City of Poquoson

Commonwealth of Virginia

RADIOLOGICAL EMERGENCY RESPONSE PLAN

INGESTION EXPOSURE PATHWAYS

December 2022

UPDATE SCHEDULE

Area Updated	Change Made	Date
Entire Plan	Updated to NUREG 0654, Rep 1, Rev 2, and 2019 RPM	November 2022

1. Contents

2. Foreword

This plan complements and is designed to interface with the Commonwealth of Virginia Radiological Emergency Response Plan (COVRERP), the ***City of Poquoson*** Radiological Emergency Response Plan (if applicable), and the Surry Nuclear Power Station Emergency Plan. Preplanned response actions for each emergency classification level, as well as protective actions delineated herein are compatible with those of the COVRERP. The implementation of the protective actions and procedures prescribed in this Plan provides a reasonable level of preparedness in dealing with radiological emergencies caused by incidents at nuclear reactors or by transportation accidents occurring in ***City of Poquoson*** involving radioactive materials.

3. Purpose

The overall purpose of this plan is to provide guidance for effective emergency response operations in the event of a radiological emergency involving the ingestion exposure pathways. This plan sets forth policies and concepts that serve as the basis for detailed Standing Operating Procedures (SOPs). From these policies and concepts, specific protective actions and other response actions are devised and implemented as the emergency conditions indicate.

The responsibilities of ***City of Poquoson*** are outlined later in this document. Appendixes follow this plan and provide detailed SOPs that ensure that these responsibilities will be met. Other detailed SOPs may be developed and used by individual groups, as needed.

4. Scope

This plan applies to radiological emergencies that may occur within or affect ***City of Poquoson***. An emergency could be caused by events at the Surry Power Station (SPS), other fixed nuclear facilities, or by transportation accidents. This plan may also be implemented to assist neighboring counties, who are responding to such an emergency.

5. Situation

5.1.Potential Sources of Radiological Emergencies

5.1.1. Nuclear Power Plant Reactors

The Surry Power Station (SPS), located on the James River in Surry County, Virginia, is owned and operated by Dominion Energy. Two pressurized water reactors generate an electrical output of 855.2 megawatts each.

The planning for radiological emergencies at SPS concentrates on a response to an airborne release of radioactive materials. If an incident were to occur, this type of release is the most likely and allows the least time for reaction

5.1.2. Transportation Accidents

Another potential source for a radiological emergency is a transportation accident involving shipments of radioactive materials being transported in and through ***City of Poquoson***. Shipment of radioactive materials within the State in support of fixed nuclear facilities, other users of radioactive materials, and the Department of Defense facilities raises the possibility of radioactive emergencies caused by transportation accidents. The primary mode of transporting radioactive materials is by truck, although shipments may be by rail, ship, or aircraft.

5.1.3. Nuclear Weapons Accident

In a nuclear weapon accident, health and safety, public affairs, classified information security, and weapons recovery are the critical components and concerns facing response organizations. Other radiological emergency response aspects that must be addressed include medical assistance, security, logistics, legal implications, site restoration, communications, and response

team integration and coordination. The Commonwealth of Virginia Department of Emergency Management will manage overall coordination of these operations in conjunction with the lead or Cognizant Federal Agency (CFA).

5.2.Nature of the Radiological Hazard

Harmful radiation cannot be detected by the human senses. Detection of its presence depends on instrumentation. In an atmospheric release from SPS, two methods of exposure would be possible. External radiation is exposure from an external source. This is commonly referred to as whole body exposure. Along with this external exposure, there could be internal exposure. This would occur if radioactive material were to be inhaled or ingested.

The amount of radiation a person might receive, referred to as the projected dose, and is dependent on several factors. For instance, the closer the person is to a radioactive source and the longer that person stays there, the higher the projected dose would be. At SPS many other factors are taken into consideration when determining the projected dose, which is the centerpiece in deciding on what protective actions should be recommended to the State. These include the quantity and the isotopic and chemical composition of the radioactive material that could be or has been released. Also considered are the atmospheric conditions, to include stability, wind speed and direction.

Health effects from radiation vary depending on the amount of harmful radiation to which a person is exposed. If there is any exposure resulting from an emergency at SPS it is likely to be so small that no health effects will be evident. In the unlikely event that a person is exposed to a high radiation dose, from any source, the effects would fall into two categories.

- Early Effects – Immediate effects from an extremely high radiation dose would occur within the first two or three months. These effects may include nausea, fatigue, vomiting, diarrhea, loss of appetite, loss of hair, temporary sterility, and clinically detectable changes such as chromosomal changes in skin.
- Delayed Effects - Delayed effects from an extremely high radiation dose would not appear until years later. These may include somatic effects, such as increase in the incidence of cancer among those exposed or genetic effects such as increased prenatal mortality or heredity defects in future generations.

5.3.Scope of Potential Radiological Emergencies

The Nuclear Regulatory Commission (NRC) and Federal Emergency Management Agency (FEMA) have defined two Emergency Planning Zones (EPZ) to be used for planning emergency response actions in response to an emergency at a fixed nuclear power station

5.3.1. Plume Exposure Emergency Planning Zone

The first, the Plume Exposure EPZ, is defined as approximately a 10-mile radius surrounding SPS. See Attachment 1. The principal exposure sources from this EPZ would be whole body external exposure to gamma radiation from deposited material and inhalation exposure from the passing radioactive plume. The size of this EPZ is based on the following considerations:

- Projected doses from the traditional design basis accident would not exceed protective action guide levels outside of the zone.
- Projected doses from most core melt sequences would not exceed protective action guide levels outside the zone.
- For the worst core melt sequences, immediate life-threatening doses would generally not occur outside the zone.
- Detailed planning within 10 miles would provide a substantial base for expansion of response efforts in the event that this proved necessary.
- A joint NRC/Environmental Protection Agency (EPA) Task Force concluded that it would be unlikely that any protective actions for the Plume Exposure Pathway would be required beyond 10 miles from the facility. Also, that the ten-mile Plume Exposure Pathway Emergency Planning Zone is of sufficient size for actions within this zone to provide for substantial reduction in early severe health effects (injuries or death) in the event of the worst-case core melt accident.

5.3.2. Ingestion Pathway Emergency Planning Zone

The second, the Ingestion Pathway EPZ, is defined as approximately a 50-mile radius surrounding SPS that includes the plume exposure EPZ. See Attachment 1. The size of this EPZ was selected because:

- The downwind range within which significant contamination could occur would generally be limited to about 50 miles from a power station because of wind shifts during the release and travel periods.
- There may be conversion of atmospheric-suspended iodine to chemical forms that do not readily enter the Ingestion Pathway.
- Much of any particulate material in a radioactive plume would have been deposited on the ground within 50 miles of the facility.
- The likelihood of exceeding Ingestion Pathway protective action guide levels at 50 miles is comparable to the likelihood of exceeding Plume Exposure Pathway protective action guide levels at 10 miles.

5.3.3. Time Frames

A nuclear incident can be broken into three time phases: emergency, intermediate, and recovery.

1. Emergency Phase - During this phase actions are taken to respond to the incident. The time between the onset of accident conditions and the start of a major release could range in the order of one-half hour to several hours. The release may last from one-half hour (short-term release) to a few days (continuous release). Protective actions based on accident assessment are implemented. See Section VIII Concept of Operations below.
2. Intermediate Phase - This phase begins when the source and release have been brought under control and initial environmental measurements are available on which to base additional protective actions.

3. Recovery Phase - During this phase actions are taken to reduce radiation levels to acceptable levels.

5.4. Protection against the Hazard

During the emergency phase the primary concern is protecting the public within the plume exposure EPZ from inhalation and from direct whole body exposure to radioactive materials. Subsequent protective actions may also be required to reduce exposure through the ingestion pathway EPZ. The goal is maximum protection of the public with the least cost and disruption.

5.5. Area Identification

The area that could potentially be involved in a radiological emergency at SPS is referred to in several different ways. Terms such as Plume Exposure EPZ, Ingestion Exposure EPZ, Sectors, and Protective Action Zones are used to refer to different areas.

5.5.1. Plume Exposure EPZ

The most immediate actions would be those to protect the public within the 10-mile EPZ. Within this distance there is more of a chance of receiving direct whole body exposure to radiation from the plume and inhaling radioactive materials in the plume that would be higher than EPA protective action levels.

5.5.2. Ingestion Exposure EPZ

Less immediate actions might be necessary within about 50 miles of the plant because the immediate exposure resulting from the accident would be less than EPA protective action levels for the radiation plume. The primary concern is long term exposure resulting from the ingestion of contaminated food and water. Attachment 1 provides a map for each ingestion exposure pathway EPZ.

5.5.3. Sectors

To facilitate identification of areas that may be affected by a radiological emergency, the area around a facility is divided into sixteen sectors labeled alphabetically, each 22-1/2 degrees, starting at true north of the facility and continuing clockwise around the facility. Sector nomenclature is primarily utilized by the utility but would also be applicable to ingestion pathway jurisdictions.

5.5.4. Protective Action Zones

To facilitate notification and selective protective actions for the public, protective action zones (PAZs) have been established within a 10-mile radius of SPS. The ingestion EPZ outside of the plume EPZ is not divided into PAZs.

