal Register on January 19, 2017, to provide guidance to the states on protective actions in response to a nuclear power plant and other radiological incidents. In the 2017 PAG Manual, there are some substantial changes, deletions, as well as additional planning guidance. The Ohio Department of Health (ODH), Ohio Environmental Protection Agency (Ohio EPA), and the Ohio Emergency Management Agency (Ohio EMA) have reviewed the 2017 PAG manual and have made the following recommendations for implementation of the guidance in response to a nuclear power plant emergency in Ohio.

The 2017 PAG Manual states that it serves only as guidance and that it does not preclude a state from setting their own guidelines.

Ohio will adopt individual parts of the 2017 PAG Manual as follows:

**The 2017 PAG Manual now offers guidance and protective actions for all types of radiological incidents.**

- Ohio continues to use the State of Ohio Radiological Emergency Preparedness (REP) for nuclear power plants and is developing plans for other types of radiological incidents in Ohio.

**The 2017 PAG Manual has changed the basis for dosimetry to the recommendation of International Commission on Radiological Protection (ICRP) Publication 60.**

Extensive planning and cooperation with the commercial nuclear power plant utilities is required to make this change. In discussions with the nuclear power plant utility in Ohio, they have indicated plans of changing to ICRP-60 in the future, with a date of implementation in January 2025.

- ODH will adopt ICRP-60 dosimetric methods in conjunction with the utility as stated above. To remain on this timeline, plan edits need to be submitted by October 1, 2024.
- ODH will adopt ICRP-60 for the emergency phase one-time emergency dose. Occupational dose, after the emergency phase, will comply with the agreement state rules (RC 3748) and continue to be based on 10 CFR Part 20.

**The 2017 PAG Manual removed organ dose-based evacuation thresholds.**

The 2017 PAG Manual removes the 5 rem child thyroid evacuation criteria as threshold for recommending evacuation of an impacted population. This change is recommended because of the new calculations and weighting factors with the ICRP-60 model for determining dose.

- Ohio will remove the 5 rem child thyroid dose based evacuation criteria when the ICRP-60 model is used for determining emergency dose in January 2025.

**The 2017 PAG Manual removed the intermediate phase relocation PAG of 5 rem over 50 years to avoid confusion with long-term clean-up.**

The 2013 Interim PAG Manual removed the intermediate phase relocation PAG of 5 rem over 50 years for relocation.

- Ohio removed the 5 rem relocation PAG over 50 year time period, in 2015.

**The 2017 PAG Manual allows Shelter-in-place for special populations up to 10 rem Total Effective Dose (TED).**

The 2017 PAG Manual suggests special populations may shelter-in-place up to 10 rem TED and take Potassium Iodide (KI) when projections indicate 5 rem child thyroid dose will be exceeded.

Under the current Ohio REP plan, the county EMA does not treat special populations differently from the general population when providing the evacuation decision for the public.

- Ohio does not adopt the shelter-in-place for special populations up to 10 rem TED. However, Ohio can re-evaluate the 10 rem TED if there is a competing issue impacting public health.

**The 2017 PAG Manual suggests using the Food and Drug Administration's (FDA) 2001 Guidance for recommending Potassium Iodide (KI) at 5 rem child thyroid dose as a tiered approach.**

The 2017 PAG manual has three tiers – one for individuals ages 40+, one for individuals aged 18 – 40, and one for pregnant women, adolescents, and children. The Ohio Department of Health, per its KI Directive, incorporated taking KI at 5 rem child thyroid as a supplemental protective action after guidance was published by FDA in 2001. However, ODH does not apply a tiered approach for the KI recommendation. ODH recommends taking KI for all individuals at a projected dose of 5 rem child thyroid.

- Ohio does not support a tiered approach.

**The 2017 PAG Manual suggests different surface contamination control limits.**

The 2017 PAG manual proposes a recommended level for surface contamination at monitoring station be changed to 2 times (2) the existing background value. The FEMA REP-21 and FEMA REP-22 guidance for control of surface contamination in the Radiological Emergency Preparedness (REP) program for a nuclear power plant is 300 count per minute (cpm) above background.

- Ohio continues to follow the FEMA REP guidance of 300 cpm above background surface contamination control limits for nuclear power plant events.

Ohio recommends using 2 times background as guidance for surface contamination control for other types of radiological incidents. **The 2017 PAG Manual suggests a two-tier drinking water PAG recommendation of 100 mrem for pregnant women and children and 500 mrem for all others and returning to compliance with the Safe Drinking Water Act (SDWA) levels of 4mrem/year within the year.**

To allow flexibility and allow assessment during an incident:

- Ohio will evaluate the scope of the incident, community needs, risk of dehydration in extreme heat and the availability to provide alternative water to determine whether there is a need to refer to the PAG manual and implement standards other than the SDWA level of 4 mrem/year.
- Ohio may choose to implement a two-tiered advisory level as identified in the guidance or a conservative one tier approach using, the lowest derived response level (DRL) as identified in table 4-3 of the PAG manual. Ohio's experience has been that two-tiered response levels create confusion and result in the public following the most restrictive guidance.
- Another option Ohio may choose is an interim standard lower than the PAG and higher than the SDWA standard as determined with coordination from state partners.

**The 2017 PAG Manual suggests ideas for planning guidance in the Recovery Phase.**

Chapter 5 provides planning guidance for the long-term cleanup process. Cleanup goals and strategies are to be determined as decision-makers and stakeholders gain an understanding of all relevant factors.

- Ohio continues to add guidance for the Post-Plume Phase portion of the Ohio REP Manual for future revisions as it is developed.

ODH W. Gene Phillips 9/11/23  
Bureau Environmental Health and Radiation Protection Chief Signature

Ohio EPA Jessica M. Kuenzli 09/22/2023  
Deputy Director, Business and Regulatory Affairs Signature

Ohio EMA C. Galy 9/22/2023  
Radiological Branch Chief Signature

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## Appendix D: References<sup>28</sup>

### 1. Federal

- a. DHS
  - i. National Response Framework, October 28, 2019
  - ii. Nuclear/Radiological Incident Annex to the Response and Recovery Federal Interagency Operational Plan, May 2023
- b. DOE
  - i. FRMAC Assessment Manual, Volume 2, Overview and Methods, SAND2023-04457R, May 2023
  - ii. FRMAC Assessment Manual, Volume 3, Pre-assessed Default Scenarios, SAND2023-04459R, May 2023
  - iii. FRMAC Operations Manual, DOE/NV/25946—980, May 2010
  - iv. FRMAC Monitoring and Sampling Manual, Volume 1, Revision 3, Monitoring Division Operations, April 2019
  - v. FRMAC Monitoring and Sampling Manual, Volume II, Revision 3, Radiation Monitoring and Sampling, January 2021
- c. EPA
  - i. Manual of Protective Action Guides and Protective Actions for Nuclear Incidents, EPA-400-R-92-001, May 1992
  - ii. PAG Manual: Protective Action Guides and Planning Guidance for Radiological Incidents, March 2013
  - iii. PAG Manual: Protective Action Guides and Planning Guidance for Radiological Incidents, EPA-400/R-17/001, January 2017
- d. FDA
  - i. Accidental Contamination of Human and Animal Feeds: Recommendations for State and Local Agencies, August 13, 1998
  - ii. Guidance on Potassium Iodide as a Thyroid Blocking Agent in Radiation Emergencies, 2001
- e. FEMA
  - i. Contamination Monitoring Guidance for Portable Instruments Used for Radiological Emergency Response to Nuclear Power Plant Accidents, FEMA-REP-22, October 2002

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<sup>28</sup> NUREG-0654/FEMA-REP-1 R2 Criterion P.6

- ii. Radiological Emergency Preparedness Program Manual, FEMA P-1028, December 2019
- f. NRC/FEMA
  - i. Emergency Response Resources Guide for Nuclear Power Plant Emergencies, NUREG-1442/FEMA-REP-17, Rev. 1, July 1992
  - ii. Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants, NUREG-0654/FEMA-REP-1, Rev. 2, December 2019
  - iii. Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants, NUREG-0654/FEMA-REP-1, Rev. 1, Supplement 3, November 2011
- g. U.S. Code (USC)
  - i. 42 U.S.C. § 2210
  - ii. 42 U.S.C. § 5121 et seq.
- h. U.S. Code of Federal Regulations (CFR)
  - i. 10 CFR Part 50, App. E
  - ii. 44 CFR Part 350, App. E

## **2. State**

- a. ODA, Radiological Emergency Information for Food Producers, Processors, and Distributors, 2023
- b. ODH KI Directive 10-BEHRP-01, June 2018
- c. Ohio Administrative Code (OAC)
- d. Ohio Revised Code (ORC)
- e. State of Ohio Emergency Operations Plan
- f. State of Ohio RadResponder Concept of Operations Plan

## **3. Utility**

- a. Beaver Valley Power Station Emergency Preparedness Plan
- b. Beaver Valley Nuclear Power Station, Development of Evacuation Time Estimates; KLD Engineering, P.C., August 29, 2022
- c. Davis-Besse Nuclear Power Station Emergency Preparedness Plan
- d. Davis-Besse Nuclear Power Station, Development of Evacuation Time Estimates; KLD Engineering, P.C., August 26, 2022
- e. Emergency Plan for Perry Nuclear Power Plant Docket Nos. 50-440
- f. Perry Nuclear Power Plant, Development of Evacuation Time Estimates; KLD Engineering, P.C., May 9, 2022

#### **4. Contiguous Governments**

- a. Commonwealth of Pennsylvania, Emergency Operations Plan, Annex E: Radiological Emergency Response to Nuclear Power Plant Incidents, 2002
- b. Michigan Department of Environment, Great Lakes, and Energy, Nuclear Facilities Emergency Response Plant (NFEMP), 2021
- c. Michigan State Police/Emergency Management Homeland Security Division, Publication 101, Michigan Emergency Management Plan (MEMP), 2018
- d. Ontario Provincial Nuclear Emergency Response Plan
  - i. Master Plan, 2017
  - ii. Implementing Plan for a Transborder Nuclear Emergency, 2011
- e. West Virginia Radiological Emergency Preparedness Plan, 2018

#### **5. County**

- a. Ashtabula County Radiological Emergency Response Plan, 2024
- b. Beaver Valley Power Station Radiological Emergency Response Plan – Columbiana County, 2024
- c. Geauga County Department of Emergency Services Radiological Emergency Response Plan for an Emergency at the Perry Nuclear Power Plant, 2024
- d. Lucas County Radiological Emergency Response Plan, 2024
- e. Ottawa County Radiological Emergency Response Plan, 2024
- f. Radiological Emergency Response Plan for an Emergency at the Perry Nuclear Power Plant – Lake County Emergency Management Agency, 2024

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## Appendix E: Letters of Agreement<sup>29</sup>

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1. Energy Harbor
2. Federal Aviation Administration, Cleveland Air Route Traffic Control Center
3. Michigan State Police, Emergency Management Division
4. ODH-Laboratory
5. ODNR
6. Pennsylvania EMA
7. Province of Ontario
8. USCG
9. USDA-FSA
10. West Virginia Office of Emergency Services

Letters of Agreement are on file at the Ohio Emergency Management Agency.

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<sup>29</sup> NUREG-0654/FEMA-REP-1 R2 Criterion A.4.iv

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## Appendix F: State Procedures<sup>30</sup>

<b>1. Ohio Department of Agriculture</b>		
	<b>Procedure</b>	<b>Section(s)</b>
a.	SOP-01 Produce (Fruit and Vegetables) Sampling	VIII, XII
b.	SOP-02 Leafy Vegetation Sampling	VIII, XII
c.	SOP-03 Sampling Procedure for Animal Feed and Grain	VIII, XII
d.	SOP-04 Meat and Meat Products Sampling	VIII, XII
e.	SOP-05 Poultry and Poultry Products Sampling	VIII, XII
f.	SOP-06 Egg Sampling	VIII, XII
g.	SOP-07 Milk Sampling	VIII, XII
h.	SOP-08 Honey Sampling	VIII, XII

<b>2. Ohio Department of Health</b>		
	<b>Procedure</b>	<b>Section(s)</b>
a.	HEA5413 Emergency Worker Dose Increase Worksheet	I, X
b.	ODH-SOP-PWS-0001 IZRRAG Event – Private Water Systems Program Standard Operating Procedure	VIII, XII
c.	RAD 1 – Sample Receiving	VII
d.	RAD 2 – Identification of Gamma-Ray Emitting Radionuclides Using High-Purity Germanium Detector	VII
e.	RAD 3 – Gross Alpha and Beta (Filter Paper/Smear/Wipe)	VII
f.	RAD 4 – Gross Beta Activity in Water	VII
g.	RAD 5 – Gross Alpha Activity in Water by Co-precipitation	VII
h.	RAD 6 – Tritium in Water	VII

<sup>30</sup> NUREG-0654/FEMA-REP-1 R2 Criterion P.7

<b>2. Ohio Department of Health</b>		
	<b>Procedure</b>	<b>Section(s)</b>
i.	RAD-REP-0349 ODH Dose Assessment Team (ODAT) Systems Operator: Emergency & Intermediate Phases	I, III, VIII, IX, XII
j.	RAD-REP-0350 ODAT Group Supervisor/Unit Leader: Emergency Phase	I, III, VIII, IX, XII
k.	RAD-REP-0351 ODAT Quality Assurance (QA) Systems Operator: Emergency & Intermediate Phases	I, III, VIII, IX, XII
l.	RAD-REP-0352 ODAT Informal Line: Emergency Phase	I
m.	RAD-REP-0353 ODAT Utility EOF Liaison: Emergency Phase	I, II, III
n.	RAD-REP-0354 ODAT County EOC Liaison: Emergency Phase	I, III
o.	RAD-REP-0355 Field Sample Screening Station: Radiological Response	I, III, VIII
p.	RAD-REP-0356 JIC Radiological Subject Matter Expert (SME): Emergency Phase	I, VI
q.	RAD-REP-0357 ODAT State RadResponder Coordinator: Emergency & Intermediate Phase	I
r.	RAD-REP-0358 IZRRAG Chair/Assistant Chair: Intermediate Phase	XII
s.	RAD-REP-0360 ODH IZRRAG Health Physics Subject Matter Expert (HP-SME): Intermediate Phase	XII
t.	RAD-REP-0362 HP-SME Support to the ODH Radiochemistry Laboratory	II, XII
u.	RAD-REP-0361 IZRRAG Communicator: Intermediate Phase	XII
v.	RAD-REP-0365 Radiological Environmental Monitoring Manual – Soil Counting Procedure	VIII, XII

<b>3. Ohio Department of Natural Resources</b>		
	<b>Procedure</b>	<b>Section</b>
a.	Radioactive Sampling Guidelines for Fish and Wildlife	I, VIII, XII

<b>4. Ohio Emergency Management Agency</b>		
	<b>Procedure</b>	<b>Section</b>
a.	101 – Decision to Activate Process	I, IV, VII

<b>4. Ohio Emergency Management Agency</b>		
	<b>Procedure</b>	<b>Section</b>
b.	104 – EOC Staffing	I
c.	105 – Initial Activation Actions	I, IV
d.	650 – Radiological Assessment Branch Director	III, V, VIII
e.	653 – Assessment Room Activation	IV
f.	657 – FMT Coordinator	I, VII, VIII
g.	658 – FMT Member	I, VIII
h.	659 – Dosimetry Coordinator	VIII
i.	660 – FMT Courier	VIII
j.	663 – FTC Coordinator	VIII
k.	666 – Executive Room Liaison	I, III, VI, VI, XIII, IX, XII
l.	669 – Lake Erie Restriction and Clearance (ODNR)	I, III, IV, IX, X
m.	670 – Executive Room Activation	IV
n.	671 – Executive Room	I, III, VI, VI, XIII, IX, XII
o.	NPCT 1-5 Communications Tests	XIII
p.	State EOC Concept of Operations	I, VII
q.	Watch Notification Protocol	I, IV

<b>5. Ohio Environmental Protection Agency</b>		
	<b>Procedure</b>	<b>Section</b>
a.	Drinking Water Sampling (Deposition) Guidelines During a Nuclear Power Plant Incident (Ohio EPA)	I, VIII, XII
b.	FMT Communicator (Ohio EPA)	I, VIII
c.	Ohio Environmental Protection Agency Radioactive Sampling Guidelines for Hard Surfaces	VIII

<b>5.</b>	<b>Ohio Environmental Protection Agency</b>	
	<b>Procedure</b>	<b>Section</b>
d.	Ohio Environmental Protection Agency Radioactive Sampling Guidelines for Snow	I, VIII, XII
e.	Ohio Environmental Protection Agency Radioactive Sampling Guidelines for Surface Water	I, VIII, XII
f.	Ohio Environmental Protection Agency Radioactive Sampling Guidelines for Vegetation	I, VIII, XII
g.	Soil Sampling Guidelines (Ground Deposition) Guidelines During a Nuclear Power Plant Incident (Ohio EPA)	I, VIII, XII



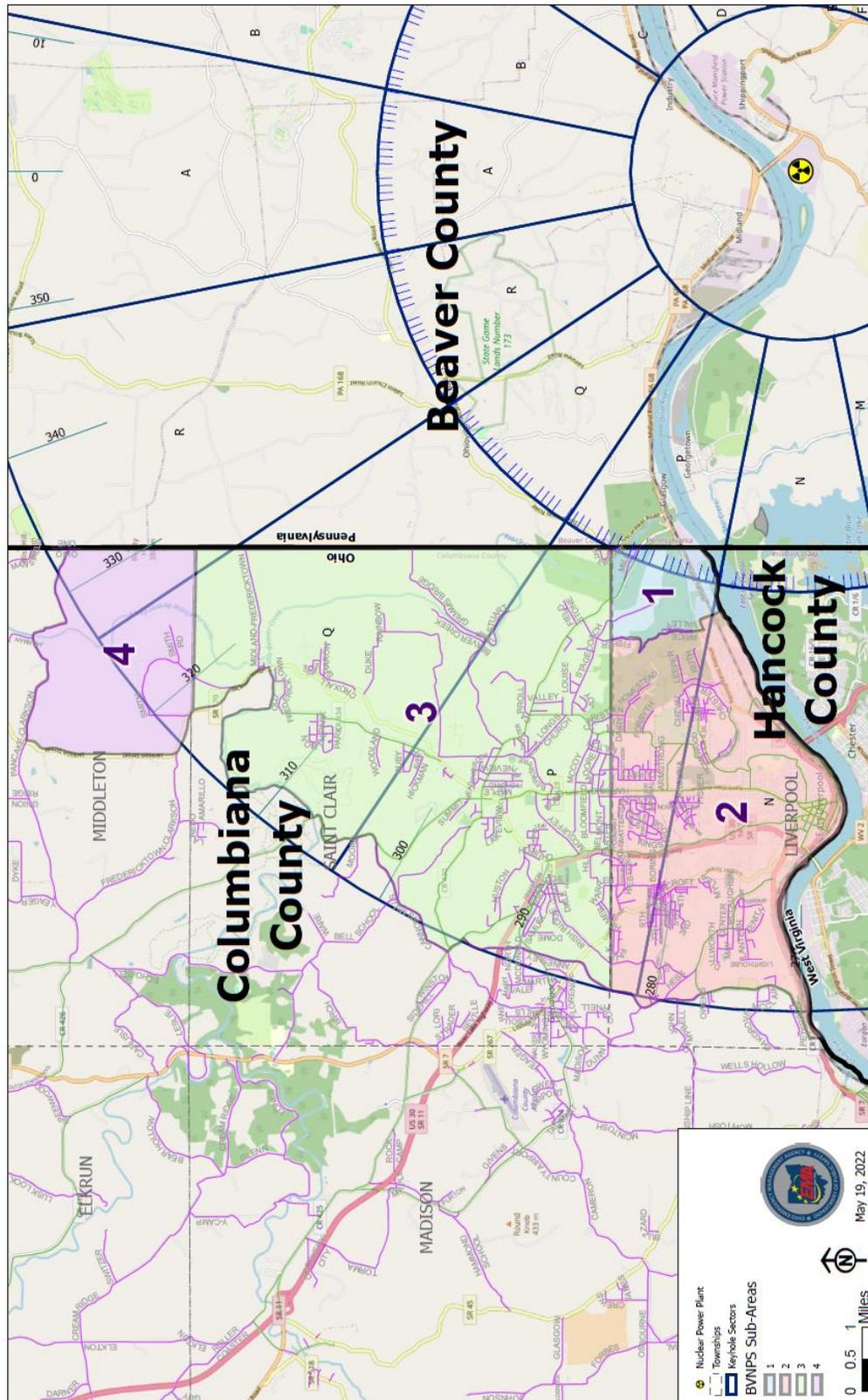
## **Appendix G: BVPS Maps<sup>31</sup>**

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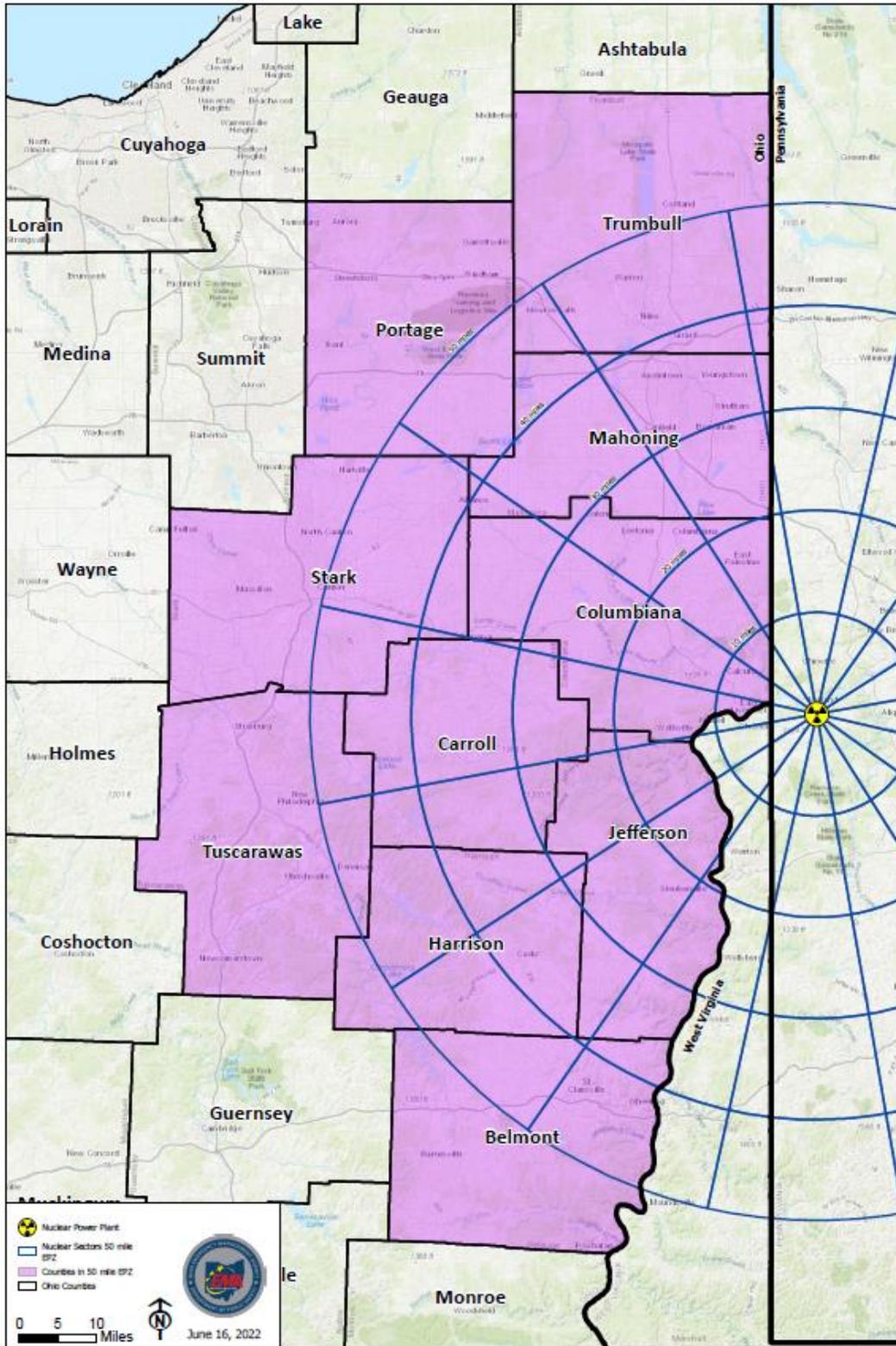
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<sup>31</sup> NUREG-0654/FEMA-REP-1 R2 Criterion J.10