6. Mission

The mission of **City of Poquoson** government is to develop and maintain capabilities and procedures for emergency operations in response to radiological emergencies at fixed nuclear facilities and transportation accidents involving radioactive materials.

7. Organization

Generally, the Virginia Department of Emergency Management (VDEM) in cooperation with the Virginia Department of Health (VDH), Virginia Department of Agriculture and Consumer Services (VDACS) and the Virginia Cooperative Extension Service will monitor radiation levels and broadcast recommended actions based on information gathered by radiation monitoring teams.

Federal and State agencies will conduct damage assessments in potentially affected areas and will inform farmers, growers and producers of any actions that should be undertaken. The local government will continue to be responsible for specific local government actions and will be apprised of Federal and State actions within **City of Poquoson**.

In a radiological emergency involving a commercial nuclear power station within Virginia or one that impacts any one or more localities within the Commonwealth of Virginia, the Governor, who functions as the Director of Emergency Management, will make all protective action decisions in coordination with the impacted local governments. The decision(s) will be carried out by the State Coordinator of Emergency Management and implemented in accordance with coordination and operational procedures of the Virginia Department of Emergency Management under authority of the Virginia Emergency Services and Disaster Law, as amended.

7.1. City of Poquoson

City of Poquoson's organization for response to a radiological emergency is essentially the same as that for other peacetime disaster operations. This organization is described in **City of Poquoson's** Emergency Operations Plan. Within this government structure, **City of Poquoson** Executive serves as the County Director of Emergency Management, directing the response through the Coordinator of Emergency Management. The Coordinator is responsible for coordinating the overall response of this jurisdiction.

City of Poquoson agencies provide support and assistance as requested by either the Director or the Coordinator of Emergency Management. Their capabilities, as well as those of the Office of Emergency Management are depicted below:

The task assignments within **City of Poquoson** are as follows:

7.1.1. Office of Emergency Management

- Supervise the operation of **City of Poquoson** Emergency Operations Center (EOC). An alternate facility may be designated for the purpose of providing direction and coordination of response efforts within the ingestion pathway.
- Provide direction and control for the emergency response by **City of Poquoson**.

- Provide for coordinated response actions with local extension agents/damage assessment teams.
- Provide population (estimate) within the ingestion pathway.
- Serve as **City of Poquoson** point of contact with State agencies.
- Request assistance from the State, as necessary.
- Coordinate media relation functions in coordination with the Virginia Emergency Support Team (VEST) Joint Information Center (JIC). See Appendix B (Public Information Procedures) for contact information for the VEST JIC. Always contact the VEOC unless another number is published for this purpose.
- Coordinate radiological emergency preparedness through the following functions:
  - Provide training
  - Coordinate training provided by the State
  - Review annually the jurisdiction plan, procedure, and written agreements.

7.1.2. Law Enforcement

- Provide a decision-making official to **City of Poquoson** EOC.
- Provide security at **City of Poquoson** EOC, as directed.
- Provide personnel for staffing of Access Control Points (ACP), as available.
- Assist the Coordinator of Emergency Management in identifying the need for State support.

7.1.3. Public Safety Answering Point (PSAP)

- Operate the Emergency Communications Center 24 hours a day.
- Receive notification of a radiological emergency and verify that notification, if necessary.
- Receive notification of a radiological emergency and notify the Coordinator of Emergency Management or their designee and additional officials per SOPs

7.1.4. Fire and Rescue Services

- Provide emergency services support within capabilities and in accordance with mission orders.

7.1.5. Public Information

- Provide for adequate means of disseminating public instruction and emergency information.
- In coordination with VDEM, secure and distribute information and instructions on ingestion exposure pathway protective actions.
- Follow procedures as outlined in Appendix B.

7.1.6. Extension Agent

- Provide listings of any dairy, meat, poultry, fisheries, fruit and vegetable growers, grain producers, food processing plants or other agricultural commodity or related operation

within the ingestion exposure pathway EPZ(s) that may have an economic impact on the community.

- Provide advice to the County on how to minimize loss to agricultural resources.
- Provide information and assistance to farmers and others in preparing for and returning to normal after a radiological emergency.
- Serve as a member of the Local Food and Agriculture Council

7.1.7. **Peninsula's** Health Department

- Provide listing of food stores, open wells and cisterns, and other consumer food operations that are located within the ingestion pathway.
- Provide an individual to **City of Poquoson** EOC who will be available to coordinate response activities and give technical assistance as necessary

7.1.8. Water Works/Public Utilities

- Identify open reservoirs and unprotected water supply systems and coordinate or monitor the implementation of recommended protective measures.
- Coordinate with applicable water providers for the implementation of protective measures.

7.1.9. Radiological/Hazardous Materials Officer

- Provide personnel to accompany Federal and State Sampling Teams provided local personnel if available and trained for such mission.

7.1.10. Office of **City of Poquoson** Executive/Finance Department

- Maintain records of all reasonable and necessary costs incurred in providing radiological emergency response and recovery operations.

7.2.Volunteer and Quasi-Public Organizations

Volunteer and quasi-public organizations will provide support within their capabilities, as requested by either the Director or the Coordinator of Emergency Management.

7.3. Commonwealth of Virginia

State agencies will provide support and assistance as requested by **City of Poquoson**. The capabilities of those State agencies that would play primary roles during the intermediate and recovery phases of a radiological emergency are outlined below. The capabilities of other State agencies whose assistance may be requested are contained in the Commonwealth of Virginia Emergency Operations Plan (COVEOP), Technical support Document #1 – Radiological Emergency Response.

7.3.1. Virginia Department of Agriculture and Consumer Services (VDACS):

- Obtain milk samples from dairy farms, meat samples from packing firms, and food samples from retail and wholesale establishments located within 50 miles of the nuclear

power station where the radiological accident occurred and provide them to the Division of Consolidated Laboratory Services or other facility for analysis*.

- Coordinate the control and disposition of radiologically contaminated food, milk, and animal feed*.
- Coordinate the provision of uncontaminated feed for dairy cattle and other farm animals, if required*.
- Coordinate the disposition of farm animals affected by radiological contamination*.
- Provide advice on and coordinate the disposition or use of farm crops, lands, and equipment that have been radiologically contaminated*.
- Assist the Virginia Department of Health in radiological monitoring and in obtaining samples for accident assessment*.
- Provide a decision-making official to the Virginia EOC.

*Actions performed by the VDACS in the ingestion exposure EPZs will be contingent upon radiation levels being deemed acceptable to the general populous by qualified persons from the Virginia Department of Health and in accordance with established limits.

7.3.2. Division of Consolidated Laboratory Services (Department of General Services):

- Provide emergency laboratory services to State agencies and political subdivisions as required.
- Provide a decision-making official at the agency office to be in continuous contact with the Virginia EOC.

7.3.3. Virginia Department of Emergency Management (VDEM):

- Operate the Virginia Emergency Operations Center (EOC).
- Provide a VDEM State On-Scene Coordinator to the Corporate Emergency Response Center (CERC).
- Provide alert and warning in coordination with the State Police and the operators of fixed nuclear facilities.
- Recommend precautionary and protective actions in conjunction with applicable state agencies for affected areas.
- Receives protective action decisions and makes appropriate notifications to affected localities.
- Provide emergency communications.
- Assist political subdivisions in development and maintenance of local Radiological Emergency Response Plans.
- Coordinate emergency response actions of Federal and State agencies.
- Notify the following Federal agencies and Fixed Nuclear Facilities of a radiological emergency:
    - Notify Federal Aviation Administration of a radiological emergency and request that aircraft be instructed to avoid the contaminated airspace until notified otherwise.

- Notify railway operators of a radiological emergency at Surry Power Station and request that rail service in the affected area be discontinued temporarily, as needed.
- Notify Joint Base Langley-Eustis of a radiological emergency that could affect the health a safety of personnel stationed at that installation (SPS Only).
- Notify the Virginia Department of Transportation (VDOT), Jamestown-Scotland Ferry to request termination of operations or limiting operations to emergency vehicles only (SPS Only).
- Notify U.S. Coast Guard Sector Hampton Roads, Norfolk Naval Station and Shipyard, or Newport News Shipyard and Shipbuilding of a radiological emergency at SPS and request establishment of traffic control of boats and ships on the James or Elizabeth River(s) in the vicinity of SPS.
- Notify Virginia Department of Health (VDH) Office of Radiological Health immediately of all classes of accidents and incidents reported by operators of nuclear facilities.
- Notify all other State agencies and support organizations that have emergency task assignments identified in the Commonwealth of Virginia Emergency Operations Plan (COVEOP), Hazard-Specific Annex#1 – Radiological Emergency Response.
- Notify the Federal Emergency Management Agency (FEMA) at any emergency classification level at a nuclear power facility and provide updated information; and request assistance, if required.
- Notify the State of Maryland EOC (NAPS Incidents) and State of North Carolina EOC (SPS Incidents) of a radiological accident at the North Anna or Surry Power Station that results in either a declaration of a Site Area Emergency or General Emergency. Receive notification from Maryland EOC for a radiological incident at Calvert Cliffs Nuclear Power Plant.