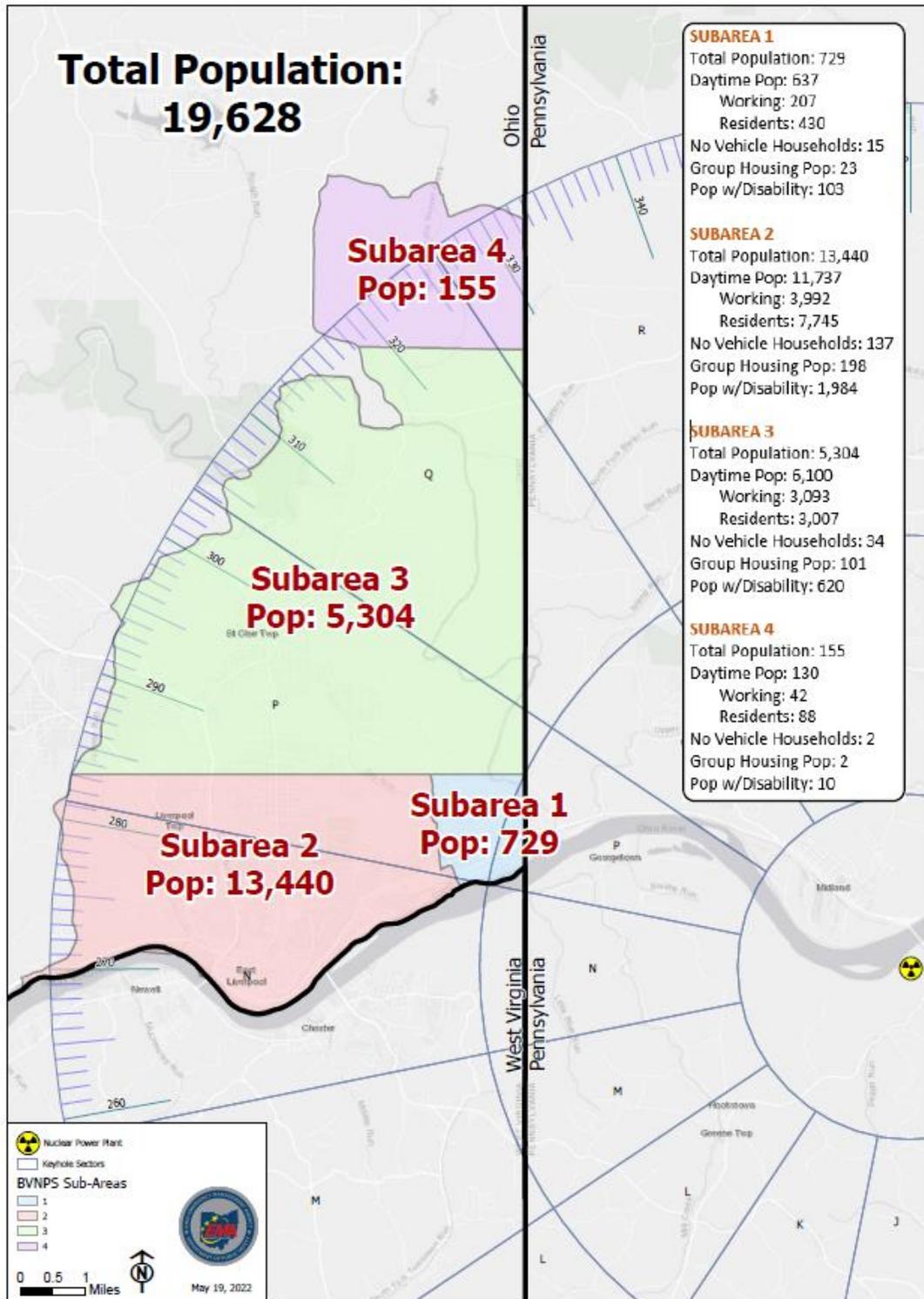
# G.1: BVPS 10-mile EPZ Sub-Areas



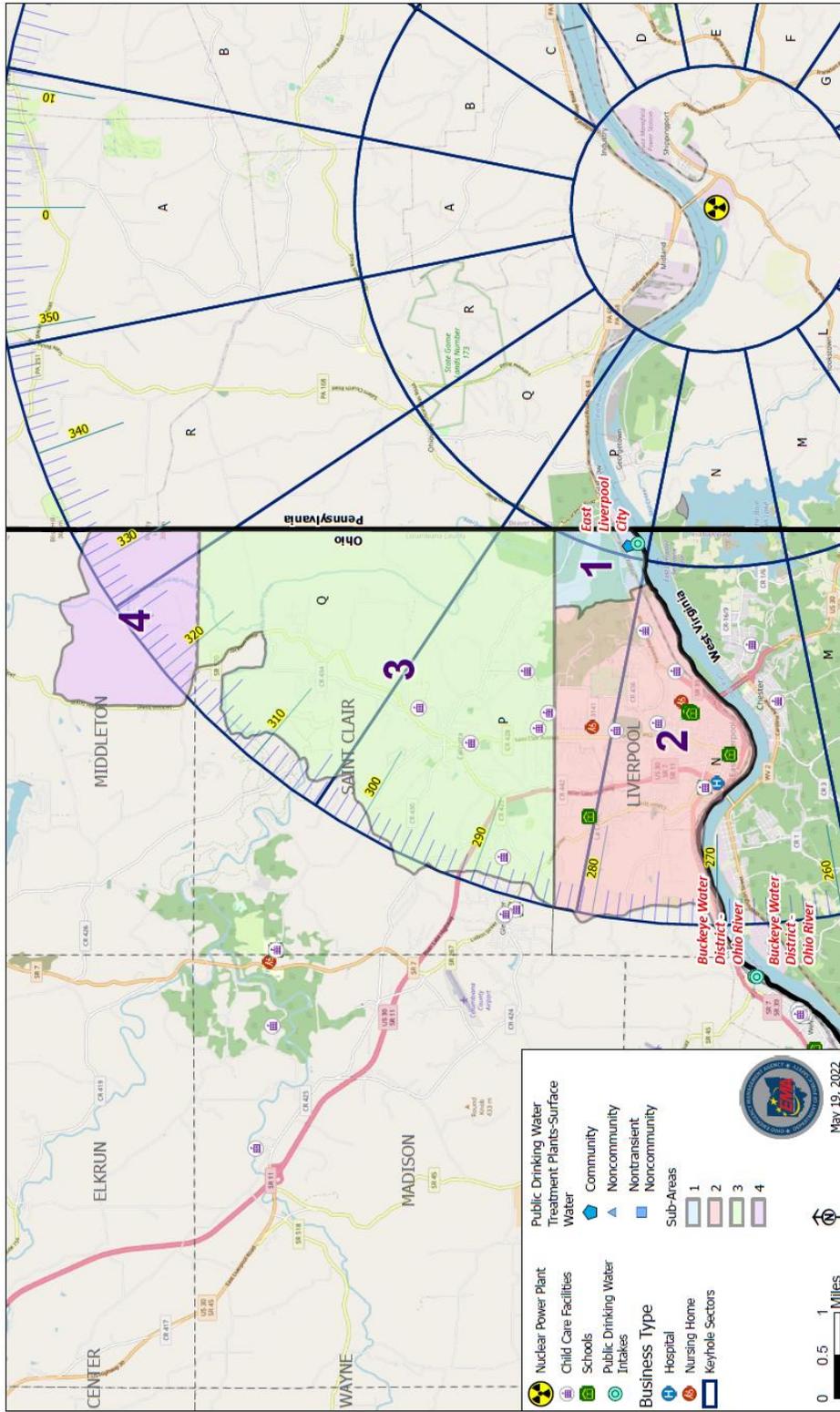
## G.2: BVPS 50-mile EPZ Counties



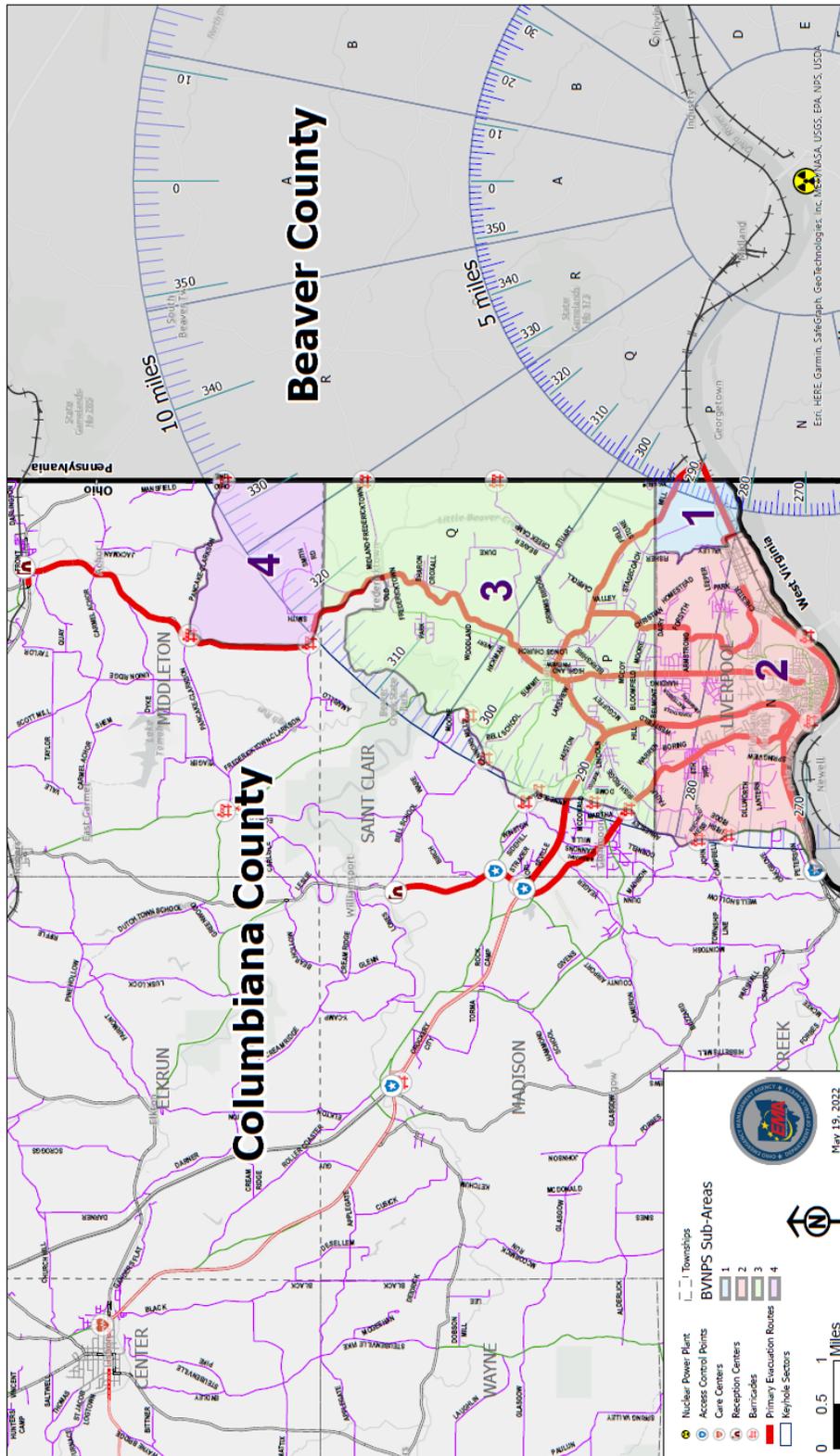
# G.3: BVPS 10-mile EPZ Population by Sub-area



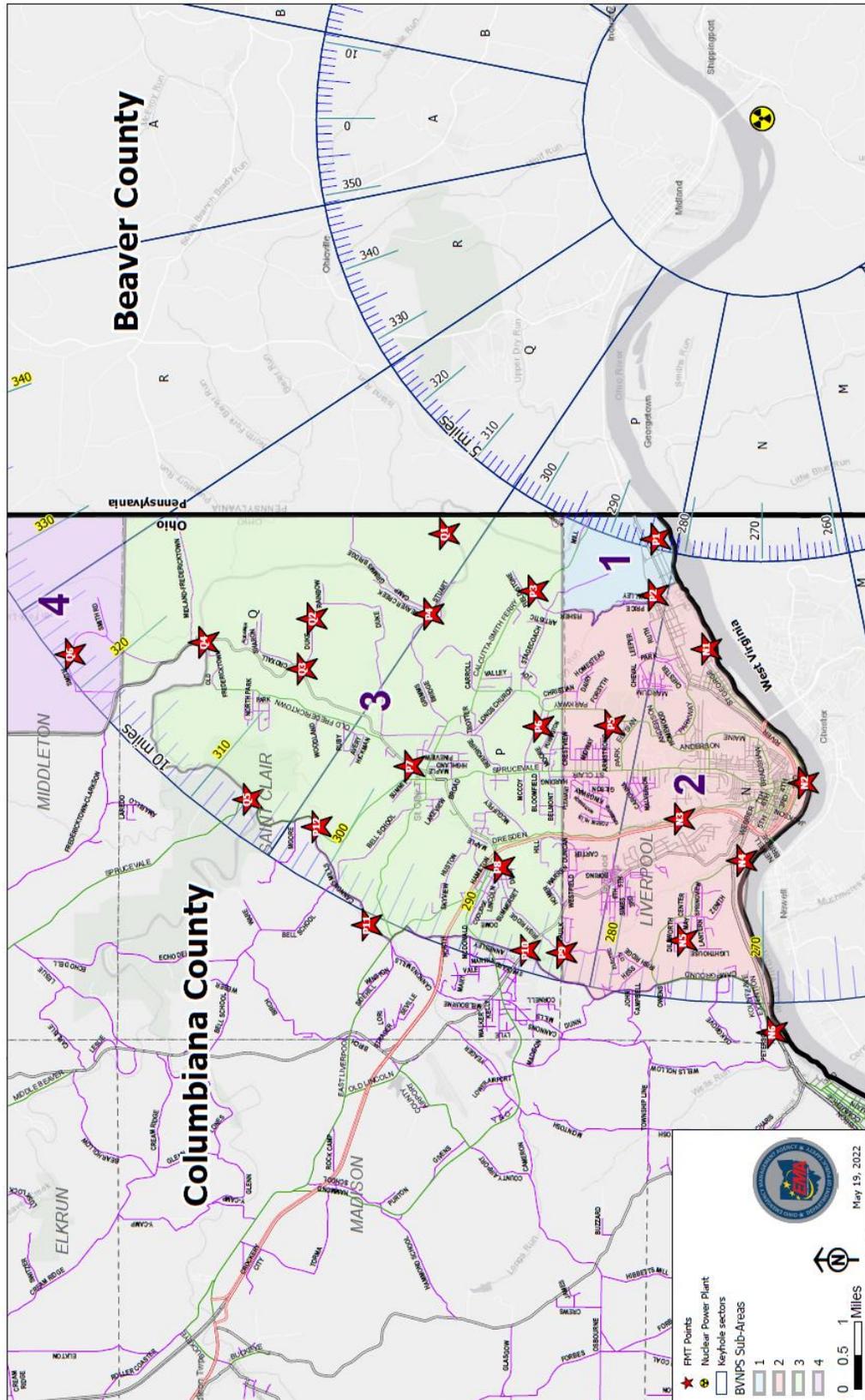
# G.4: BVPS 10-mile EPZ Critical Facilities



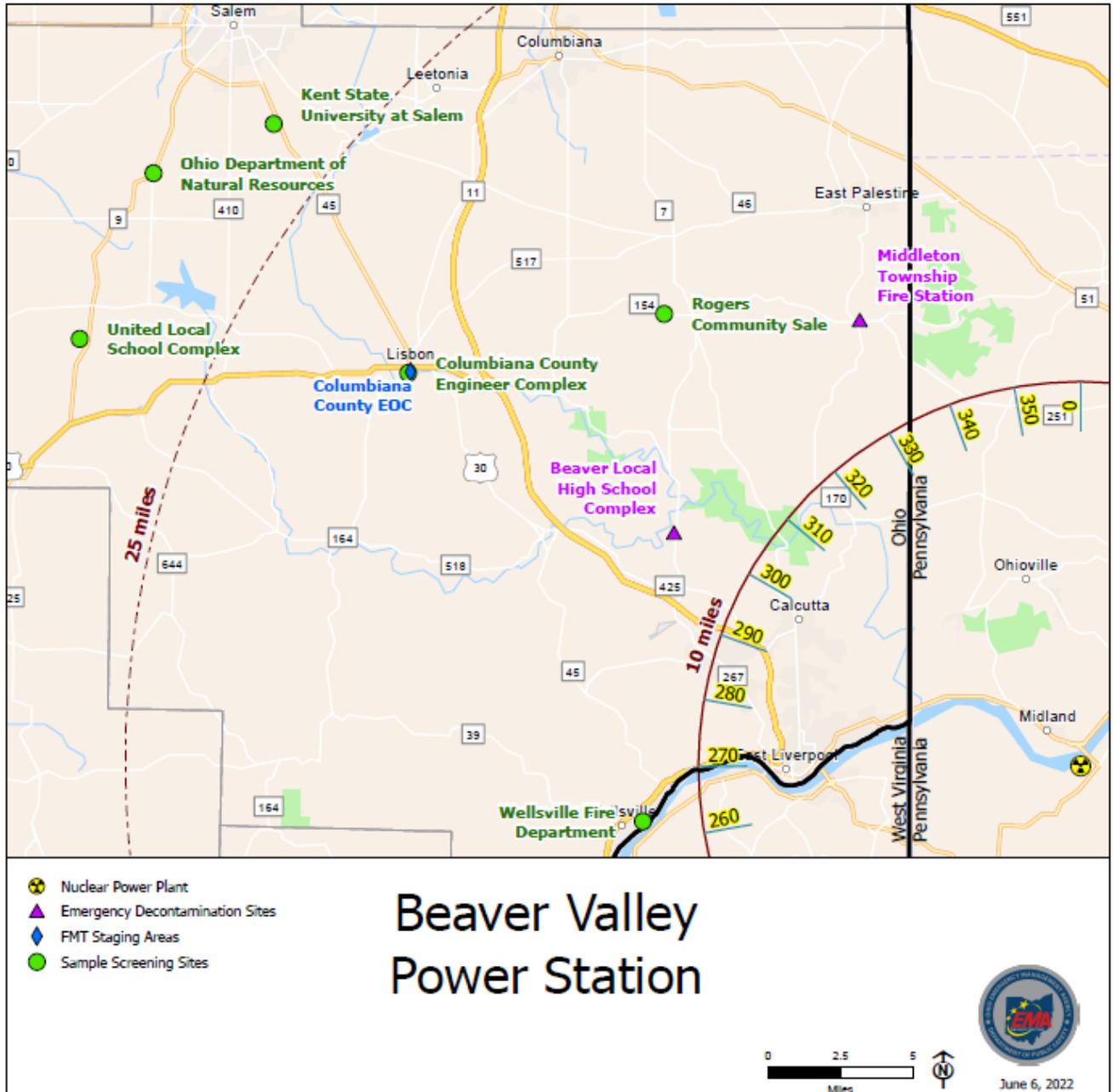
# G.5: BVPS Evacuation Routes, Reception Centers, and Care Centers



# G.6: BVPS 10-mile EPZ FMT Reference Points



# G.7: BVPS FMT/Sample Screening Staging Areas and Emergency Worker Monitoring & Decontamination Stations



## **G.8: Additional BVPS Information**

Information regarding school populations, agencies, and organizations that provide functional needs support services (FNSS), and the maximum anticipated population at recreation area can be located in the Columbiana County Radiological Emergency Response Plan.

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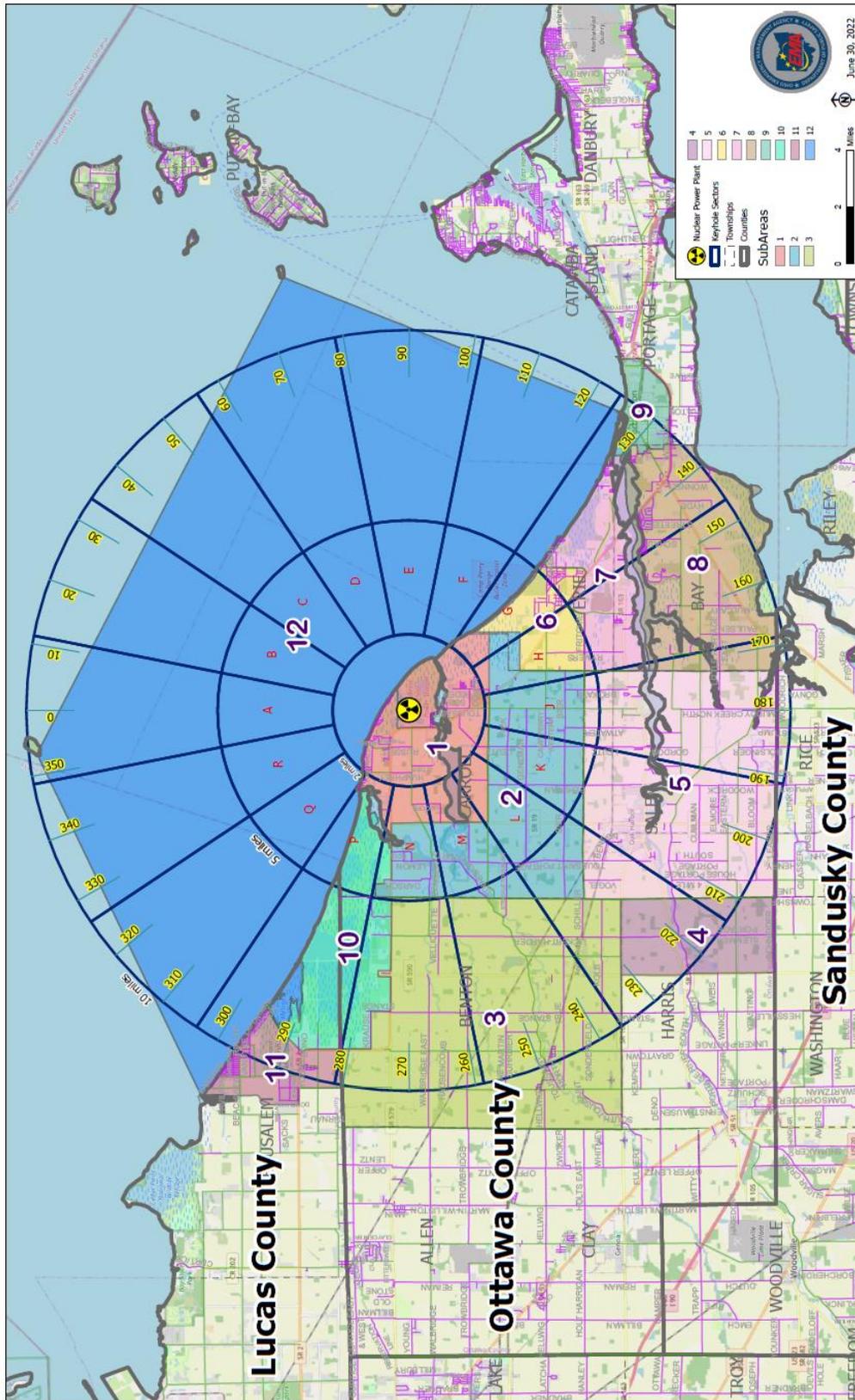
## **Appendix H: DBNPS Maps<sup>32</sup>**

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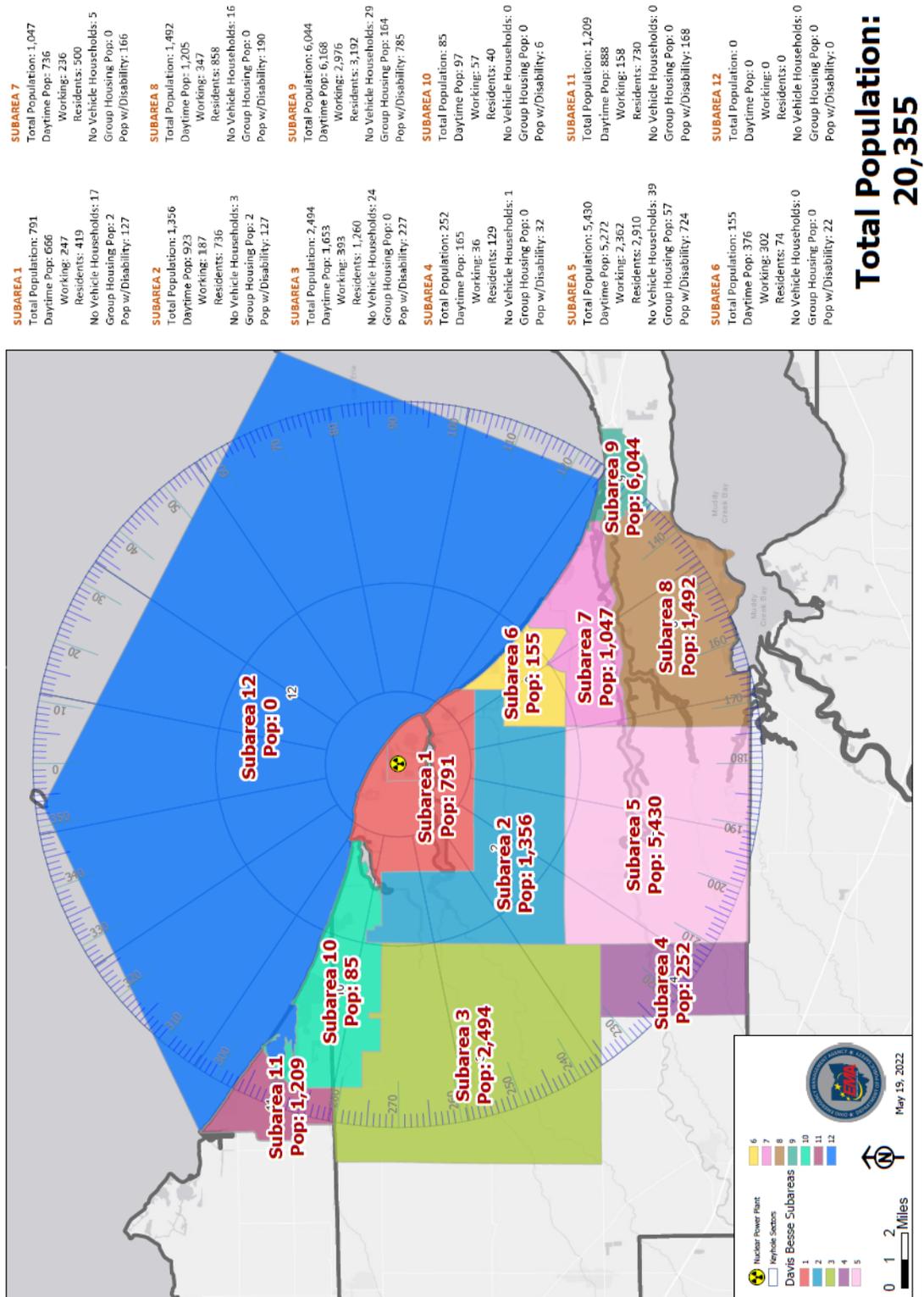
<sup>32</sup> NUREG-0654/FEMA-REP-1 R2 Criterion J.10

# H.1: DBNPS 10-mile EPZ Sub-areas

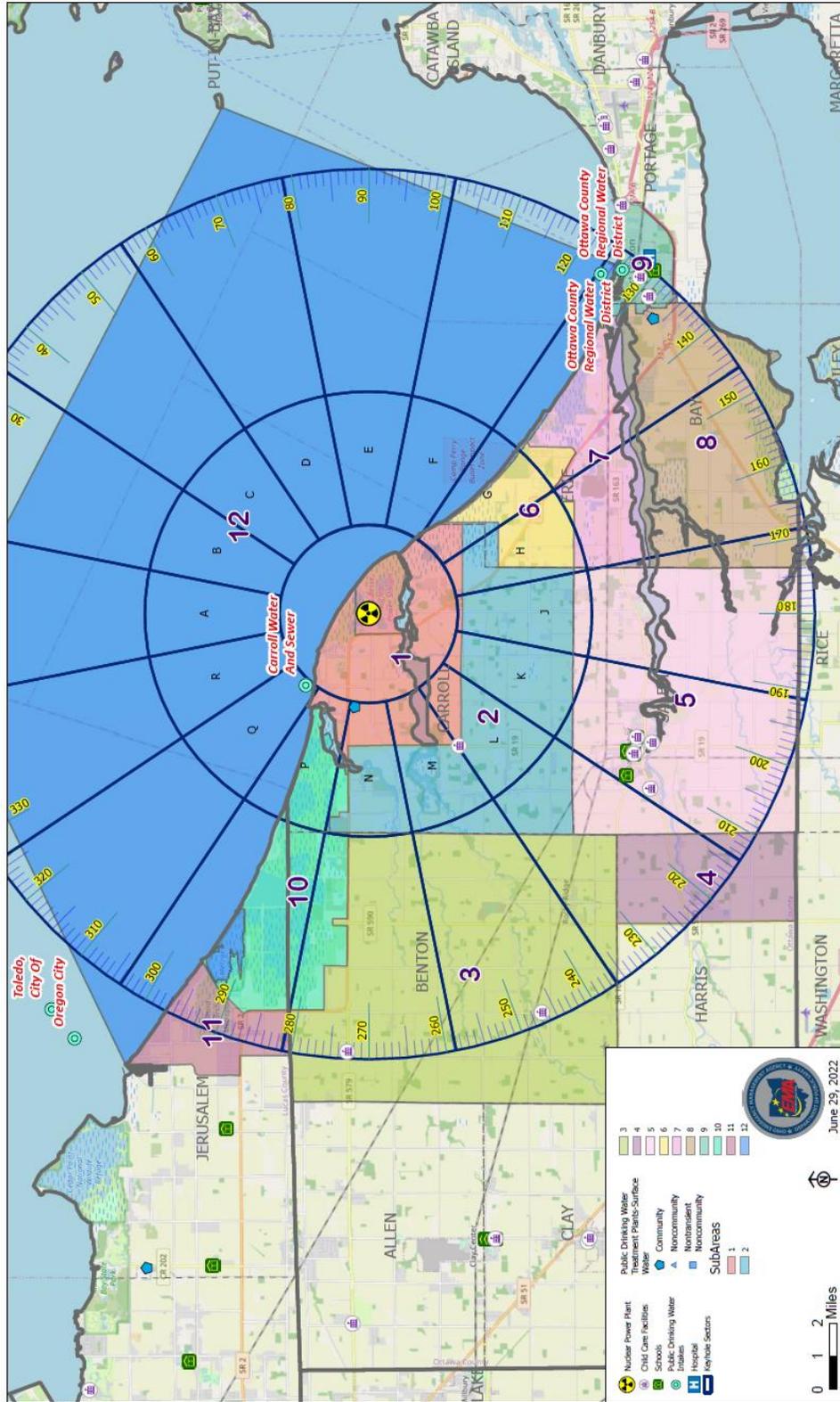




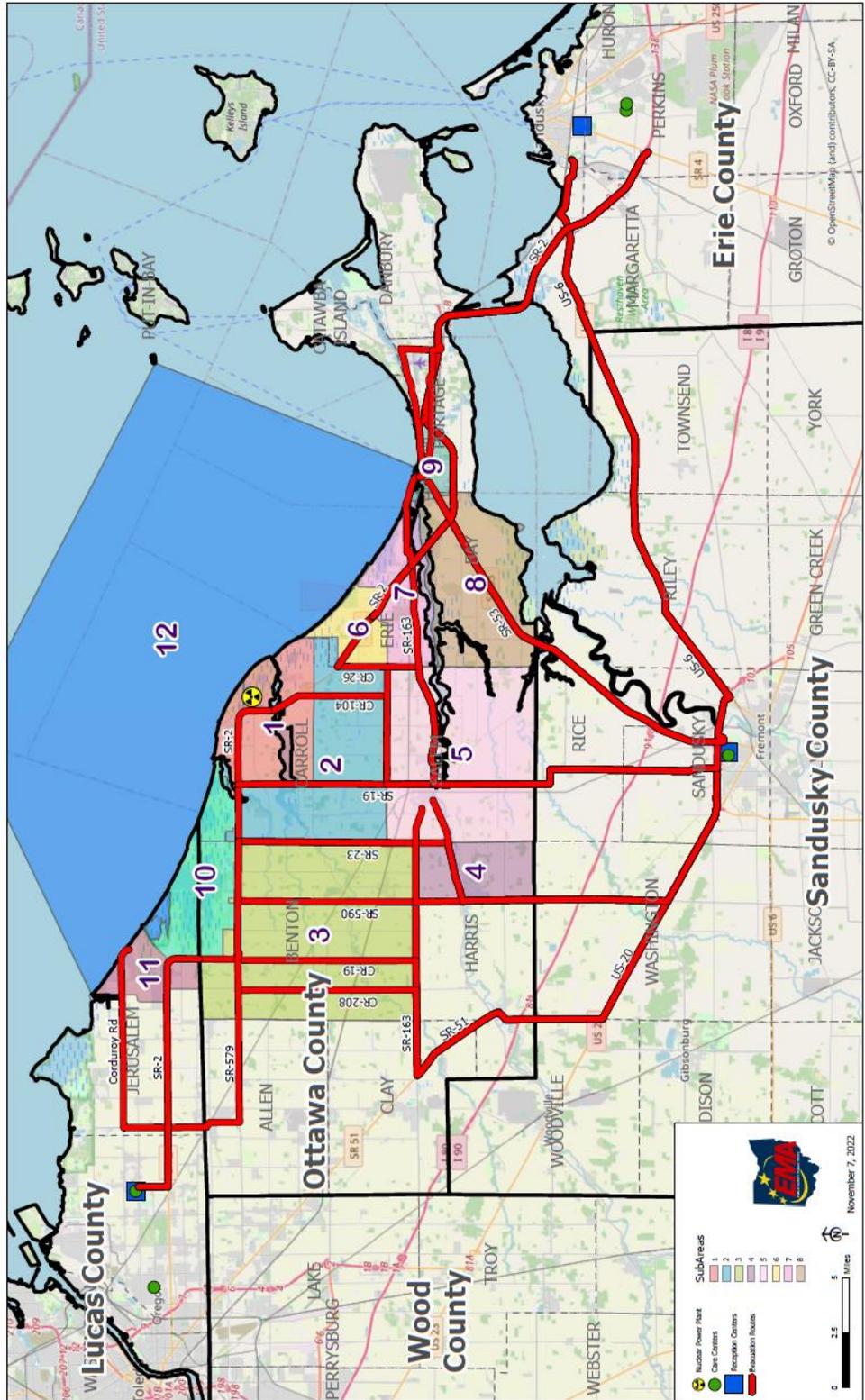
# H.3: DBNPS 10-mile EPZ Population by Sub-area



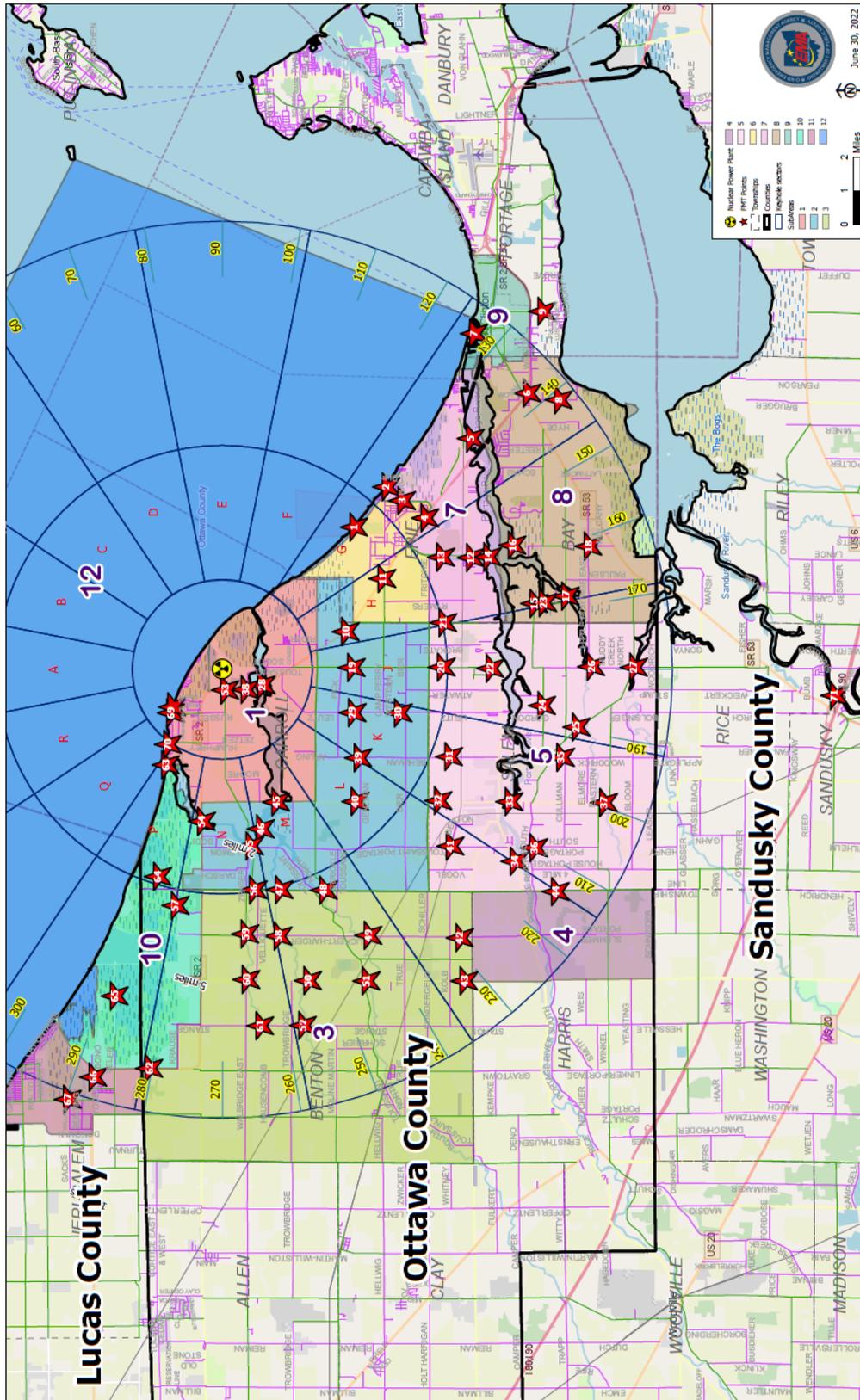
# H.4: DBNPS 10-mile EPZ Critical Facilities



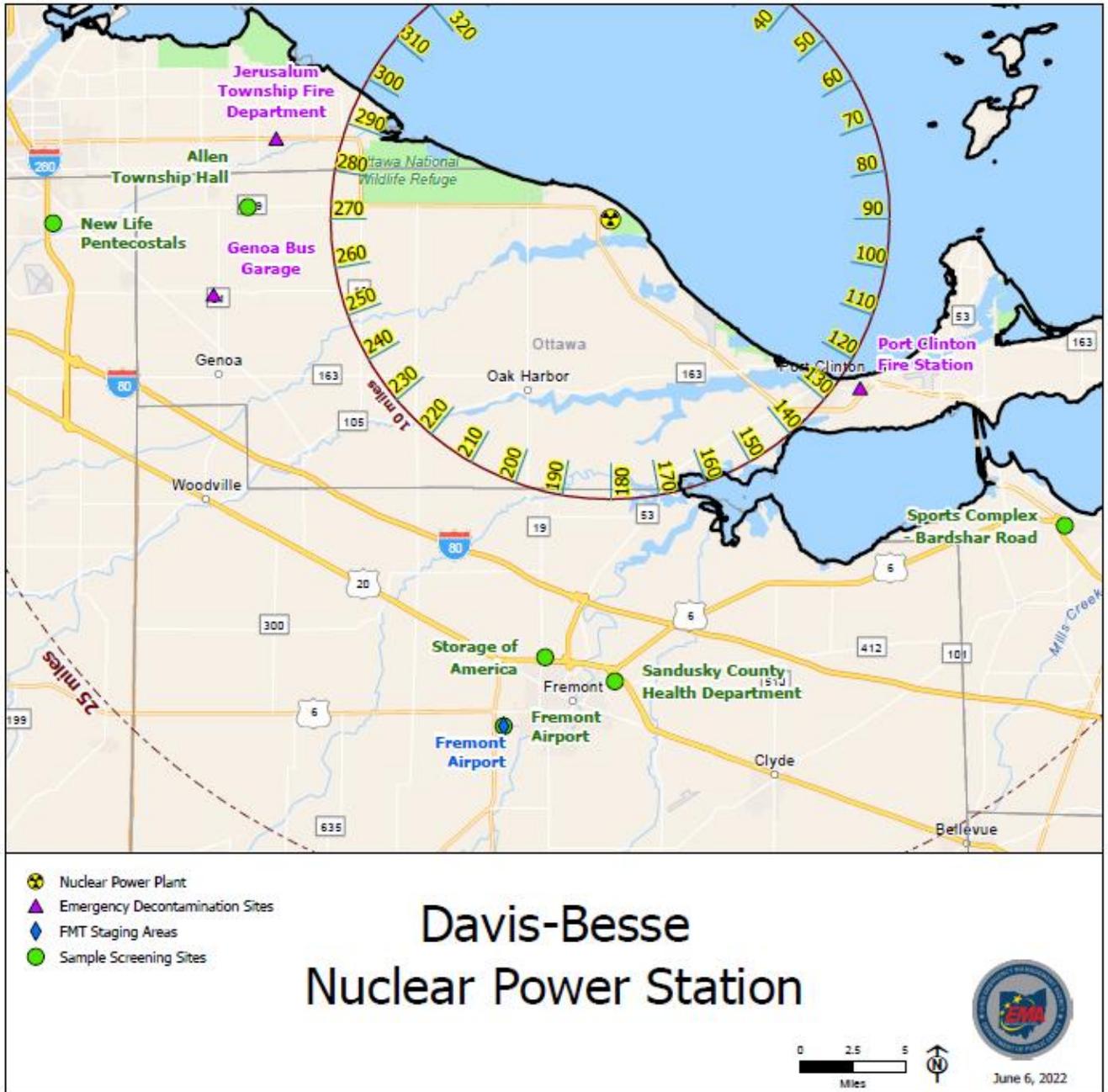
# H.5: DBNPS Evacuation Routes, Reception Centers, and Care Centers