- Provide public information, assisted by the Virginia Department of Health and the nuclear facility Licensee.
- Coordinate radiological emergency response training and conduct annual training exercises.
- Request assistance from the Federal government in accordance with the National Response Framework and Incident Specific Radiological/Nuclear Annex.

7.3.4. Department of Environmental Quality (DEQ):

- Conduct and provide air quality monitoring data and analysis from existing air monitoring network to the Virginia Department of Health and Virginia Department of Emergency Management as requested.
- Provide assistance in collection and analysis of meteorological data.
- Collect water samples from rivers and lakes located within the ingestion pathway EPZ for assessment*.
- Collect fish samples from waters adjacent to the nuclear facility for assessment*.
- Assist VDH in radiological monitoring and accident assessment*.

- Provide a decision-making official at the agency office to be in continuous contact with the Virginia EOC.

*Actions performed by the DEQ in the ingestion exposure EPZs will be contingent upon radiation levels being deemed acceptable to the general populous by qualified persons from the Virginia Department of Health and in accordance with established limits.

7.3.5. Department Of Wildlife Resources (DWR):

- Collecting samples of wildlife and fish suspected of being radiological contaminated for analysis by VDH*.
- Provide back-up communications to support emergency response activities.
- Provide small boats with motors for administrative, logistical, and operational use of waterways contiguous to nuclear power stations.
- Assist VDH in radiological monitoring and accident assessment*.
- Assist with traffic control of boats and/or ships affected navigable water ways near Surry, North Anna and/or Calvert Cliffs Nuclear Power Stations, as needed.
- Provide a decision-making official at the agency office to be in continuous contact with the Virginia EOC.

*Actions performed by DWR in the ingestion exposure EPZs will be contingent upon radiation levels being deemed acceptable to the general populous by qualified persons from the Virginia Department of Health and in accordance with established limits.

7.3.6. Virginia Department of Health (VDH):

- Perform accident assessment, to include:
  - Provision of the Radiological Emergency Response Team (RERT) for radiological assessment and response.
  - Determining actual off-site radiological consequences.
  - Record keeping and documentation of off-site effects of the accident.
  - Assess the radiological consequences for the ingestion exposure pathway, relate them to the appropriate Protective Action Guides (PAGs), and make timely, appropriate protective action recommendations to mitigate exposure from the ingestion pathway.
  - Advise State and local officials on the implementation of pertinent protective actions based on accident assessment.
  - Coordinate with other State agencies for providing radiological monitoring teams and furnishing appropriate protective clothing, dosimeters, and monitoring equipment.
- Establish radiological exposure control for:
  - State and local government radiological emergency response personnel.
  - Other emergency response personnel.
  - The affected populace.

  Note: After the entry into the Intermediate Phase, the exposure limit of Emergency Workers is that of occupational radiation workers of 5 REM/year.

- Develop and provide recommendations to provide appropriate controls to isolate food to prevent its introduction into commerce.
- Determine whether condemnation or other disposition of contaminated foods is appropriate.
- Determine the availability of and coordinate the use of medical facilities that could accommodate and care for persons involved in a radiological emergency who may require medical care.
- Provide other emergency health services.
- Develop criteria for establishing controlled areas or zones surrounding an accident site, including ingress/egress control provisions and perimeter radiological surveillance of persons entering or leaving controlled zones within the plume and ingestion pathways.
- Request and coordinate Federal assistance for monitoring and assessment provided under the National Response Framework and the Incident Specific Radiological/Nuclear Annex and provide administrative and logistical support and liaison to Federal personnel on request.
- Request and coordinate assistance for radiological monitoring and assessment under the Southern Mutual Radiation Assessment Plan (SMRAP).
- Develop criteria for re-entry into homes and evacuated areas.
- Advise local governments when re-entry criteria have been met
- Develop and conduct, in coordination with the Virginia Department of Emergency Management, training programs for medical support personnel who may be called upon to care for off-site victims of a radiological accident and assist in conducting other radiological training programs.
- Procure, store, and administer the issuance of potassium iodide.
- Provide Radiological Health Program staff persons and advisors and a decision-making official from the Virginia Office of Emergency Medical Services (OEMS) to the Virginia EOC.

7.3.7. Virginia Marine Resources Commission (VMRC):

- In case of a radiological emergency at the Surry Power Station, provide boats and assist in warning and evacuation, as required.

7.3.8. Virginia Institute of Marine Science (VIMS):

- Assist in environmental sampling of shellfish, finfish, other marine life, and silt.
- Assist the VDEM in assessing initial damage to marine resources.

7.3.9. Virginia Department of Transportation (VDOT):

- Stock or identify locations where necessary barricade material and signs may be obtained to limit access to designated restricted areas*.
- Deliver or locate barricade materials and signs as directed by the Virginia Department of Health-Radiological Health Program, and in coordination with the State and local law enforcement agencies and the VDEM.

*This action may not apply to local jurisdictions beyond the 10-mile EPZ.

7.3.10. Virginia Cooperative Extension:

- Provide advice to State and local officials on how to minimize losses to agricultural resources from radiation effects.
- Provide information and assistance to farmers and others to aid them in preparing for and returning to normal after a radiological emergency.
- Conduct damage assessments in potentially affected areas and, in coordination with the VDEM and the respective local government(s), inform farmers, growers and producers of any actions that should be undertaken.
- Provide damage assessment reports to VDEM and the respective local government(s).
- Serve as a member of both the State and Local Food and Agriculture Council and respond to both local and State requests for help in preventing damage, assessing damage, and providing information to help people recover from a disaster.

7.3.11. Virginia State Police (VSP):

- Provide Law enforcement personnel and services throughout the Commonwealth
- Assist with local law enforcement to provide personnel and specialized services to include, but not limited to: Field Communications, Aircraft support, and Command Post Resources
- Provide a coordinated response effort during disaster incidents through the allocation of personnel and security staffing, traffic control and evacuation procedures.
- Coordinate with other ESF 13 agencies in intelligence sharing and the allocation of specific resources, as necessary.

7.3.12. Department Of Military Affairs (DMA):

- Physical security/critical infrastructure protection to including building security and sensitive site protection.
- Civil disturbance response to include show of force and riot control agents.
- Security and protection for dignitaries and work crews.
- Traffic direction and control.
- Escort emergency equipment, support joint patrols and ride-along passengers, and transport law enforcement.
- Provide area security and patrols.
- Provide security at custody facilities.
- Provide reserve, quick reaction forces.

7.3.13. Licensee of the Fixed Nuclear Facility:

- Coordinate and interface nuclear facility Emergency Plans with State and local government emergency operations plans.
- Perform the initial assessment of a radiological accident.
- Conduct initial and on-going environmental sampling within the plume and ingestion exposure pathways.

- Notify State and affected local governments of a radiological emergency.
- Establish the Corporate Emergency Response Center (CERC).
- Establish a Joint Information Center (operator based) and coordinate news releases with the VEST JIC.
- Notify and provide accident response and recovery coordination with the Nuclear Regulatory Commission (NRC) and nuclear industry organizations, including nuclear insurers.
- Provide a representative to the Virginia Emergency Operations Center, upon request.

8. Concept of Operations

8.1. Emergency Classification Levels for Nuclear Facilities

Four emergency classification levels have been established for the purpose of reporting and defining preplanned actions to be taken in response to emergencies at fixed nuclear facilities. These emergency classification levels could develop sequentially. However, the first indication of a problem could be a higher level than the UNUSUAL EVENT.

8.1.1. Notification of Unusual Event

Unusual events are in process or have occurred which indicate a potential degradation of the level of safety of the plant. No releases of radioactive material requiring off-site response or monitoring are expected unless further degradation of safety systems occurs.

8.1.2. Alert

Events are in process or have occurred which involve an actual or potential substantial degradation of the level of safety of the plant. Any releases expected to be limited to small fractions of the EPZ Protective Action Guideline exposure levels.

8.1.3. Site Area Emergency

Events are in process or have occurred which involve actual or likely major failures of plant functions needed for protection of the public. Any releases not expected to exceed EPA Protective Action Guideline exposure levels except near site boundary.

8.1.4. General Emergency

Events are in process or have occurred which involve actual or imminent substantial core degradation or melting with potential for loss of containment integrity. Releases can be reasonably expected to exceed EPA Protective Action Guideline exposure levels off-site for more than the immediate site area.

8.2.Notification

Local governments within the plume (10-mile) EPZ and the Virginia EOC will be notified by the operator of SPS when any one of the four emergency classification levels has been declared at the facility.

The Virginia EOC will notify all jurisdictions within the ingestion exposure pathway and adjacent states of a radiological emergency occurring at the Surry Power Station via VCIN. This notification will be made when a Site Area Emergency is declared, if not earlier.

The Virginia Criminal Information Network (VCIN) is the primary means of communicating nuclear power plant emergency information to non-EPZ local government agencies. The VCIN functions as a service facility under the management control of the Virginia Department of State Police, providing operational support to the entire criminal justice community. The primary mission of VCIN is to provide a means of rapid communications for criminal justice agencies throughout Virginia. VCIN is available to any department or division of state government meeting the definition of a criminal justice agency as contained in Virginia laws.