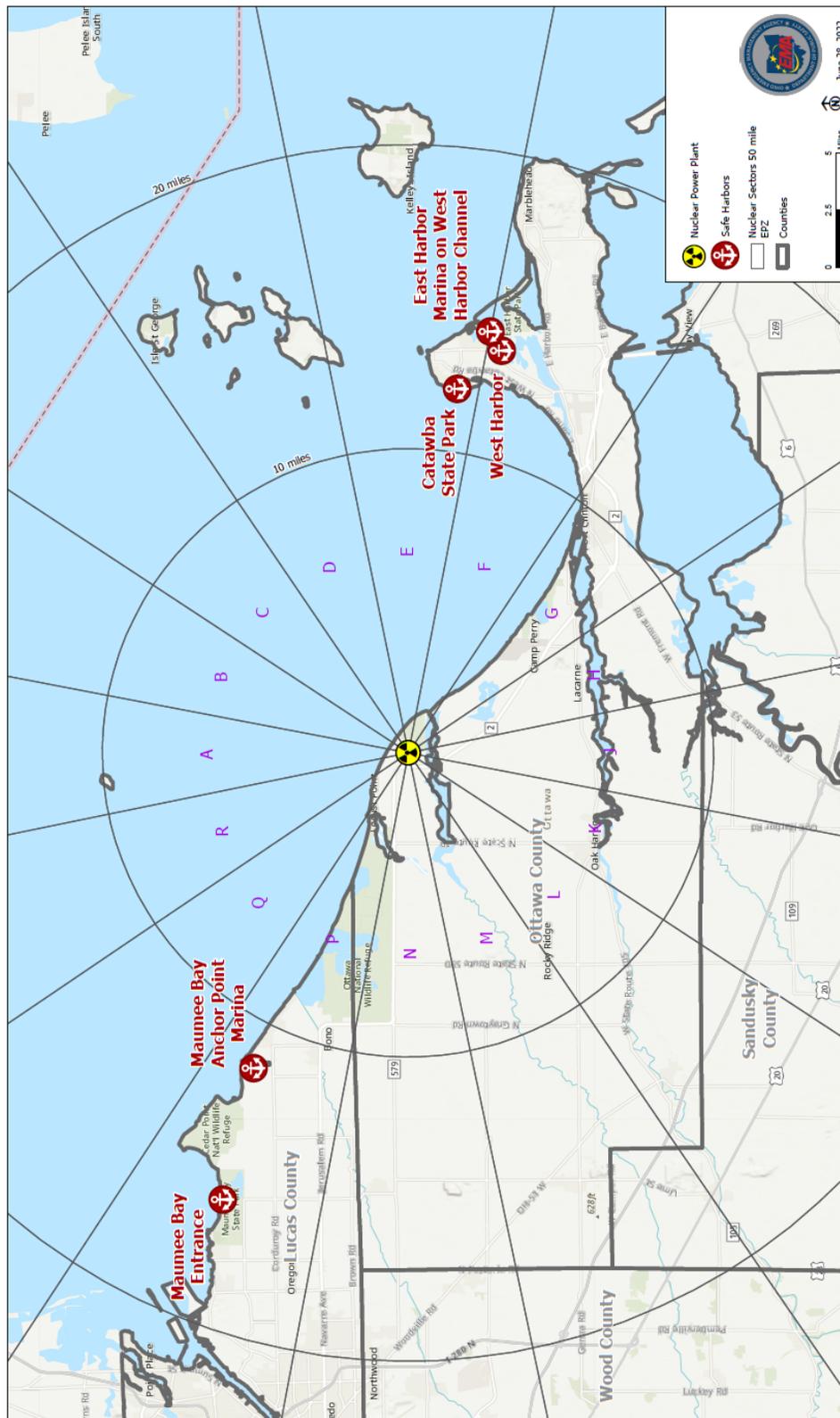
# H.6: DBNPS 10-mile EPZ FMT Reference Points



# H.7: DBNPS FMT/Sample Screening Staging Areas and Emergency Worker Monitoring & Decontamination Stations



# H.8: DBNPS Designated Safe Harbors



## **H.9: Additional DBNPS Information**

Information regarding school populations, agencies, and organizations that provide functional needs support services (FNSS), and the maximum anticipated population at recreation area can be located in the Lucas and Ottawa Counties' Radiological Emergency Response Plans.



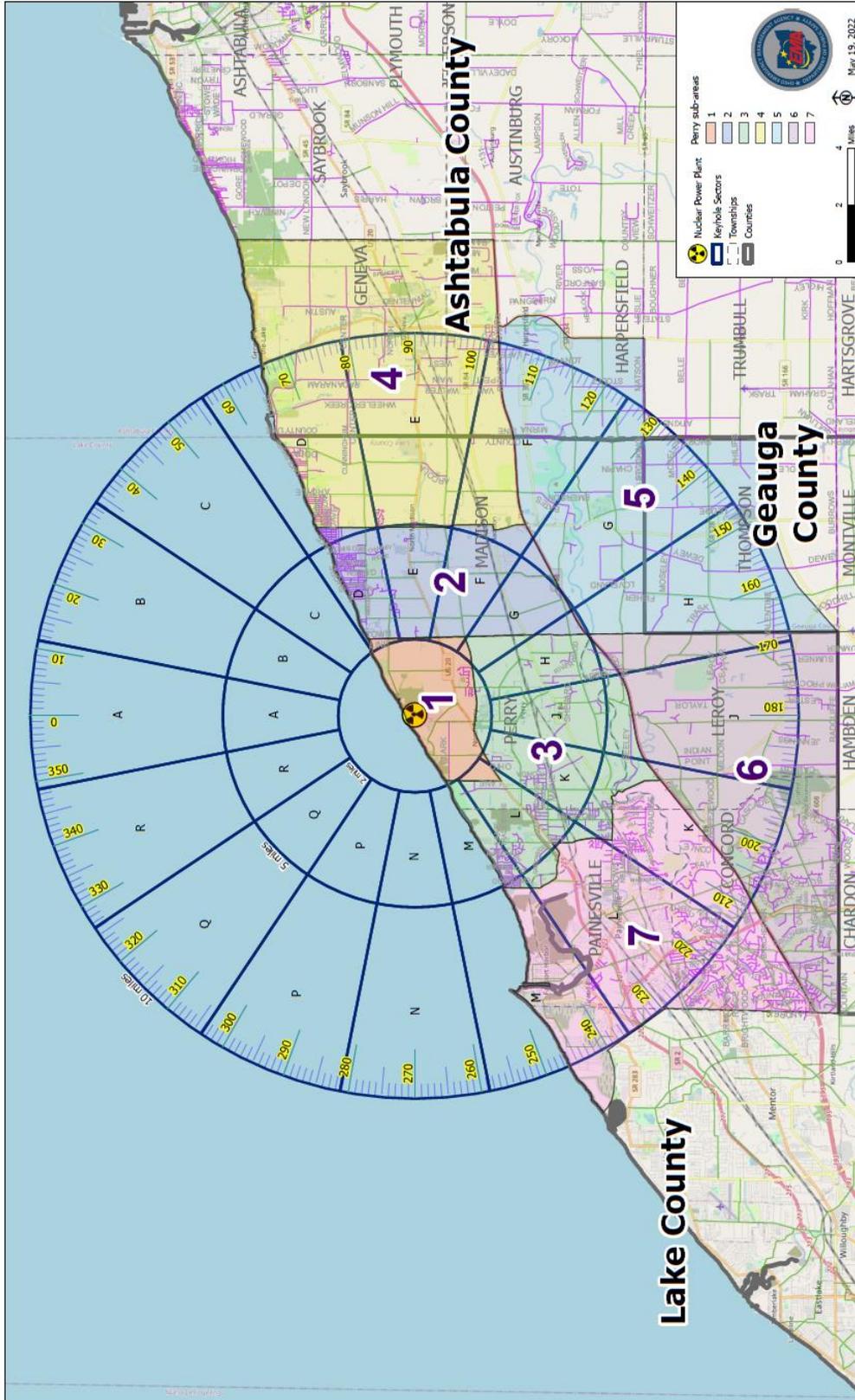
## **Appendix I: PNPP Maps<sup>33</sup>**

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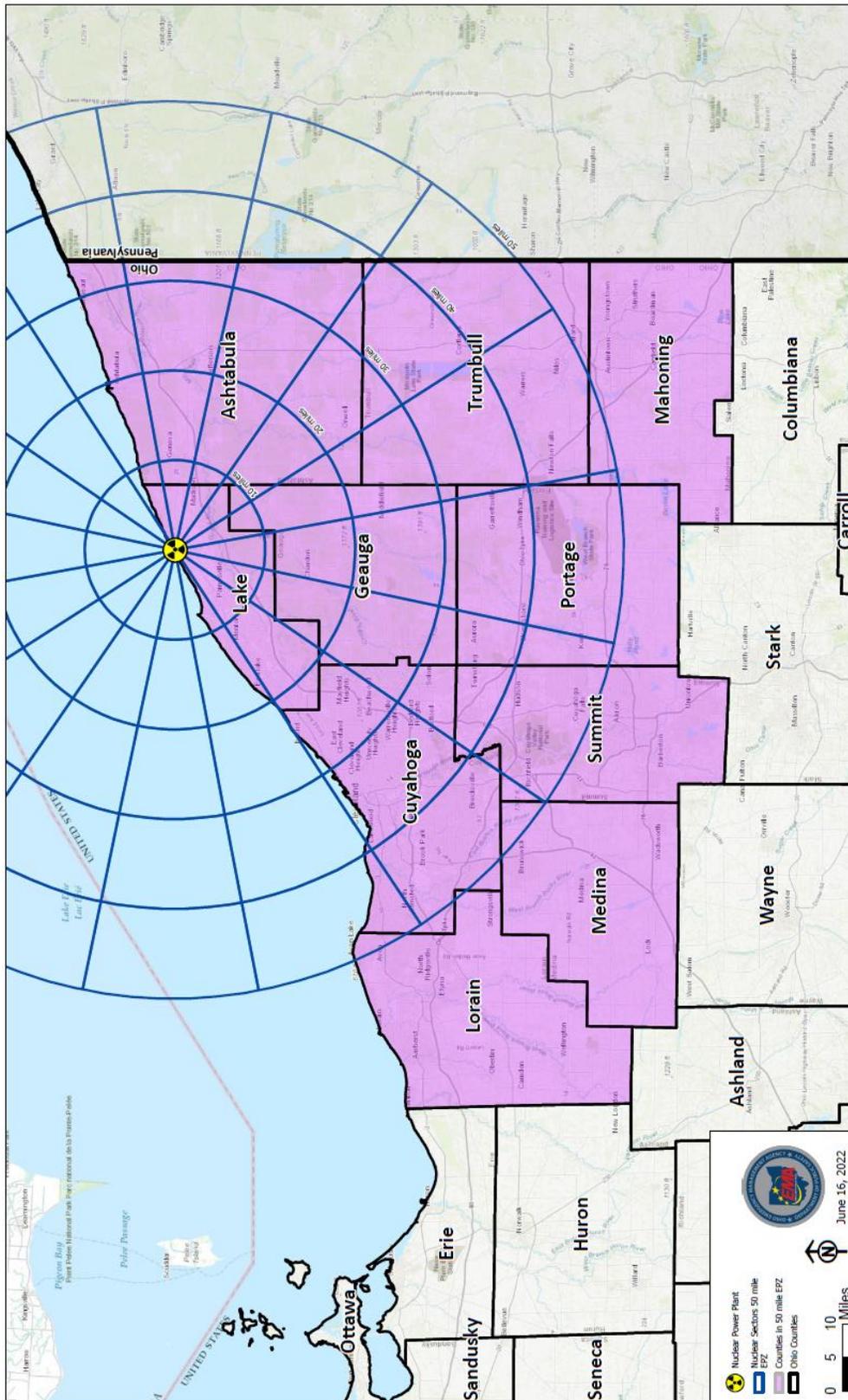
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<sup>33</sup> NUREG-0654/FEMA-REP-1 R2 Criterion J.10