Back-up communications for warning of those local governments (ingestion pathway jurisdictions) not immediately affected by the radiological emergency will be by commercial telephone, internet, or cellular.

The VEOC will transmit to each local organization recommended protective measures based upon protective action guides (PAGs) and other criteria. This shall be consistent with the recommendations of the U.S. Environmental Protection Agency (EPA) regarding exposure resulting from passage of radiological airborne plumes and with other Federal recommendations regarding radioactive contamination of human foods and animal feeds.

8.3.Alerting

8.3.1. Plume Exposure Pathway

The primary alerting method to alert residents and transient populations within the plume exposure pathway EPZ is the Wireless Emergency Alerts (WEA) through the Integrated Public Alert and Warning System (IPAWS). WEA broadcasts alerts and warnings from cellular towers to any WEA-enabled mobile device within a geographically targeted area, alerting and notifying individuals of an emergency. WEA messages are short emergency messages with a maximum of 90 characters or 360 characters for some cellular phones. These messages are prepared and transmitted by VDEM using IPAWS-compliant alerting origination software that generates the message in Common Alerting Protocol (CAP) format and then sends to the IPAWS Open Platform for Emergency Networks (IPAWSOPEN), which routes the message to participating wireless carriers. The participating wireless carriers then push the alerts to mobile devices in the specified geographical target area. The messages are periodically transmitted to mobile devices for an extended duration, as determined by VDEM, to maximize the possibility of being received by members of the public. Messages can be received indoors or outdoors, heard, and felt through a special tone and vibration, both repeated twice. These messages direct individuals to turn on broadcast stations or communications media to receive additional information and instruction in the event of an emergency at Surry Power Station (SPS).

8.3.2. Ingestion Exposure Pathway

The local jurisdictions within the ingestion exposure pathway will be notified by the Virginia EOC. The PSAP Receiving the notification of a radiological emergency will then notify the Coordinator of Emergency Management or their designee and additional officials per SOPs.

8.4.Accident Assessment

8.4.1. Emergency Phase

Dominion Energy will provide initial assessment of the emergency at the SPS based on the control room's instrumentation. This initial assessment will include a projection of off-site consequences, and if indicated, recommended protective actions. The Office of Radiological Health officials located in the CERC will review the initial assessment. Ongoing assessment will be made by the Office of Radiological Health in cooperation with the Dominion Energy Health Physics, based on on-site instrumentation, meteorological conditions, and off-site radiation monitoring reports provided by State field monitoring teams.

8.4.2. Intermediate and Recovery Phase

Environmental sampling will be performed within the ingestion pathway to detect any radiological contamination. The sampling is conducted to protect the public from consumption of contaminated food and water and to ensure that adequate protective actions have been implemented. The Virginia Department of Health's Office of Radiological Health (ORH) has developed an Initial Environmental Sampling Plan covering the entire Ingestion Pathway EPZ for both SPS. If necessary, ORH will develop a more extensive sample plan in coordination with other State agencies. Actual sampling will be performed by various State agencies and will include dairy products, produce, water, food processors, fish, shellfish, soil and vegetation. Analysis of samples will be conducted by the Division of Consolidated Laboratory Services or at the ORH mobile laboratory. Results from the sample analyses will be used to determine protective actions. In accordance with the 1998 FDA guidance, some embargoes may be put into effect until sampling can be completed.

8.5. Exposure Limits

8.5.1. General Public – Emergency Phase

Based on Environmental Protection Agency (EPA) guidelines, the State has developed an exposure limit for the general public of 1 rem TEDE or 5 rem Thyroid CDE. If accident assessment indicates that the projected dose for any segment of the general public during the emergency phase is 1 rem or above, the State will recommend evacuation. In the case of special populations (e.g. those who are not readily mobile) sheltering may be the preferred protective action and may be recommended by the State up to a projected dose of 5 rem TEDE or 25 rem Thyroid CDE. Also, if there are adverse conditions the general public may be sheltered up to a projected dose of 5 rem TEDE or 25 rem Thyroid CDE. Under adverse conditions special populations may be sheltered up to 10 rem TEDE or 50 rem Thyroid CDE.

Protective Action	Normal Conditions	Competing Disasters

Evacuate General Populace	1 rem TEDE	5 rem TEDE
	5 rem Thyroid CDE	25 rem Thyroid CDE
Evacuate Special Populations	5 rem TEDE	10 rem TEDE
	25 rem Thyroid CDE	50 rem Thyroid CDE

Examples of situations or groups for which evacuation might not be appropriate at 1 rem TEDE include:

- The presence of severe weather.
- Competing disasters.
- Institutionalized persons who are not readily mobile; and
- Local physical factors that impede evacuation.

The State also has the flexibility to recommend protective actions at levels less than these exposure limits if such action is deemed prudent. There is no specific minimum level for the recommendation of a sheltering protective action.

8.5.2. General Public – Intermediate and Recovery Phases

The principal pathways for exposure of the public occupying locations contaminated by deposited radioactivity are expected to be exposure of the whole body to external gamma radiation from deposited radioactive materials (ground shine) and internal exposure from the inhalation of re-suspended materials. For reactor incidents, external gamma radiation is expected to be the dominant source.

Additional exposure could be from ingestion of contaminated water or foods such as milk or fresh vegetables. Early protective actions to minimize exposure or subsequent contamination of milk and other supplies would include area monitoring to detect contamination and putting cows on stored feed and protected source of water. Other potentially significant exposure pathways include exposure to beta radiation from surface contamination and direct contact with contaminated soil. These pathways are not expected to be controlling for reactor incidents.

EPA has also developed guidelines on exposure for the intermediate and recovery phases. Environmental sampling will be used to project the dose of persons living in an affected area. Relocation is warranted when the projected sum of the dose equivalent from external gamma radiation and the Committed Effective Dose Equivalent from inhalation of re-suspended radionuclides exceeds 2 rem in the first year.

Intermediate Phase	
Protective Action	Projected Dose During First Year
Relocate Population	> 2 rem

Apply simple dose reduction techniques < 2 rem	

Longer-term objectives call for doses in any single year after the first not to exceed 0.5 rem and the cumulative dose over 50 years (including the first and second years) to not exceed 5 rem.

8.5.3. Emergency Workers – Intermediate Phase

For Emergency Workers or individuals that must enter the Restricted Zone, the exposure limit for the intermediate phase is that of an occupational radiation worker of 5 REM/year. Any exposure received during the emergency phase does not apply to this new exposure limit.

Potassium Iodide (KI)

Used to protect your thyroid from radiation. Only take when instructed to. The State Health Commissioner or the local Health Director will provide instructions to take KI. The General Public should take the KI dosage as directed by local Health Department personnel at the Evacuation Assembly Center. If you are pregnant, nursing, or allergic to iodine, do not take KI. Emergency workers should take 130mg (one [1] 130mg tablet or two [2] 65mg tablets) daily, not to exceed 130mg per day for up to ten [10] days. VDH will determine the need to administer potassium iodide through the evaluation of projected dose and actual thyroid dose rates.

In order for emergency workers to monitor their own exposure the TEDE dose limit will be divided by an exposure control ratio. The exposure control ratio is used to compensate for the radiation dose that is not measurable by a self-reading dosimeter. This ratio is initially set at 2 and is based on default accident source terms. This ratio will be adjusted as the accident progresses and will be based on the accident type, once known and sample analysis performed by the utility.

VDH/ORH will provide authorization, when needed, for any State emergency worker to exceed the 5 R turn back level during an emergency. An emergency worker will not be permitted to exceed 25 R under any circumstances, other than voluntary lifesaving missions.

VDH/ORH will provide exposure control in a manner that maintains exposure of emergency workers to levels as low as reasonably achievable.

VDH/ORH will provide a Radiological Liaison/Exposure Control Officer at the State EOC to advise and assist local governments in matters relating to dosimetry and radiation exposure.

Authorization for local emergency workers to exceed turn back limits shall rest with the local Director of Emergency Management, or Designee upon consultation with subject matter experts.

8.6. Protective Actions

On-site protective actions within the Surry Power Station site boundary are the responsibility of Dominion Energy.

Off-site protective actions will be based, in part, on recommendations from Dominion Energy and other appropriate agencies. Protective actions will be substantiated, when possible, by accident assessment performed by the Virginia Department of Health. However, if Dominion Energy reports a GENERAL EMERGENCY, immediate evacuation may be recommended before any independent accident assessment is performed by the State. Any recommended protective actions will be transmitted to the impacted local governments by the State. The implementation of protective actions beyond the site boundary but within a 10-mile radius of the facility is the primary responsibility of the affected local governments.

Additional information about the basis, rational and methodology used to make Protective Action Recommendations (PAR) can be found in the Commonwealth of Virginia Radiological Emergency Response Plan, as amended. Protective Action Decisions (PADs) are based on a review of the PAR with state and local officials. The process for implementing and coordinating PADs with all applicable jurisdictions is described in the Commonwealth of Virginia Radiological Emergency Response Plan, as amended.

Within the Ingestion Exposure Pathway EPZ, accident assessment and the coordination of emergency response, including protective actions, is the responsibility of the Virginia Department of Emergency Management (VDEM) and the Virginia Health Department, in cooperation with the Virginia Department of Agriculture and Consumer Services, Virginia Department of Environmental Quality (Water Programs), Virginia Department of Wildlife Resources, and the Virginia Cooperative Extension Service.

One or several of the following protective actions may be taken to avoid or reduce dose.

8.6.1. Evacuation

Evacuation utilized within the plume EPZ, is the immediate departure of persons within a certain area. See the section on Exposure Limits for more information.

8.6.2. Shelter in Place

Shelter in place utilized within the plume EPZ, is the action of remaining in dwellings with windows and doors closed, ventilation turned off and other air intake areas covered (e.g., fireplace).

8.6.3. Traffic - Access Control

Traffic control points are established to expedite traffic away from the affected area. Access to the area will be restricted until it is determined to be safe to reenter. This will prevent persons from acquiring additional exposure or becoming contaminated.

8.6.4. Personnel Monitoring and Decontamination

If it is suspected that persons were exposed to radiation, it will be recommended that those persons proceed to an Evacuation Assembly Center (EAC) so that they can be monitored for possible contamination. Decontamination will be performed by the staff at the EAC. If their belongings or vehicles are contaminated, they will be decontaminated as time permits.

8.6.5. Use of Radioprotective Drugs for Emergency Workers

Potassium iodide, a radioprotective drug, might be utilized for emergency workers performing functions within the plume to prevent damage to the thyroid. Since potassium iodide is only used in the case of direct exposure to the plume it is not normally a concern beyond the plume (10-mile) EPZ.

8.6.6. Relocation

Relocation is a protective action, taken in the intermediate phase, through which individuals not evacuated during the emergency phase are asked to vacate a contaminated area to avoid chronic radiation exposure from deposited radioactive material.

8.6.7. Pasturing, Feed And Water Control For Farm Animals

Farmers could be instructed to move farm animals into a shelter and to give them food and water from protected sources. The primary concern should be given to dairy animals and poultry. These precautions will lessen the possibility of the uptake of radioactive materials by the animals.

8.6.8. Food Products, Water, And Milk Control

Protective actions could include the embargo of food, water and milk that do not come from protected sources. This precaution would be in place until sampling determines that these items are safe for consumption.

8.6.9. Other Dose Reduction Techniques and Protective Actions

Other dose reduction methods that may be used during the intermediate and recovery phases include those listed below. These methods may be recommended in areas that are not relocated.

- Scrubbing and/or flushing surfaces
- Soaking or plowing of soil
- Removal and disposal of small spots of soil found to be highly contaminated
- Disposal of contaminated products
- Restrictions on harvesting
- Restrictions on hunting and fishing
- Washing or peeling of produce
- Diverting milk to allow for decay of radioiodines;
- Condemning of milk and food
- Closing of the intakes for contaminated water supply

8.7. Recovery, Relocation and Reentry, Return, Reoccupancy

The Recovery, Relocation, Reentry, Return and Reoccupancy phases will begin when the utility or facility operator terminates the emergency or when events at the site have been downgraded and conditions stabilized. Off-site radiological monitoring, assessment, and environmental sampling will be continued until terminated by the State Radiological Assessment Officer, Virginia Department of

Health officials, and the State Coordinator of Emergency Management or when missions have been completed. State and local government officials will continue to take whatever actions necessary to provide for the safety and economic well-being of the populace and to return impacted areas to normalcy.

8.8. Immunity from Liability

In accordance with paragraph 44-146.23 of the Commonwealth of Virginia Emergency Services and Disaster Laws, neither the State, nor political subdivision thereof, nor Federal agencies, nor public or private agencies, nor, except in cases of willful misconduct, public or private employees, nor representatives of any of them, engaged in any emergency services activities, shall be liable for the death of, or any injury to, persons or damage to property as a result of such activities.

9. Direction and Control

9.1.Coordination of Emergency Operations

Direction and control of radiological emergency response operations in **City of Poquoson** is the responsibility of the **City of Poquoson** Director of Emergency Management. Extension Agent activities to include damage assessment functions and local public information news releases will be coordinated through the **City of Poquoson** Office of Emergency Management. State and Federal agency assistance will be requested through the Virginia EOC.

The York-Poquoson-Williamsburg Emergency Communications (9-1-1 Dispatch) Center is staffed 24 hours a day. This center will receive the initial notification of radiological emergency from the Virginia Emergency Operations Center (VEOC). Subsequent notifications will be sent to this center by the VEOC unless an alternate location is established for this purpose.

9.2. Communications

Multiple communication pathways exist in ingestion jurisdictions including but not limited to: Radios, telephonic communications, internet-based communication, and local media. The City of Poquoson will use CAD, telephone, email, and Onsolve "Code Red" mass public notification system for communication.

In the event communications assistance is needed, **City of Poquoson** may make requests for supplemental emergency communications or restoration of existing service to the VEOC.

9.3. Emergency Response Facilities

City of Poquoson will establish and maintain an adequate facility for direction and coordination of response efforts within the ingestion exposure pathway.

9.4. Public Information

The dissemination of accurate and timely information to the citizens and the dispelling of rumors in times of emergency is one of the most critical elements of an effective emergency response.

City of Poquoson will ensure that its citizens are informed about a radiological emergency and the implementation of protective measures. A Public Information Officer will be designated by **City of Poquoson** to implement the Public Information Operating Procedures during a radiological emergency.

10. Responsibilities

Responsibilities assigned to the various departments of **City of Poquoson** in support of radiological emergency response are outlined in Section VII of this Plan. **City of Poquoson** agencies assigned radiological emergency responsibilities may develop and keep more detailed SOPs in addition to this Plan to assure a capability to fulfill their responsibilities. Each agency will review its SOPs annually and report any necessary changes to the Coordinator of Emergency Management. The Coordinator of Emergency Management, or designee, is responsible for developing and maintaining contact information and notification lists. Updates to these lists will be made quarterly. Contact information is confidential and maintained separately. Copies of this list are located in the following locations: PSAP, EOC, and the Emergency Managers Office. **City of Poquoson** will participate in ingestion exposure pathway exercises for Surry Power Station at a level consistent with the preparedness and response goals and objectives of **City of Poquoson**, and in coordination with the VDEM, Dominion Energy, and the Federal Emergency Management Agency. VDEM will provide planning and other technical assistance, as requested.

11. Execution

This Plan is effective for execution upon notification of a radiological emergency within **City of Poquoson** and for training upon receipt. The Coordinator of Emergency Management will maintain, review, and update this Plan annually. The Coordinator of Emergency Management will distribute current copies of this plan to the individuals/organizations listed in Appendix D. Responsible **City of Poquoson** officials should recommend to the Coordinator of Emergency Management, at any time, improvements, and changes thereto which are appropriate. The Plan and any approved changes will be forwarded to all organizations and individuals with responsibilities for implementation of the Plan. Revised pages shall be dated.

12. Training Drills and Exercises

12.1. Training

City of Poquoson, in conjunction with the State, will participate in and provide training to involved organizations and individuals.

Initial training and retraining will be offered to any individuals and organizations which would be involved in a radiological emergency response.

12.2. Exercises

City of Poquoson will participate in Ingestion Exposure Pathway exercises as set forth by the Licensee, the Commonwealth of Virginia, and the Federal Emergency Management Agency. FEMA evaluated Ingestion Exposure Pathway exercises occur at every nuclear power plant facility once

every 8 years. Regardless of roles and responsibilities, the number and function of personnel that participate in an ingestion pathway exercise will be sufficient for demonstrating and carrying out protective action measures that are necessitated by an ingestion exposure pathway incident scenario. OROs within the 50-mile ingestion exposure pathway EPZ that are not part of the full participation ingestion exercise with the state, participate in an ingestion TTX or other ingestion pathway training activity at least once during each facility's 8-year cycle.

The exercises will be designed so that:

- Local personnel and resources will be mobilized.
- Federal and State observers and evaluators will critique demonstrations.
- The scenario will vary from exercise to exercise to cover all major planning elements.
- The scenario allows free play in decision-making.

Areas for improvement, noted during exercises or drills, will be evaluated and if appropriate be corrected by additional training and appropriate changes included in the next plan revision. Several mechanisms are used to track corrective actions including After Action Reports and responses provided to FEMA in the draft exercise or drill report. Once the draft exercise or drill report is issued, a corrective action process is established and documented in the report. If the area noted for improvement can be resolved with a plan revision, the revised pages are noted and sent to FEMA. If the area noted for improvement requires additional training, activities are conducted and documented in the Annual Letter of Certification and resolved during the next evaluated exercise or drill.

12.3. Drills

State evaluated drills will be conducted in addition to the FEMA evaluated Ingestion Exposure Pathway exercises that are conducted every 8 years. These drills follow a rotational cycle as defined by FEMA and the NRC. Participation includes any OROs, state or local, that have roles/responsibilities for the ingestion pathway and/or post-plume phase activities. Participation may be rotated according to drill objectives (i.e., not all ingestion pathway/post-plume phase objectives are relevant to all OROs) and/or so that the amount of OROs participating is adequate to meet the drill objectives. However, all OROs that have roles/responsibilities for the ingestion pathway and/or post-plume phase activities, no matter how small, will participate in at least one drill during each eight-year exercise cycle.