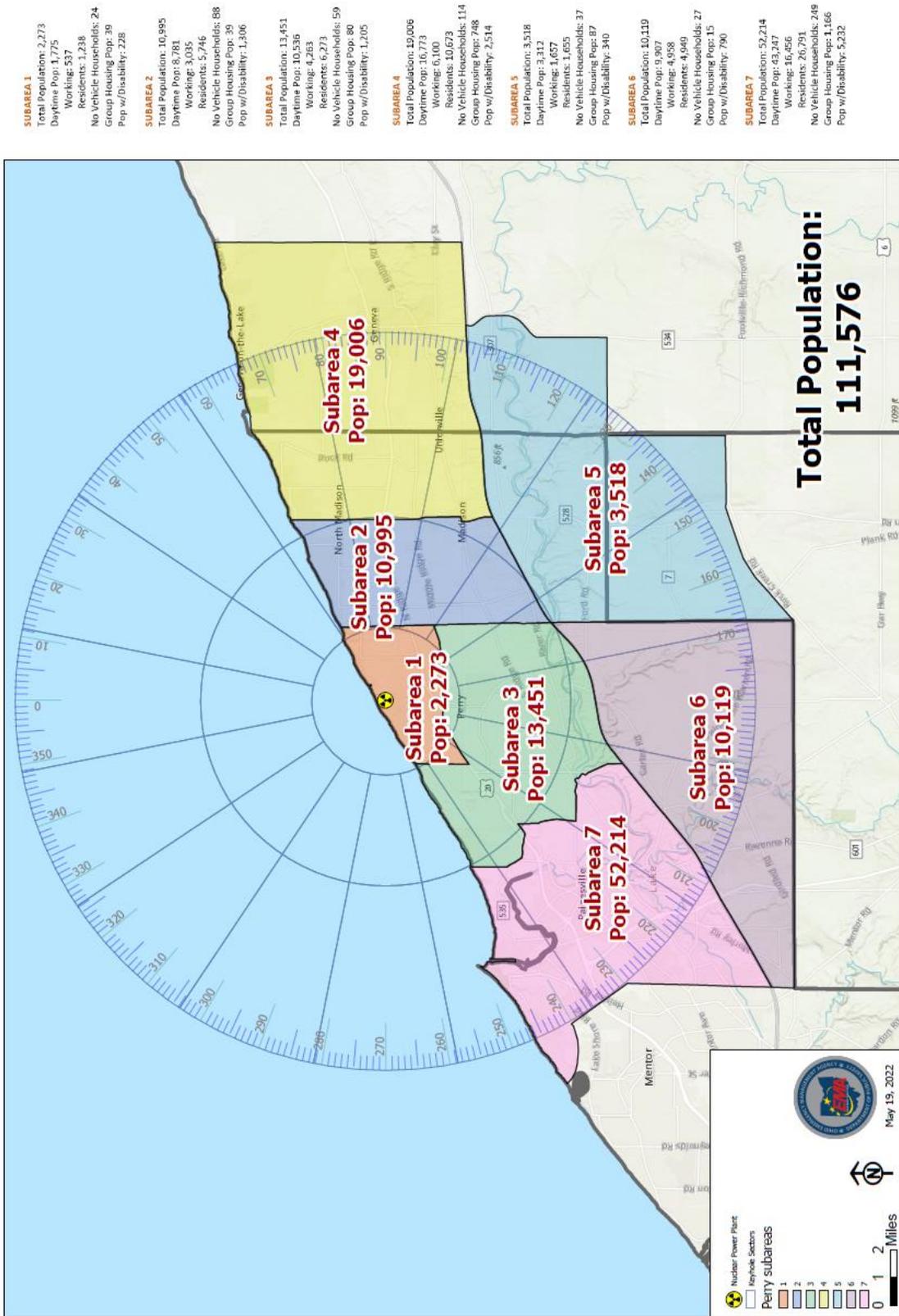
# I.1: PNPP 10-mile EPZ Sub-areas



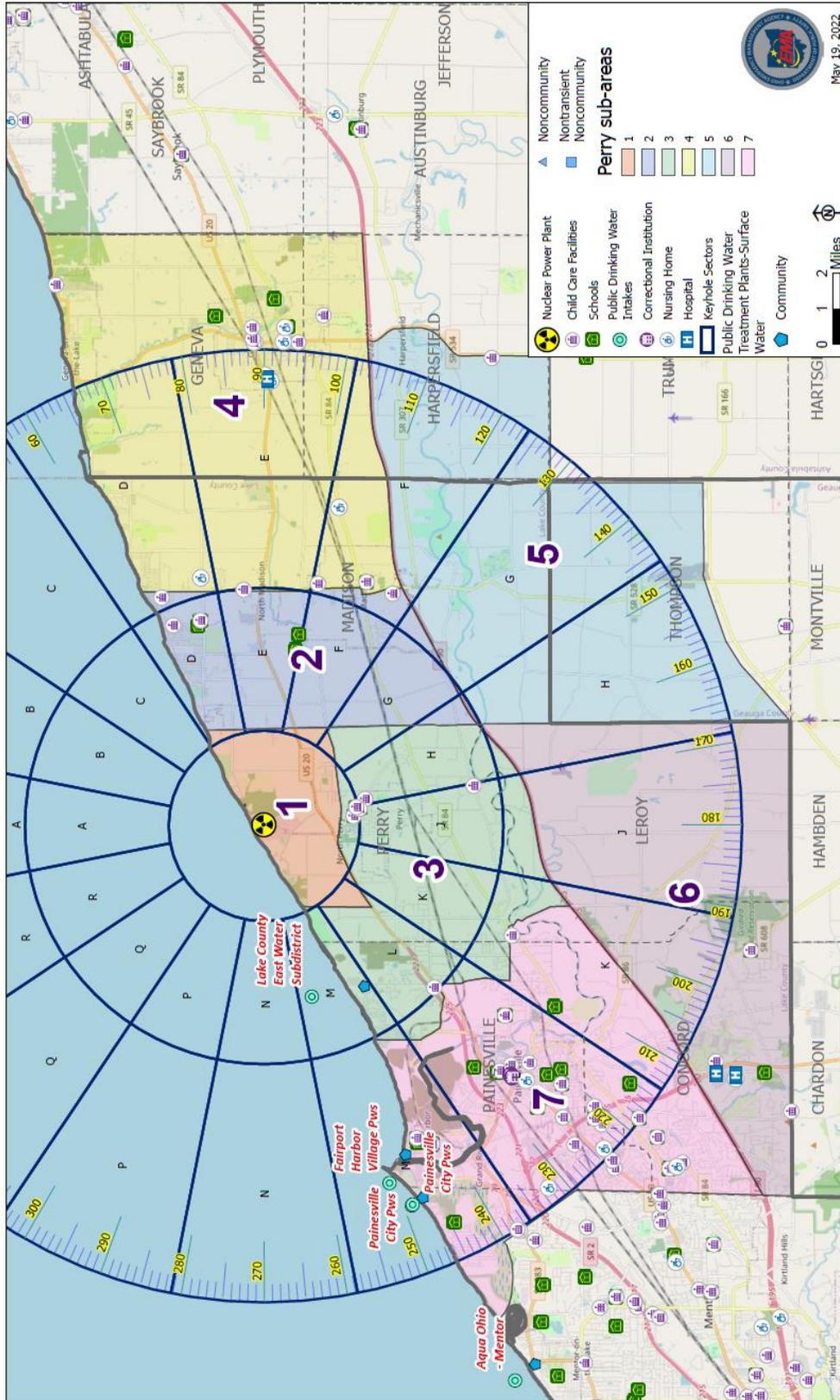
# I.2: PNPP 50-mile EPZ Counties



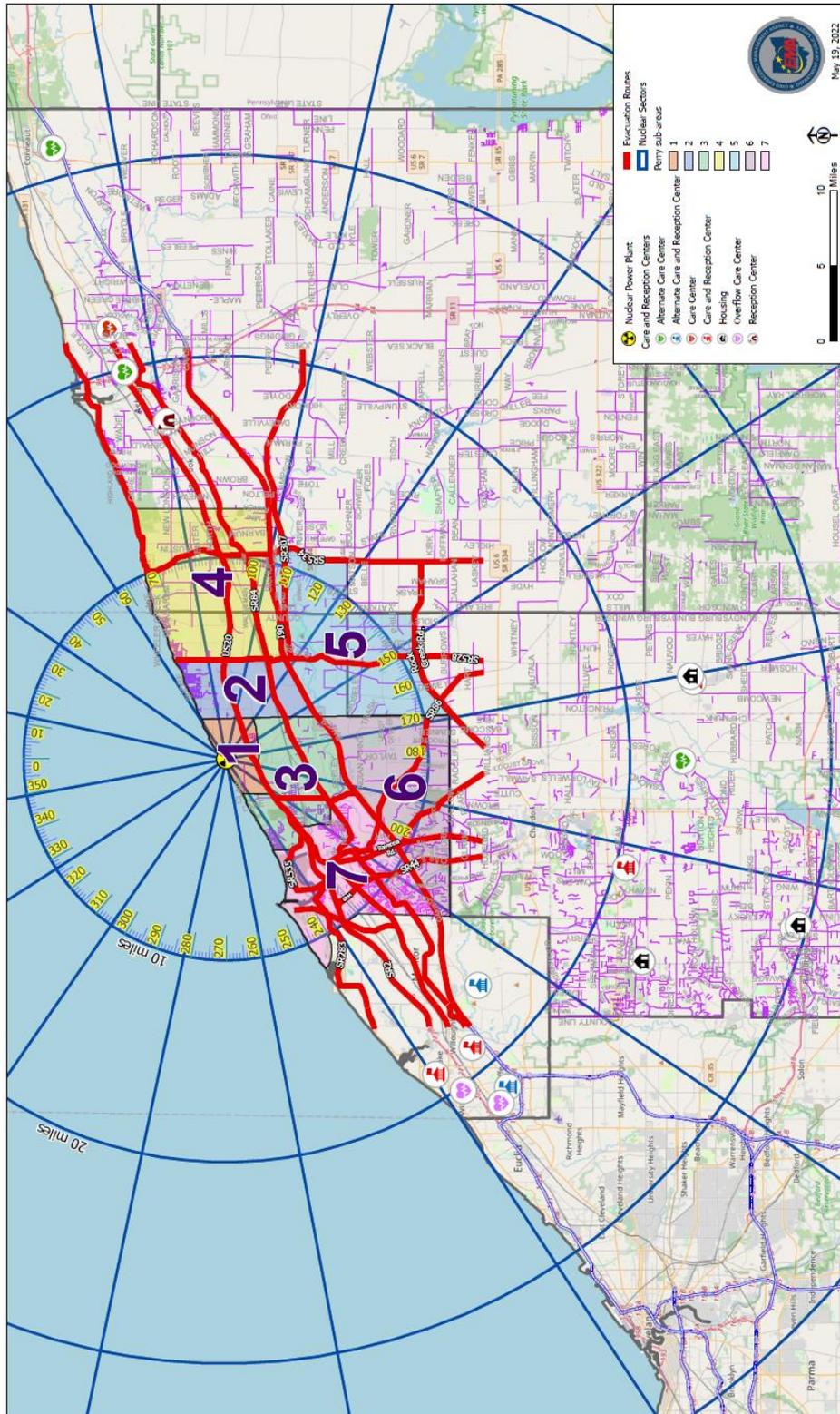
# I.3: PNPP 10-mile EPZ Population by Sub-area



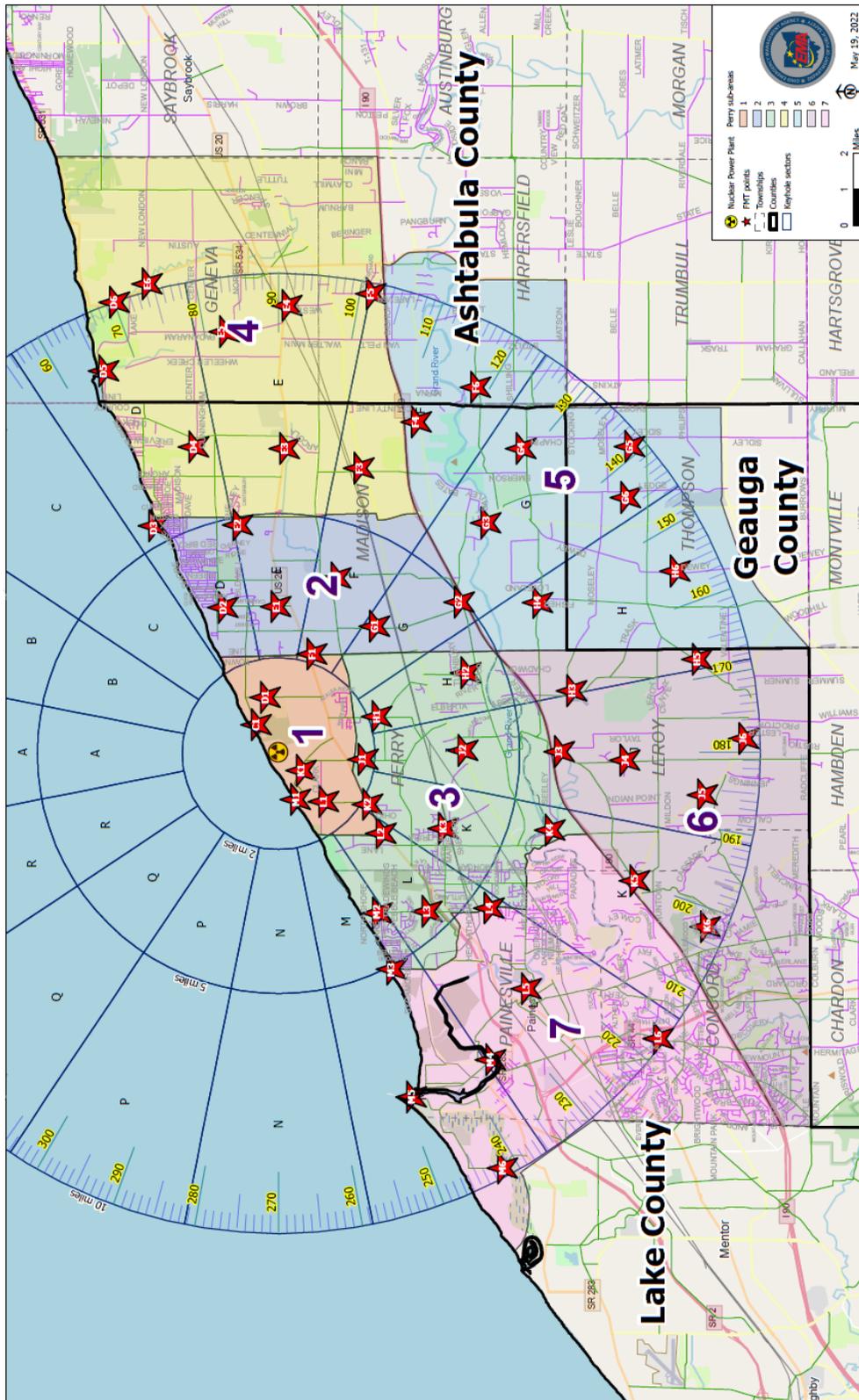
# I.4: PNPP 10-mile EPZ Critical Facilities



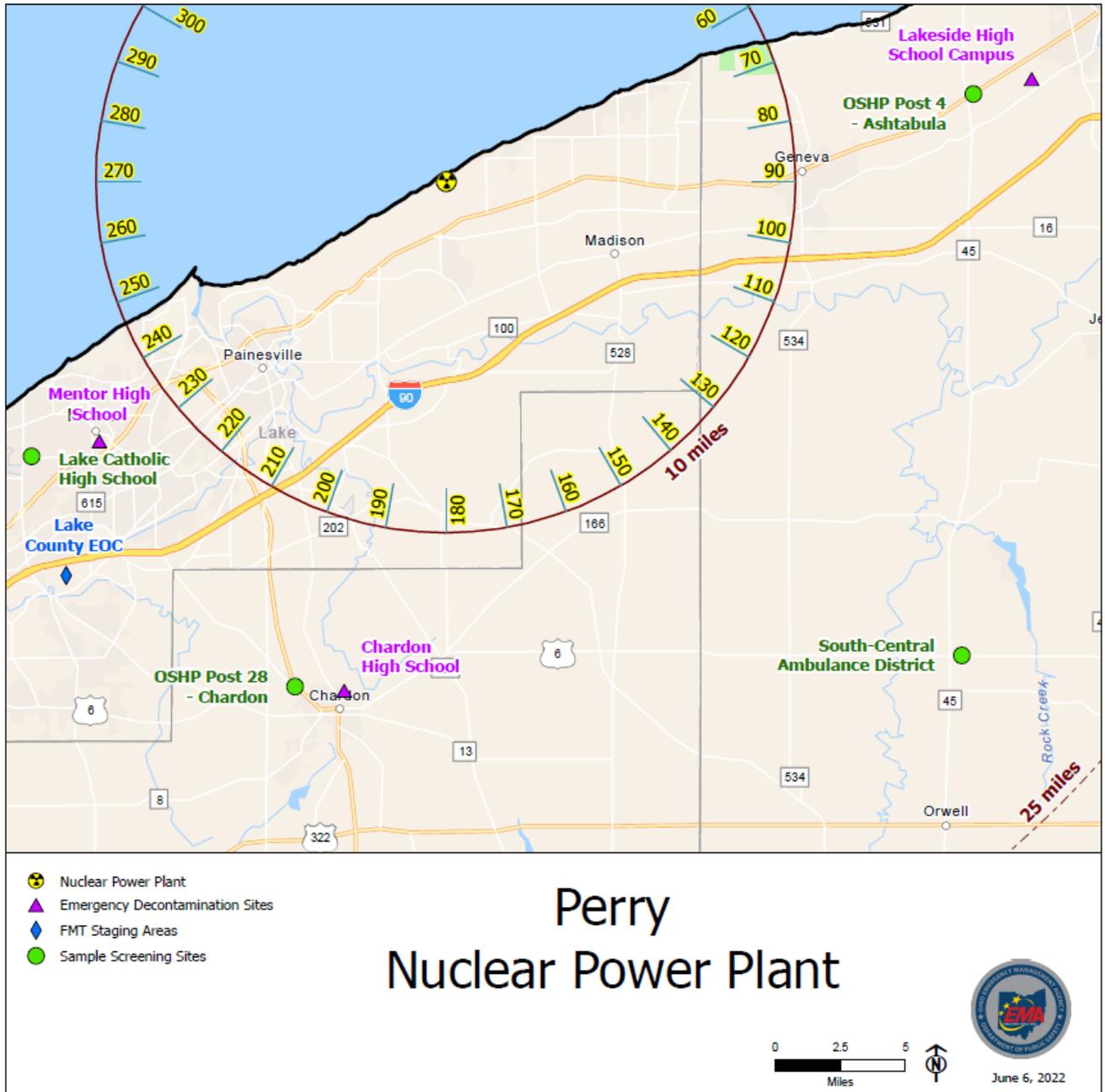
# I.5: PNPP Evacuation Routes, Reception Centers, and Care Centers



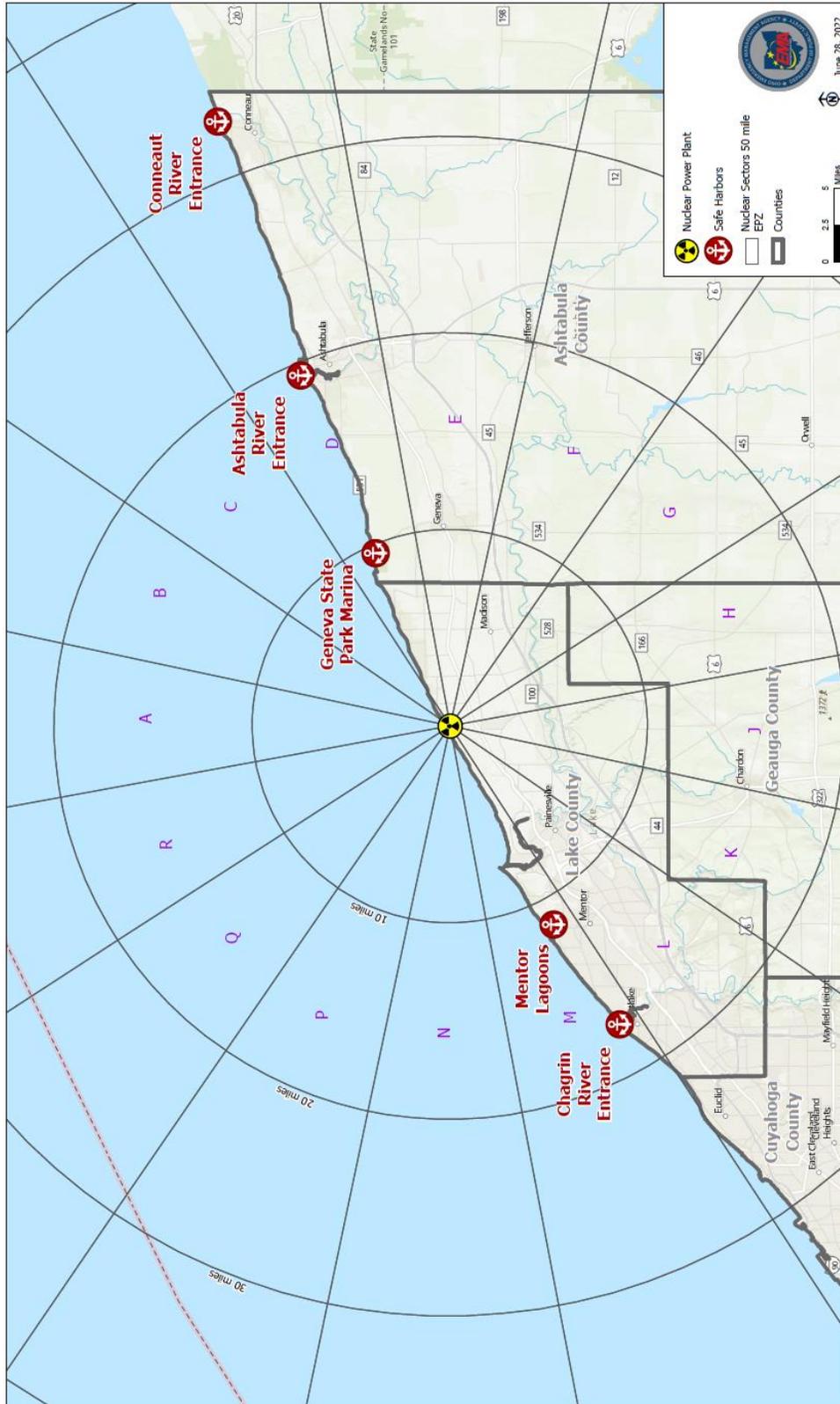
# I.6: PNPP 10-mile EPZ FMT Reference Points



# I.7: PNPP FMT/Sample Screening Staging Areas and Emergency Worker Monitoring & Decontamination Stations



# I.8: PNPP Designated Safe Harbors



## **I.9: Additional PNPP Information**

Information regarding school populations, agencies, and organizations that provide functional needs support services (FNSS), and the maximum anticipated population at recreation area can be located in the Lucas and Ottawa Counties' Radiological Emergency Response Plans.



## Appendix J: NUREG-0654/FEMA-REP-1 R2 Crosswalk<sup>34</sup>

Planning Standard A			
Criteria	EOP <sup>35</sup>	ORP <sup>36</sup>	Location
A.1.i	X		ESF1.IV.B.4; ESF1.V, ESF1-Tab A.IV; ESF2.V.A; ESF2.VI; ESF3.III.B.1; ESF3.III.B.4; ESF3.IV, ESF3-Tab A.IV; ESF4.IV.C.4; ESF4.V; ESF5.IV; ESF6.IV.I; ESF6.V, ESF6-Tab A.IV, ESF6-Tab C.VI; ESF7.IV, ESF7-Tab A.VI; ESF8.IV.B; ESF8.V; ESF9.V.D; ESF9.VI; ESF10.III.B.3.d; ESF10.IV; ESF11.III.B.1; ESF11.III.B.4; ESF11.IV; ESF12.III.D.1; ESF12.III.D.4; ESF12.IV; ESF13.III.B.1; ESF13.IV; ESF14.IV, ESF14-Tab B.IV, ESF14-Tab C.IV, ESF14-Tab D.IV, ESF14-Tab E.IV; ESF15.IV
		X	I.E – I.P; Attachments I-A, I-D, I-E, I-F
A.1.ii	X		ESF1; ESF1.IV.B.4; ESF1.V; ESF1-Tab A; ESF1-Tab A.IV; ESF2; ESF2.V.A; ESF2.VI; ESF3; ESF3.III.B.1; ESF3.III.B.4; ESF3.IV, ESF3-Tab A.IV; ESF4; ESF4.IV.C.4; ESF4.V; ESF5; ESF5.IV; ESF6; ESF6.IV.I; ESF6.V, ESF6-Tab A; ESF6-Tab A.IV, ESF6-Tab C; ESF6-Tab C.VI; ESF7; ESF7.IV, ESF7-Tab A; ESF7-Tab A.VI; ESF 8; ESF8.IV.B; ESF8.V; ESF9; ESF9.V.D; ESF9.VI; ESF10;; ESF10.III.B.3.d; ESF10.IV; ESF11; ESF11.III.B.1; ESF11.III.B.4; ESF11.IV; ESF12; ESF12.III.D.1; ESF12.III.D.4; ESF12.IV; ESF13; ESF13.III.B.1; ESF13.IV; ESF14; ESF14.IV, ESF14-Tab B; ESF14-Tab B.IV, ESF14-Tab C; ESF14-Tab C.IV, ESF14-Tab D; ESF14-Tab D.IV, ESF14-Tab E.IV; ESF15; ESF15.IV
		X	Attachments I-D, I-E, I-F
A.1.a.i	X		ESF1.IV.B.4; ESF1.V, ESF1-Tab A.IV; ESF2.V.A; ESF2.VI; ESF3.III.B.1; ESF3.III.B.4; ESF3.IV, ESF3-Tab A.IV; ESF4.IV.C.4; ESF4.V; ESF5.IV; ESF6.IV.I; ESF6.V, ESF6-Tab A.IV, ESF6-Tab C.VI; ESF7.IV, ESF7-Tab A.VI; ESF8.IV.B; ESF8.V; ESF9.V.D; ESF9.VI; ESF10.III.B.3.d; ESF10.IV; ESF11.III.B.1; ESF11.III.B.4; ESF11.IV; ESF12.III.D.1; ESF12.III.D.4; ESF12.IV; ESF13.III.B.1; ESF13.IV; ESF14.IV, ESF14-Tab B.IV, ESF14-Tab C.IV, ESF14-Tab D.IV, ESF14-Tab E.IV; ESF15.IV
		X	I.E – I.P; Attachments I-A, I-C, I-D, I-E, I-F
A.1.b.i		X	Attachment I-C
A.1.c.i	X		Base Plan III.I.5.e, V.A.1.a, V.A.1.c
		X	I.E.1
A.1.c.ii	X		Base Plan III.I.5.e, V.A.1.a, V.A.1.c
		X	I.E.2
A.2.i		X	I.A.7; I.B.1.a
A.2.ii		X	I.A.7; I.B.1.b

<sup>34</sup> NUREG-0654/FEMA-REP-1 R2 Criterion P.8.ii

<sup>35</sup> State of Ohio Emergency Operations Plan (EOP)

<sup>36</sup> Ohio REP Plan (ORP)

<b>Planning Standard A</b>			
<b>Criteria</b>	<b>EOP<sup>35</sup></b>	<b>ORP<sup>36</sup></b>	<b>Location</b>
A.2.iii	X		Base Plan III.J.6.d; III.J.7.c
		X	I.A.7
A.3.i		X	Attachments I-G, I-H, I-I, I-J, I-K
A.3.ii		X	Attachments I-G, I-H, I-I, I-J, I-K
A.3.iii		X	Attachments I-G, I-H, I-I, I-J, I-K
A.4.i		X	Appendix E
A.4.ii		X	Appendix E
A.4.iii		X	I.F.1.a.ii.2; Appendix E
A.4.iv		X	Appendix E
A.4.v		X	I.F.1.a.ii.3; I.F.1.a.ii.4
A.5.i		X	I.F.1.d.i.2; I.F.2.c.i.4; I.I.3.a.ii; I.L.3.a.iv
A.5.ii		X	I.F.1.d.i.1.c; I.F.2.c.i.2; I.H.1.a; I.I.3.a.iii; I.L.3.a.iv
A.5.iii		X	I.F.1.d.i.1.c; I.F.2.c.i.2; I.H.1.a; I.I.3.a.iii; I.L.3.a.iv
A.5.iv		X	I.F.1.d.i.1.d; I.F.2.c.i.3; I.G.3.a.ii; I.H.1.b; I.I.3.a.iv; I.J.3.a.ii; I.J.3.a.iii; I.K.3.a.ii; I.K.3.a.iii; I.L.3.a.iii; I.L.3.a.iv.1; I.M.3.a.iii

<b>Planning Standard B</b>			
<b>Criteria</b>	<b>EOP</b>	<b>ORP</b>	<b>Location</b>
B.1			NA
B.1.a			NA
B.2			NA
B.2.a			NA
B.3			NA
B.4			NA
B.5			NA

<b>Planning Standard C</b>			
<b>Criteria</b>	<b>EOP</b>	<b>ORP</b>	<b>Location</b>
C.1.i		X	II.A.1.a.i
C.1.ii		X	II.A.1.a.ii
C.1.iii		X	II.A.1.a.iii
C.2.a.i		X	I.B.2.d; I.B.2.e
C.2.b.i		X	II.A.2.a
C.2.b.ii	X		ESF7.II.B, ESF7.IV.E, ESF7.II.F, ESF7.IV.H
		X	II.A.2.c
C.2.b.iii		X	II.A.2.b
C.2.b.iv		X	II.A.2.d
C.2.b.v		X	II.A.2.c
C.2.b.vi		X	II.A.2.c.i.1; II.A.2.c.ii.5; II.A.2.c.iii.2
C.2.b.vii		X	II.A.2.e
C.2.c.i			NA
C.2.c.ii			NA
C.2.c.iii			NA
C.2.d.i			NA

### Planning Standard C

Criteria	EOP	ORP	Location
C.3.i	X		ESF1.IV.B.4; ESF1.V, ESF1-Tab A.IV; ESF2.V.A; ESF2.VI; ESF3.III.B.1; ESF3.III.B.4; ESF3.IV, ESF3-Tab A.IV; ESF4.IV.C.4; ESF4.V; ESF5.IV; ESF6.IV.I; ESF6.V, ESF6-Tab A.IV, ESF6-Tab C.VI; ESF7.IV, ESF7-Tab A.VI; ESF8.IV.B; ESF8.V; ESF9.V.D; ESF9.VI; ESF10.III.B.3.d; ESF10.IV; ESF11.III.B.1; ESF11.III.B.4; ESF11.IV; ESF12.III.D.1; ESF12.III.D.4; ESF12.IV; ESF13.III.B.1; ESF13.IV; ESF14.IV, ESF14-Tab B.IV, ESF14-Tab C.IV, ESF14-Tab D.IV, ESF14-Tab E.IV; ESF15.IV
		X	I.E – I.P; Attachments I-D, I-E, I-F
C.3.ii	X		ESF1.V, ESF1-Tab A.IV; ESF2.VI; ESF3.IV, ESF3-Tab A.IV; ESF4.V; ESF5.IV; ESF6.V, ESF6-Tab A.IV, ESF6-Tab C.VI; ESF7.IV, ESF7-Tab A.VI; ESF8.V; ESF9.VI; ESF10.IV; ESF11.IV; ESF12.IV; ESF13.IV; ESF14.IV, ESF14-Tab B.IV, ESF14-Tab C.IV, ESF14-Tab D.IV, ESF14-Tab E.IV; ESF15.IV
		X	I.E – I.P; Attachments I-D, I-E, I-F; II.B.2
C.3.iii		X	II.A.1.b.iv; II.A.2.e
C.3.iv		X	I.F.1.d.ii.1; I.F.1.d.ii.2.c; I.F.1.d.ii.2.e; I.F.2.c.ii.1; I.G.3.b.i; I.H.2.c.ii.1; I.H.2.c.ii.2.a.i; I.H.3.c.ii.1; I.H.4.c.i; I.I.3.b.i; I.J.3.b.i.1; I.K.3.b.i.1; I.K.3.b.i.2.a; I.L.3.b.i; I.M.3.b.i; I.N.3; II.A.1.b; Attachment II-A
C.4.i		X	II.A.3.a; II.A.3.b
C.4.ii		X	II.A.3.a.ii; II.A.3.ix; VII.B.5.d; VII.C.1.f
C.4.iii		X	II.A.3.a.i
C.4.iv		X	II.A.3.a.iii
C.5			NA
C.5.a			NA
C.5.b			NA

### Planning Standard D

Criteria	EOP	ORP	Location
D.1			NA
D.1.a			NA
D.1.b.i			III.A.2
D.1.b.ii			III.A.1
D.1.b.iii			III.A.2; III.A.3
D.2			NA
D.3			NA
D.4.i			III.B.2; III.B.3; III.C.2; III.C.4; III.D.2; III.D.4; III.E.2; III.E.4

### Planning Standard E

Criteria	EOP	ORP	Location
E.1.i		X	IV.A.1
E.1.ii		X	IV.A.1.d
E.1.iii		X	IV.A.2.b; IV.A.3
E.1.iv		X	IV.B
E.1.a.i		X	IV.A.2.b; IV.A.3
E.1.a.ii		X	IV.B; Attachment IV-A

### Planning Standard E

Criteria	EOP	ORP	Location
E.1.a.iii		X	IV.C
E.1.a.iv		X	IV.B.1
E.1.b			NA
E.2.i			NA
E.2.ii		X	IV.D.5; IV.D.6; Attachments IX-A, IX-B
E.2.iii.a		X	IV.D.2
E.2.iii.b		X	IV.D.3; IV.D.4
E.2.iv		X	IV.D.6
E.2.v		X	IV.D.6
E.2.vi			NA
E.2.vii			NA
E.2.viii			NA
E.2.ix		X	IV.D.7
E.3.i		X	IV.A.4.a
E.3.ii		X	IV.A.4.b
E.4.i			NA
E.4.ii			NA
E.4.iii			NA
E.4.iv		X	IV.E
E.4.v			NA
E.5.i		X	IV.E.4
E.5.ii		X	IV.E.4.a
E.5.iii		X	IV.E.4.b

### Planning Standard F

Criteria	EOP	ORP	Location
F.1			See F.1.a, F.1.b
F.1.a.i		X	V.A.1; V.A.2; V.A.3; V.A.4
F.1.a.ii		X	V.A.1.b; V.A.2.a; V.A.3.a; V.A.4.a; Attachment V-A
F.1.b.i		X	V.A.1.b; V.A.2.a; V.A.3.a; V.A.4.a; V.A.5.a; V.A.5.b; V.A.6.a; V.A.6.b; V.A.7.d
F.1.b.ii		X	V.A.1.d; V.A.1.e; V.A.2; V.A.3.b; V.A.3.c; V.A.4.b; V.A.4.c; V.A.5.c; V.A.5.d; V.A.6.c; V.A.6.d
F.1.c.i		X	IV.B; Attachment IV-A
F.1.c.ii		X	IV.B.4.b; Attachment IV-A
F.2.i			NA
F.3.i		X	V.B

### Planning Standard G

Criteria	EOP	ORP	Location
G.1.i		X	VI.A.1.a
G.1.ii			NA
G.1.iii		X	VI.A.1.b

## Planning Standard G

Criteria	EOP	ORP	Location
G.1.iv			NA
G.1.v			NA
G.2.i		X	Attachment VI-A
G.2.ii			NA
G.2.iii		X	VI.B.5
G.2.iv		X	VI.B.5.c; VI.B.5.d; VI.B.5.f
G.3.i		X	VI.B.2.b
G.3.ii		X	VI.B.4; VI.B.9
G.3.iii		X	IV.E.2; VI.B.3.b
G.3.iv		X	VI.B.3.d
G.3.a.i		X	VI.B.4
G.4.i		X	IV.E.3.a; VI.B.6
G.4.ii		X	IV.E.1.b.vii; IV.E.1.b.viii; VI.B.6.b; VI.B.6.c
G.4.iii		X	IV.E.3; VI.B.8
G.4.iv			NA
G.5.i			NA
G.5.ii			NA
G.5.iii			NA

## Planning Standard H

Criteria	EOP	ORP	Location
H.1			NA
H.2			NA
H.3			NA
H.3.a			NA
H.4			NA
H.5			NA
H.6.i	X		Base Plan III.3
		X	VII.A.1; Attachment VII-A
H.6.ii		X	VII.A.2
H.6.iii	X		Base Plan III.3.a.ii
		X	VII.A.4
H.6.iv		X	VII.A.3
H.6.v		X	VII.A.4.n
H.6.vi			NA
H.7			NA
H.8			NA
H.9.i		X	VII.B.4
H.9.ii		X	VII.B.1
H.10			NA
H.11.i		X	VII.B.5; Attachment VII-B
H.11.ii		X	VII.B.5; Attachment VII-B
H.11.a.i		X	VII.B.2
H.11.b.i		X	I.F.1.a.iv.3; VII.B.6.a.i; VII.B.6.c.ii; VII.B.6.d.i

## Planning Standard H

Criteria	EOP	ORP	Location
H.11.b.ii		X	I.F.1.a.iv.1; VII.B.6.a.ii; VII.B.6.c.vi; VI.B.6.d.ii
H.11.b.iii		X	VII.B.6.a.ii.3; VII.B.6.c.i; VII.B.6.c.vi.2; VII.6.d.ii.3
H.12.i		X	Attachment VII.B
H.12.ii		X	Attachment VII.B
H.13.i		X	VII.C.1.a; VII.C.2.c
H.13.ii		X	VII.C.1.a; VII.C.1.c
H.13.iii		X	VII.C.1.d; VII.C.1.e; VII.C.1.f; VII.C.1.g; VII.C.2.b