12.3.1. Biennial Drills

The intent of these drills is to train, practice, validate, and maintain skills with regard to ingestion pathway and/or post plume phase activities. As such, these drills involve, at least the following activities during each eight-year exercise cycle:

- Sample plan development;
- Analysis of lab results from samples;
- Assessment of the impact on foodstuffs and agricultural products;
- Protective decisions for reentry, relocation, return, and reoccupancy;
- Foodstuffs/crop embargo;

- Dissemination of ingestion exposure pathway EPZ information to pre-determined individuals and business;
- Assessment of emergency worker knowledge of ingestion exposure pathway EPZ procedures; and
- Identification of the individual authorized to make decisions in the ingestion exposure pathway EPZ.

12.3.2. Communications Tests

Will be conducted, at minimum, once a year between the State and Ingestion Exposure Pathway jurisdictions.

Local communications pathways are tested daily for radios, telephones, and email. The Onsolve "Code Red" notification system is tested daily by the Onsolve company.

13. Authorities and References

13.1. Authorities

- Commonwealth of Virginia Emergency Services and Disaster Law of 2000, as amended.
- Radiation Control Act, Title 32, Chapter 6, Article 8, Code of Virginia.
- A promulgation Statement by the Director of Emergency Management of **City of Poquoson** providing for the development of emergency operations plans and support organizations.

13.2. References

- Commonwealth of Virginia Emergency Operations Plan (COVEOP), Technical Support Document #1 – Radiological Emergency Response, October 2022.
- Commonwealth of Virginia Department of Health (VDH), Office of Radiological Health (ORH) Radiological Emergency Response Plan and Emergency Plan Implementing Procedure, November 2021.
- NUREG-0654/FEMA-REP-1, Rev-2, Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants, U.S. Nuclear Regulatory Commission/Federal Emergency Management Agency, (NRC/FEMA).
- FEMA REP-2, Guidance on Offsite Emergency Radiation Measurement Systems, Phase 1 - Airborne Release, June 1990.
- FEMA REP-12, Guidance on Offsite Emergency Radiation Measurement Systems, Phase 2 - The Milk Pathway, September 1987
- FEMA REP-13, Guidance on Offsite Emergency Radiation Measurement Systems, Phase 3 - Water and Non-Dairy Food Pathway, May 1990
- FEMA-REP Program Manual, December 2019
- Southern Mutual Radiation Assistance Plan (SMRAP), Southern States Energy Board, December 2011.
- Manual of Protective Action Guides and Protective Actions for Nuclear Incidents, EPA 400/R-17/001, January 2017
- Surry Power Station Emergency Plan, as current revised.

- Nuclear/Radiological Incident Annex to the Response and Recovery Federal Interagency Operational Plans, October 2016
- **City of Poquoson** Emergency Operations Plan.
- FDA, Accidental Radioactive Contamination of Human Food And Animal Feeds: Recommendations For State And Local Agencies
- National Response Framework (NRF), as currently revised.

14. Definitions

Access Control Points - Locations, usually manned by law enforcement officers, which are strategically positioned to prevent entry into the restricted area.

Alert - The second of the four emergency classification levels.

Committed Dose - The radiation dose due to radionuclides in the body over a 50-year period following their inhalation or ingestion.

Committed Effective Dose Equivalent - Dose incurred from inhalation of radioactive materials from exposure and intake during the early phase.

Corporate Emergency Response Center (CERC) -A facility operated by the utility for continued evaluation of the emergency and direction and control of licensee activities in response to the emergency. Representatives of State agencies are present and perform data analysis jointly with the utility. The CERC provides information on plant conditions and utility actions to Federal, State, and local authorities.

Decontamination - The removal or reduction of contaminated radioactive materials from a surface.

Deep Dose Equivalent - Deep Dose Equivalent and Effective Dose Equivalent are the same if the body exposure is uniform (a typical situation).

Dose Rate - The amount of radiation to which an individual is exposed per unit of time.

Dose, Projected - The estimated radiation dose that affected population groups may potentially receive if no protective actions are taken.

Dose, Radiation - The quantity of radiation absorbed, per unit of mass, by the body or any portion of the body. Rem is a unit of equivalent dose measurement.

Dosimeter - An instrument for measuring the total accumulated exposure to penetrating ionizing radiation.

Effective Dose Equivalent - The sum of the products of the dose equivalent to each organ and a weighing factor, where the weighing factor is the ratio of the risk of mortality from delayed health effects arising from irradiation of a particular organ or tissue to the total risk of mortality from delayed health effects when the whole body is irradiated uniformly to the same dose.

Emergency Phase - The initial time period during which actions are taken in response to a threat of release or a release in progress.

Evacuation Assembly Center (EAC) - A facility located beyond 15 miles of a nuclear power station where the public, evacuated from up to 10 miles of the power station, will be received, monitored for contamination, decontaminated, if necessary, and provided with emergency medical and nursing coverage, clothing, and supplies. EACs are established and operated by local governments or by adjacent political subdivisions through mutual support agreements. In all cases except one, schools are used as EACs. Staffing for these facilities consists of County/City employees and volunteers. The American Red Cross may assume responsibilities for specific functions such as bedding, feeding, registration, and medical support. These functions will be delineated in Statements of Understanding between a specific local government and the American Red Cross. Note: EAC is a Commonwealth of Virginia term; federally, and in most states, the EAC is referred to as a "Reception Center" (RC). Some states and localities also refer to these facilities as a "Community Reception Center" (CRC).

General Emergency - The fourth and highest of the four emergency classification levels.

Ingestion Pathway Emergency Planning Zone (EPZ) - 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 that has been contaminated through exposure to radiation, primarily from the deposition of radioisotopes after a radiological incident.

Intermediate Phase - The period beginning after the source and releases have been brought under control and environmental measurements are available.

Joint information center (JIC) - A location that facilitates operation of the JIS, 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, NGOs, 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 phase may extend from months to years. A PAG level, or dose to avoid, is not appropriate for long-term cleanup.

Licensee - The utility or organization that has received from the NRC (1) a license to construct or operate a commercial NPP, (2) an ESP for a commercial NPP, (3) a combined license for a commercial NPP, or (4) any other NRC license that is now or may become subject to requirements for radiological emergency planning and preparedness activities.

Pet - A domesticated animal, such as a dog, cat, bird, rabbit, rodent, or turtle that is traditionally kept in the home for pleasure rather than for commercial purposes, can travel in commercial carriers, and can be housed in temporary facilities. Household pets do not include reptiles (except turtles), amphibians, fish, insects/arachnids, farm animals (including horses), and animals kept for racing purposes. See service animal definition for more information.

Plume Exposure Emergency Planning Zone (EPZ) - An area delineated by a circle around a fixed nuclear facility used in preplanning. The primary concern is preventing whole body or inhalation exposure from airborne and deposited radioactive materials. In the case of a commercial nuclear power station, this distance is about 10 miles.

Protective Action Guide (PAG) - Levels of radiation doses to individuals in the general population that warrants protective action.

Protective Actions - Emergency measures taken for the purpose of preventing or minimizing radiological exposure that would likely occur if no actions were taken

Radiological Monitoring - The process of using a radiological survey instrument to locate and measure radioactive contamination.

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 radiation emergency.

Reentry - Workers or members of the public going into a relocation or radiological contaminated areas on a temporary basis under controlled conditions. The temporary return of individuals into a restricted zone under controlled conditions. OROs must also demonstrate the capability to demonstrate the control exit of vehicles and other equipment to control the spread of contamination outside the restricted area. Monitoring and Decontamination facilities will be established as appropriate.

Relocation - A protective action, taken in the post-emergency phase, through which individuals evacuated or not evacuated during the emergency phase are asked to vacate or not return to a contaminated area to avoid chronic radiation exposure from deposited radioactive material. Such individuals must be relocated to an area(s) where radiological contamination will not expose the general public to doses that exceed the relocation PAGs. This is the restricted area, where individuals are not allowed to reside and entry to this area is under restrictions.

REM - an acronym for Roentgen Equivalent Man, a unit of dose of any ionizing radiation that produces the same biological effect as a unit of absorbed dose of ordinary x-ray.

Reoccupancy - The return of households and communities to relocation areas during the cleanup process, at radiation levels acceptable to the community.

Restricted Area - Any area to which access is controlled for the protection of individuals from exposure to radiation and radioactive materials. An area in which evacuation has been completed and entry into this area is prohibited until the area is determined to be safe to reenter.

Restricted zone - An area of controlled access from which the population has been evacuated, relocated, or sheltered-in-place.

Return - The reoccupation of areas cleared for unrestricted residence or use by previously evacuated or relocated populations. OROs must demonstrate the capability to identify and prioritize services and facilities that require restoration with a few days.

Service animal - Any dog that is individually trained to do work or perform tasks for the benefit of an individual with a disability, including a physical, sensory, psychiatric, intellectual, or other mental

disability. Other species of animals, whether wild or domestic, trained or untrained, are not service animals for the purposes of this definition. The work or tasks performed by a service animal must be directly related to the handler's disability. Examples of work or tasks include, but are not limited to, assisting individuals who are blind or have low vision with navigation and other tasks, alerting individuals who are deaf or hard of hearing to the presence of people or sounds, providing non-violent protection or rescue work, pulling a wheelchair, assisting an individual during a seizure, alerting individuals to the presence of allergens, retrieving items such as medicine or the telephone, providing physical support and assistance with balance and stability to individuals with mobility disabilities, and helping persons with psychiatric and neurological disabilities by preventing or interrupting impulsive or destructive behaviors. The crime deterrent effects of an animal's presence and the provision of emotional support, well-being, comfort, or companionship do not constitute work or tasks for the purposes of this definition.

Site Area Emergency - The third of the four emergency classification levels.

Thyroid Exposure - Radiation exposure to the thyroid through inhalation or ingestion of certain radioactive materials.

Total Effective Dose Equivalent - The sum of the Deep Dose Equivalent and the Committed Effective Dose Equivalent

Unusual Event - The first and lowest of the four emergency classification levels.

Whole Body Exposure - Direct external radiation exposure to the body from airborne or deposited radioactive materials.

15. List of Attachments

Attachment 1: North Anna, Surry and Calvert Cliffs Nuclear Power Plant Ingestion Pathway Emergency Planning Zones

16. List of Appendices

A. Intermediate and Recovery Phase Actions/Considerations
B. Public Information Procedures
C. Decontamination, Re-Entry, Return, Relocation, and Recovery
D. Record of Plan Distribution
E. Radiological Information for Farmers, Growers and Food Producers.
F. Ingestion Plan Rev 2 Crosswalk with Reference Locations

1. NAPS, SPS and CCNPP Ingestion Emergency Planning Zone

1.1. Jurisdictions within 50 Miles of the North Anna Power Station

1. Albemarle County
2. Amelia County
3. Buckingham County
4. Caroline County[1,3]
5. Chesterfield County[2]
6. Culpeper County
7. Cumberland County
8. Essex County[2,3]
9. Fairfax County[3]
10. Fauquier County
11. Fluvanna County
12. Goochland County
13. Greene County
14. Hanover County [1,2]
15. Henrico County [2]
16. King George County[3]
17. King & Queen County[2, 3]
18. King William County[2]
19. Louisa County[1]
20. Madison County
21. New Kent County[2]
22. Orange County[1]
23. Page County
24. Powhatan County
25. Prince William County[3]
26. Rappahannock County
27. Richmond County[2,3]
28. Rockingham County
29. Spotsylvania County[1]
30. Stafford County[3]
31. Westmoreland County[3]
32. City of Charlottesville
33. City of Fredericksburg
34. City of Manassas
35. City of Richmond[2]
36. Charles County (Maryland)

1 - Within 10 miles of NAPS

2 - Within 50 miles of Surry Power Station

3 - Within 50 miles of Calvert Cliffs Nuclear Power Plant

1.2. Jurisdictions withing 50 Miles of the Surry Power Station

1. Accomack County[3]
2. Charles City County
3. Chesterfield County[2]
4. Dinwiddie County
5. Essex County[2,3]
6. Gloucester County
7. Greensville County
8. Hanover County[2]
9. Henrico County[2]
10. Isle of Wight Count[1]
11. James City County[1]
12. King & Queen County[2,3]
13. King William County[2]
14. Lancaster County[3]
15. Mathews County
16. Middlesex County[3]
17. New Kent County[2]
18. Northampton County
19. Northumberland County[3]
20. Prince George County
21. Richmond County[2,3]
22. Southampton County
23. Surry County[1]
24. Sussex County
25. York County[1]
26. Camden County (NC)
27. Currituck County (NC)
28. Hertford County (NC)
29. Northampton County (NC)
30. Pasquotank County (NC)
31. Gates County (NC)
32. City of Chesapeake
33. City of Colonial Heights
34. City of Franklin
35. City of Hampton
36. City of Hopewell
37. City of Newport News[1]
38. City of Norfolk
39. City of Petersburg
40. City of Poquoson
41. City of Portsmouth
42. City of Richmond[2]
43. City of Suffolk
44. City of Virginia Beach
45. City of Williamsburg[1]
46. Town of West Point

1 - Within 10 miles of SPS

2 - Within 50 miles of North Ann Power Station

3 - Within 50 miles of Calvert Cliffs Nuclear Power Plant

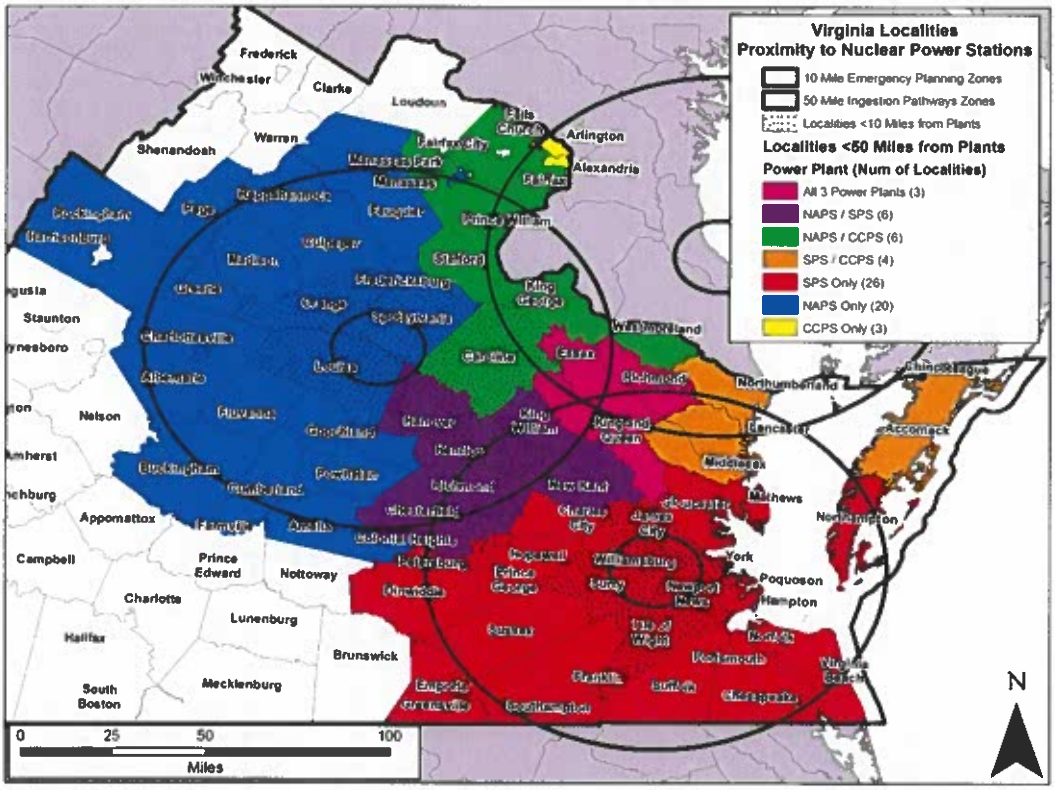
1.3. Virginia Jurisdictions within 50 Miles of Calvert Cliffs Nuclear Power Plant

1. Accomack County (Tangier Island)[2]
2. Arlington County
3. Caroline County[1]
4. City of Alexandria
5. City of Falls Church
6. Essex County[1,2]
7. Fairfax County [1]
8. King & Queen County[1,2]
9. King George County[1]
10. Lancaster County[2]
11. Middlesex County[2]
12. Northumberland County[2]
13. Prince William County[1]
14. Richmond County[1,2]
15. Stafford County[1]
16. Westmoreland County[1]

1 - Within 50 miles of North Ann Power Station

2 - Within 50 miles of Surry Power Station

1.4. Maps of 50-Mile EPZ



1. Intermediate and Recovery Phase Actions / Considerations

- Public Safety Answering Point (PSAP) notification of the radiological incident from the Virginia EOC.
- PSAP notifies the Coordinator of Emergency Management or his/her designee of the incident and provides briefing on the situation.
- Other jurisdictional representatives identified in a separately maintained list, located in the PSAP, EOC, and EM Office are notified of the emergency. Staffing of the emergency operations center or other command center is at the discretion of the Coordinator of Emergency Management or his/her designee.
- Ensure the Public Information Officer is notified and either put on standby or instructed to report to an appropriate duty station in case the public needs to be informed of the situation.
- If notified that ingestion pathway protective actions are necessary (e.g. placing cows on stored feed), ensure coordination with and between the State Joint Information Center (JIC) and the local PIO on disseminating appropriate information.
- If radiological information indicates that **City of Poquoson** could be affected by the incident, notify and direct the local extension agent and jurisdictional agricultural representatives begin to retrieve, compile or update listings of dairy, meat, poultry, fisheries, fruit and vegetable growers, grain producers, food processing plants and water supply intake points within the ingestion pathway.
- Consider appropriate actions and communications limiting hunting and fishing activities. Consider whether other outdoor work or sporting activities should be curtailed or limited.
- Coordinate with the Virginia Emergency Support Team (VEST) in securing information and instructions on ingestion exposure pathway protective actions in preparation for distribution or dissemination to farmers, growers, producers, processors, food outlets, and the general public.
- Be alert to information regarding Commonwealth environmental sampling teams taking samples within the jurisdiction.
- Confer with the VEST and Virginia Department of Health (VDH) to determine if residents in any portion of **City of Poquoson** should take any protective actions due to excessive radiological depositions. See Plan section 8.6 for information on protective actions and dose reduction techniques.
- Consolidate detailed records of costs related to the emergency response. Begin claim actions once cost records are consolidated.
- If no protective actions are necessary continue monitoring the situation until the event is stable or the emergency terminated. If conditions permit close out the emergency operations center or other command center.