## Planning Standard I

Criteria	EOP	ORP	Location
I.1			NA
I.1.a			NA
I.1.b			NA
I.1.c			NA
I.2.i		X	VIII.B.1.a
I.2.ii		X	VII.C.1.f.iii; VII.C.1.f.iv; Appendix F.2.c – F.2.h
I.3			NA
I.4			NA
I.4.a			NA
I.5.i		X	VIII.B.1.a
I.5.ii		X	VIII.B.4; VIII.B.5.a; VIII.B.5.b
I.6.i		X	VIII.B.2; VIII.D.2
I.6.ii		X	VIII.B.1.a; VIII.B.1.b; VIII.B.5.a; VIII.D.3.a; VIII.D.3.b
I.6.iii		X	VIII.B.5.b; VIII.D.3.e
I.6.iv		X	VIII.B.3.a; VIII.B.3.b
I.6.v		X	VIII.B.3.c; Appendices G.7, H.7, I.7
I.6.vi		X	I.F.1.d.ii.2.a.i; VIII.B.1.d; VIII.B.6.a.ii.5
I.6.vii		X	VIII.B.6.a.i.2
I.6.viii		X	V.A.3.a; VII.B.5.a.v; VIII.B.4.b; Appendix F.4.g
I.6.ix		X	VIII.B.4.a.ii; VIII.B.6.a.i; Appendix F.4.g
I.6.x		X	I.H.5.c.ii.1.a.v; I.H.5.c.iii.1.a.iv; II.A.3.a; Appendix F.2.c
I.6.xi		X	VIII.B.5.d; VIII.D.3.h
I.7.i		X	VIII.B.4.a.i
I.7.ii		X	VIII.B.6.a.i; VIII.B.6.a.i.2; Appendix F.4.g
I.7.iii		X	VIII.B.4.a.ii
I.8.i		X	VIII.E.2; VIII.E.3
I.8.ii		X	VIII.E.4.a; VIII.E.4.b.i; VIII.E.5.a; Appendix F.2.i, F.2.k
I.8.iii		X	VIII.E.4.b; VIII.E.5.b
I.8.iv		X	VIII.E.4.a.ii; Appendix F.2.i, F.2.k
I.8.v		X	VIII.E.4.a.ii
I.8.vi		X	VIII.E.4.c
I.8.vii		X	VIII.E.4.d
I.9.i		X	VIII.B.6.a.i.4.a
I.10.i		X	VIII.F

## Planning Standard I

Criteria	EOP	ORP	Location
I.10.ii		X	VIII.F

## Planning Standard J

Criteria	EOP	ORP	Location
J.1			NA
J.1.a			NA
J.2.i		X	IX.A
J.2.ii			NA
J.2.iii			NA
J.2.iv			NA
J.3			NA
J.4			NA
J.5			NA
J.6.i		X	IX.B.1
J.6.ii		X	IX.B.1.b; IX.B.1.c
J.6.iii		X	IX.B.2.a; IX.B.2.c
J.7.i		X	IX.B.5
J.7.ii		X	IX.B.5.a
J.7.iii		X	IX.B.5.b
J.8.i		X	Appendix D.3.b; Appendix D.3.d; Appendix D.3.f
J.8.a			NA
J.8.b.i		X	Appendix D.3.b; Appendix D.3.d; Appendix D.3.f
J.8.b.ii		X	Appendix D.3.b; Appendix D.3.d; Appendix D.3.f
J.8.b.iii		X	Appendix D.3.b; Appendix D.3.d; Appendix D.3.f
J.8.b.iv		X	Appendix D.3.b; Appendix D.3.d; Appendix D.3.f
J.8.b.v		X	Appendix D.3.b; Appendix D.3.d; Appendix D.3.f
J.9.i		X	IX.B.1.a.ii.5.d; IX.B.1.a.ii.5.e
J.10.i		X	Appendices G.1, G.4, G.6, G.7; Appendices H.1, H.4, H.6, H.7, H.8; Appendices I.1, I.4, I.6, I.7, I.8
J.10.a.i		X	Appendices G.5, H.5, I.5
J.10.b.i		X	Appendices G.3, G.8; Appendices H.3, H.9; Appendices I.3, I.9
J.11.i			NA
J.11.ii			NA
J.11.iii			NA
J.11.iv			NA
J.11.a.i			NA
J.11.a.ii			NA
J.11.a.iii			NA
J.11.a.iv			NA
J.11.a.v			NA
J.11.a.vi			NA
J.11.b.i		X	IX.B.2.b
J.11.b.ii		X	IX.B.2.c.ii
J.11.b.iii		X	IX.B.2.c.ii

## Planning Standard J

Criteria	EOP	ORP	Location
J.11.b.iv		X	IX.B.2.d.iii; IX.B.2.d.iv.1; IX.B.2.d.iv.2
J.11.b.v		X	IX.B.2.d.i; IX.B.2.d.ii
J.11.b.vi		X	IX.B.2.d.iii.4; IX.B.2.d.iv.3
J.11.c.i		X	Appendix D.3.b; Appendix D.3.d; Appendix D.3.f
J.11.c.ii		X	IX.B.3
J.11.c.iii		X	IX.B.3.a.iii; IX.B.3.b.vi; IX.B.3.c.iii.5; Attachment IX-A; Attachment IX-B
J.11.d.i			NA
J.11.d.ii			NA
J.11.d.iii			NA
J.11.d.iv			NA
J.11.d.v			NA
J.11.d.vi			NA
J.11.e.i		X	IX.B.3
J.11.e.ii		X	IX.B.3.a.i; IX.B.3.b.v; IX.B.3.c
J.11.e.iii			NA
J.11.e.iv		X	IX.B.3.a.iii; IX.B.3.b.vi; IX.B.3.c.iii.5; Attachment IX-A; Attachment IX-B
J.11.e.v			NA
J.11.e.vi		X	IX.B.3.a.ii; IX.B.3.b.i; IX.B.3.b.ii; IX.B.3.b.iii; IX.B.3.b.iv; IX.B.3.c.iii.4
J.11.f.i			NA
J.11.f.ii			NA
J.11.f.iii			NA
J.11.g.i		X	IX.B.4
J.11.g.ii		X	IX.B.4
J.11.g.iii		X	IX.B.4
J.12.i		X	IX.C.1.a; IX.C.1.b
J.12.ii		X	IX.C.2
J.12.iii		X	XII.B.4.c; XII.B.4.d; XII.B.4.e; XII.B.4.f; XII.B.4.g
J.12.iv		X	II.A.3.vii; VIII.C.3.f; VIII.D.2.b; VII.D.3.f; IX.C.3.a; IX.C.3.b; XII.B.4.c; XII.B.4.d; XII.B.4.e; XII.B.4.f; XII.B.4.g
J.12.v		X	II.A.3; VII.C.1.g
J.12.vi		X	IX.C.3.a; IX.C.3.b; IX.C.3.c
J.12.vii		X	IX.C.3.b
J.12.viii		X	IX.C.3.c
J.12.ix		X	IX.C.4; Attachments IX-C, IX-D
J.12.x		X	IX.C.3.d; IX.C.3.e
J.12.xi		X	IX.C.5
J.13.i			NA
J.13.ii			NA
J.13.iii			NA
J.13.iv			NA
J.13.v			NA
J.14.i			NA
J.14.ii			NA
J.14.a.i		X	XII.B.8.a
J.14.a.ii		X	XII.B.8.a; XII.B.8.b
J.14.a.iii		X	NA

## Planning Standard J

Criteria	EOP	ORP	Location
J.14.b.i		X	XII.B.8.b
J.14.b.ii			NA
J.14.c.i			XII.B.8.a
J.14.c.ii		X	XII.A.1.c.viii
J.14.d.i			NA
J.14.d.ii			NA
J.14.d.iii			NA
J.14.d.iv			NA
J.14.e.i			NA
J.14.f.i		X	XII.B.8.c
J.14.f.ii		X	XII.B.8.c

## Planning Standard K

Criteria	EOP	ORP	Location
K.1			NA
K.1.a			NA
K.1.b			NA
K.1.c			NA
K.1.d			NA
K.1.e			NA
K.1.f			NA
K.1.g			NA
K.2.i		X	X.A.1; X.A.3; Attachment X-A
K.2.ii		X	X.A.6.a.iii; X.A.6.a.iv
K.2.iii		X	X.A.6
K.2.a			NA
K.2.b.i		X	X.A.3; Attachment X-A
K.2.b.ii		X	X.A.6
K.2.b.iii		X	X.A.6
K.2.b.iv		X	X.A.6.a.viii; Appendix F.4.h
K.2.b.v		X	X.A.7; X.A.8
K.3.i		X	X.B.1.a
K.3.ii		X	X.B.1.a
K.3.iii		X	X.B.1.b; Appendices F.4.h, F.4.1
K.3.iv		X	X.B.2
K.3.v		X	X.B.1.d; X.B.1.f
K.3.vi		X	X.B.1.c; X.B.1.d; X.B.1.f.ii; X.B.1.f.iii; X.B.1.f.iv; X.B.1.g
K.3.a.i		X	X.B.1.f.i
K.3.a.ii		X	X.B.1.f.ii; X.B.1.f.iii; X.B.1.f.iv
K.3.a.iii		X	X.B.1.f.ii; X.B.1.f.iii
K.3.a.iv		X	X.B.1.g
K.3.a.v		X	X.A.6; X.B.1.f.v
K.4.i			NA
K.4.ii			NA

### Planning Standard K

Criteria	EOP	ORP	Location
K.4.iii			NA
K.4.iv			NA
K.4.v			NA
K.4.vi			NA
K.4.vii			NA
K.4.viii			NA
K.4.ix			NA
K.4.x			NA
K.4.xi			NA

### Planning Standard L

Criteria	EOP	ORP	Location
L.1.i			NA
L.1.ii			NA
L.1.iii			NA
L.1.iv			NA
L.2			NA
L.2.a			NA
L.2.b			NA
L.2.c			NA
L.2.d			NA
L.2.e			NA
L.3.i		X	XI.A
L.4.i			NA
L.4.ii			NA
L.4.iii			NA
L.4.iv			NA
L.4.v			NA
L.4.vi			NA
L.4.vii			NA

### Planning Standard M

Criteria	EOP	ORP	Location
M.1.i		X	XII.B
M.1.ii		X	XII.B.6
M.1.iii		X	XII.A
M.1.iv		X	XII.B.9
M.1.a			NA
M.1.b.i			NA
M.1.b.ii			NA
M.1.b.iii			NA
M.1.b.iv			NA
M.1.b.v			NA

## Planning Standard M

Criteria	EOP	ORP	Location
M.1.b.vi			NA
M.2			NA
M.3			NA
M.4.i		X	XII.B.3
M.4.ii		X	XII.B.2
M.4.iii		X	XII.B.2
M.4.iv		X	XII.B.12
M.5.i		X	XII.B.7
M.5.ii			NA
M.5.iii			NA
M.6.i		X	XII.B.14
M.6.ii		X	XII.B.14.j
M.7.i		X	XII.B.4
M.7.ii		X	II.A.3.a
M.7.iii		X	II.A.3.a.ii; II.A.3.a.iii; II.A.3.a.ix
M.8.i		X	XII.B.11.a
M.8.ii		X	XII.B.11.b

## Planning Standard N

Criteria	EOP	ORP	Location
N.1.i		X	XIII.A.1
N.1.a.i		X	XIII.A.2
N.1.b.i		X	XIII.A.3
N.1.c			NA
N.1.d			NA
N.2.i		X	Attachment XIII-A
N.2.a.i		X	XIII.A.5.a
N.2.a.ii		X	XIII.A.5
N.2.b.i		X	XIII.A.6.a
N.2.b.ii		X	XIII.A.6.b
N.2.b.iii		X	XIII.B.4.b
N.3.i		X	XIII.A.7.a
N.3.ii		X	XIII.A.7.b
N.3.a.i		X	XIII.A.7.c.ii
N.3.a.ii		X	XIII.A.7.c.iii
N.3.b.i		X	XIII.A.7.d.ii
N.3.c.i		X	XIII.A.7.e.ii
N.3.c.1.i		X	XIII.A.7.e.v
N.3.c.2.i		X	XIII.A.7.e.iii
N.3.c.2.ii		X	XIII.A.7.e.iv
N.3.d.i			NA
N.3.d.ii			NA
N.3.e			NA
N.4.i		X	XIII.B.1

## Planning Standard N

Criteria	EOP	ORP	Location
N.4.a			NA
N.4.b.i			NA
N.4.c.i		X	XIII.B.2.a
N.4.d.i		X	XIII.B.3.a
N.4.e.i		X	XIII.B.4.a
N.4.e.ii		X	XIII.B.4.b
N.4.f.i		X	XIII.B.5.a
N.4.f.ii		X	XIII.B.5.b
N.4.g			NA
N.4.h			NA
N.4.i			NA
N.4.j			NA
N.4.k			NA

## Planning Standard O

Criteria	EOP	ORP	Location
O.1.i		X	XIV.A.1.e; XIV.A.2.a
O.1.ii		X	XIV.A.1.e; XIV.A.2.a
O.1.iii		X	Attachment XIV-A, Attachment XIV-B, Attachment XIV-C, Attachment XIV-D
O.1.iv			NA
O.1.v		X	XIV.A.1.e; XIV.A.2.a
O.1.vi		X	XIV.A.1.e; XIV.A.2.a
O.1.vii			NA
O.1.viii		X	XIV.A.1.c; XIV.A.1.d; XIV.A.2.a; XIV.A.3.b
O.1.a			NA
O.2			NA
O.2.a			NA
O.2.b			NA

## Planning Standard P

Criteria	EOP	ORP	Location
P.1.i		X	XV.A.3
P.1.ii		X	XV.B
P.2.i		X	XV.A.1
P.3.i		X	XV.A.3
P.4.i		X	XV.C.2
P.4.ii		X	XV.C.2.e; XV.C.2.g
P.4.iii		X	XV.C.2.g; Attachment K
P.4.iv		X	XV.C.2.a.iv; XV.C.2.b.iii
P.4.v		X	XV.C.2.a.i; XV.C.2.a.v
P.5.i		X	Attachment XV-A
P.5.ii		X	XV.C.3
P.5.iii		X	XV.C.3

## Planning Standard P

Criteria	EOP	ORP	Location
P.6.i		X	Appendix D
P.6.ii		X	Appendix D
P.7.i		X	Appendix F
P.7.ii		X	Appendix F
P.8.i		X	Table of Contents
P.8.ii		X	Appendix J
P.9			NA
P.10.i		X	XV.C.1
P.11			NA
P.12			NA

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## Appendix K: Record of Revisions<sup>37</sup>

Date	Summary of Changes
1.31.2023	Complete rewrite to comply with 2019 RPM requirements.
1.31.2024	<p>Section I – deleted OHS authority; added URSB authority; updated agencies’ responsibilities; added Ohio EMA fast-breaker PAR/KI capability; clarified activities as planning, training, emergency response, etc.; merged Ohio EMA and OSHP under DPS</p> <p>Section II – updated II.B based on the 2023 NRIA and agency websites; updated Stafford Act and Price Anderson Act descriptions</p> <p>Section III – removed the SAE PAR</p> <p>Section IV – updated DBNPS Initial and Follow-up Notification form numbers; swapped some responsibilities of State JIC PIO with State JIC Manager; updated Attachments IV-A, IV-B</p> <p>Section V – corrected contacts</p> <p>Section VI – swapped some responsibilities of State JIC PIO with State JIC Manager</p> <p>Section VIII – clarified Sample Team PPE inside and outside of the RZ; added staffing details to Dose Assessment Room; added the use of MS Teams</p> <p>Section IX – removed the SAE PAR, added details for BVPS PAR sectors; included option for MS Teams in lieu of the Informal Line; added TFR information; added additional precautionary protective actions; updated ODNR watercraft inventory</p> <p>Section X – noted cumulative exposure</p> <p>Section XI – no changes</p> <p>Section XII – added note that exceedance of the DRL may allow a year or greater for PAG to be exceeded; added PUCO role to Debris Management</p> <p>Section XIII – noted IPX will cycle every seven years; updated Tables XIII-A, XIII-B</p> <p>Section XIV – added RHAB course</p> <p>Section XV – updated Radiological Analyst training verbiage</p> <p>Appendices – updated Appendix A/Acronyms; updated Appendix C/2017 EPA PAG Manual, updated Appendix D/References; updated Appendix J/Crosswalk</p> <p>All – corrected tense; cleaned up verbiage; updated RadResponder to CBRNResponder, change bars were added to areas with significant changes</p>

<sup>37</sup> NUREG-0654/FEMA-REP-1 R2 Criterion P.4.iii