1. Public Information

City of Poquoson will, if necessary, issue news releases that contain county-specific information that would be useful to dairymen, farmers, food processors, feed producers, county residents, and others as warranted. Along with news releases, jurisdiction-specific information will be provided at the Jurisdiction's media center to reporters from radio and television stations, and newspaper outlets that service the area. To ensure consistency throughout the impacted area, the release of all information to the public and local media representatives should be coordinated with the VEST External Affairs at the Joint Information Center (JIC) or other location established by VDEM for this purpose. For general radiological preparedness information, visit https://www.vaemergency.gov/threats/nuclear-safety/

2. Mission

To maintain, through all available communications media, a continuous flow of information and instructions before, during, and after a disaster so that the public will:

- Accept the conditions of a disaster or an emergency that are imposed upon them.
- Understand that the local government has plans for disaster and emergency aid for the population of the county.
- Understand individual responsibilities, actions and duties when the emergency plan is in effect.
- Have full knowledge of the existing situation in the disaster area, the actions being taken by the local government to alleviate the hardship and suffering, and the actions to be taken by the populace.

3. Tasks

3.1. Director of Emergency Management

The Director of Emergency Management or his/her designee will initially release all information concerning a disaster; upon the direction of the Director, this function may pass to the Coordinator of Emergency Management who will:

- Receive, review, and approve all news releases prior to their release to the public.
- Coordinate the release of all disaster-related information with other departments or agency heads.

3.2. Public Information Officer (PIO) Responsibilities:

- Monitoring state and local government operations to determine information that needs to be released to the public. Local jurisdictions can request copies of state news releases and EAS messages from the VEST External Affairs at the JIC or the Virginia EOC.
- Informing the public in the affected area that the radiological accident has occurred, any pertinent information, and of any protective actions that should be taken. This will entail the preparation, coordination and release of:
    - News Releases - Information can be distributed through news releases. The Director of Emergency Management or the Coordinator of Emergency Management will review and

approve all news releases before release to the public. See Attachment 1 for sample news releases.
    - Once distributed, copies of news releases issued at the local level should be transmitted to the VEST External Affairs at the Joint Information Center (JIC) via email at PIO@vdem.virginia.gov. If the JIC is not activated, transmit news releases to the Virginia EOC via email at VEOC@vdem.virginia.gov.
- EAS Messages - If the information to be distributed is of critical nature the Emergency Alert System can be activated. EAS activations are usually performed at the State level. However, if this is not possible local jurisdictions may activate, if necessary. Information on the operational area that covers **City of Poquoson** is contained in Attachment 2.
- Provide media briefings as required. If conditions warrant briefings should be on a scheduled basis. Information which might be included in briefings include the following:
    - Plant conditions
    - Protective action decisions for ingestion
    - Environmental sampling and assessment efforts
    - Rumor control telephone number(s)
    - Corrections to rumors/misinformation
- Provide rumor control. This includes answering inquiries from the public, monitoring the media to determine if accurate information is passed to the public, and correcting any misinformation broadcasted by the media. A telephone number should be published as soon as this function is established.
- Liaise with media resources.
- Utilize other potential avenues for information dissemination which may include:
    - Social media
    - Television
    - Radio
    - Print media
    - Reverse 911

4. Attachments

1. Sample News Releases
2. EAS Operational Area for **City of Poquoson**

Attachment 1: Sample News Releases

1. Sample 1

This is an important bulletin from the Coordinator of Emergency Management, Office of Emergency Management, regarding the incident that occurred at the Surry Nuclear Power Plant on _____date_____24-hour time. The Virginia Cooperative Extension Service in conjunction with the local Extension Service and the Virginia Department of Agriculture and Consumer Services recommends that farmers and growers terminate all farming operations in **City of Poquoson** until notified to resume operations. Dairymen, if any, in **City of Poquoson** are advised to place milk cows in sheltered areas, if possible, and to put them on stored feed and water until further notice.

Samples are being taken from the area to determine if radioactive contamination is present. The results determine whether the previously mentioned protective actions can be relaxed or whether additional protective actions are necessary. As soon as a determination is made, you will be informed. Stay tuned to this station for further information.

2. Sample 2

This is an important bulletin from the Coordinator of Emergency Management, Office of Emergency Management, regarding the incident that occurred at the Surry Nuclear Power Plant on _____date_____24-hour time. The Virginia Department of Health has collected and analyzed environmental samples from areas in **City of Poquoson** and has determined that no area within **City of Poquoson** was affected by the incident.

Stay tuned to your local station for additional information and updates.

Attachment 2: EAS Operational Area for City of Poquoson

1. Emergency Alert System

See **City of Poquoson's** Emergency Operations Plan (EOP).

The Virginia Department of Emergency Management (VDEM) will coordinate EAS messages from State authorities and forward them to the Common Program Control Station-1, WRVA, in the Richmond extended area, and WGH for the Newport News/Peninsula operational area. Local governments will submit requests for activation of the EAS to the State with one exception: If unable to contact the Virginia Emergency Operations Center (VEOC) by telephone or radio, local governments are authorized to activate the local EAS and forward emergency action messages to the Common Program Control Station for that jurisdiction. All information to be broadcast via the EAS will be disseminated in accordance with the State EAS Plan.

VDEM will establish communications, by telephone, with the state of Maryland and/or the state of North Carolina for exchange of information concerning radiological emergencies at nuclear facilities within any of the three states that might affect one of the other states. The following systems may be utilized as backups: FNARS, NAWAS.

For additional background or information on the Commonwealth of Virginia EAS Plan, visit the State Emergency Communications Committee (SECC) website at http://www.jmu.edu/wmra/eas/index.html

You will find at this site, the State EAS Plan, which was prepared by the Virginia State Emergency Communications Committee, the Virginia Department of Emergency Management, the Federal Communications Commission, the National Weather Service, state and local officials, and the broadcasters and cable operators of Virginia. It provides background data and prescribes specific procedures for the broadcast media and cable to issue emergency information and warnings to the general public in Virginia, or any portion thereof within a stations' broadcast coverage capability, at the request of designated local, state and/or federal government officials.

1.1. About EAS

The Emergency Alert System is designed to provide the President of the United States automatic access to the nation's broadcast and cable facilities, and to speak directly to the country in times of national disaster. Secondarily, the EAS system can be used by the National Weather Service and State and local officials to disseminate other types of emergency information. Your EAS encoder/decoder will receive commands either directly from the source of the emergency, or from a web of other broadcasters in your area that will relay the information from the primary source.

1.2. Public Considerations

The listening and viewing habits of the general public are inherent factors for consideration and are conducive to the effectiveness of the Virginia Emergency Alert System (EAS). Continuing public education is required to increase public awareness of the Virginia Emergency Alert System (EAS) as an established medium for the receipt and/or distribution of emergency information to the general public at the local, state and national levels.

1.3. Adjacent States

Counties, cities, and local areas bordering neighboring states are encouraged to monitor a State Relay (SR) of the neighboring state. In some areas this is spelled out in the state plan of the neighboring state. Some stations may find it necessary to monitor more than two sources to effectively execute EAS in their local area. Compliance can be fulfilled by monitoring a SR from two states when necessary to provide dissemination of emergency information from a two-state area. The State SECC can be contacted for recommendation on monitoring assignments in areas of adjacent states.

1. MISSION

To provide for the decontamination of people, pets, service animals, vehicles, livestock, structures, crops, soil, and any other surfaces that are contaminated with radioactive material.

To provide for relocation, re-entry (temporary access), return (reoccupation), and recovery for affected areas due to a radiological emergency.

2. CONCEPT OF OPERATIONS – INTERMEDIATE

The Intermediate Phase begins after the utility verifies the termination of the release and that the plant is in a stable condition. Emergency exposure limits are terminated, and normal occupational exposure limits apply upon entry into the Intermediate Phase. Decisions on additional protective actions are made by using reliable environmental measurements a basis.

The Virginia Department of Emergency Management (VDEM) VEST Team Leader will rely on the Virginia Department of Health, Office of Radiological Health (VDH ORH) Lead to provide expertise on technical functions.

3. PROCEDURES

3.1. Relocation

Following the National Nuclear Security Administration's Aerial Measurement Systems (AMS) flyover, VDH shall coordinate sampling team operations to obtain soil samples. The AMS flyover data will aid in predicting the optimal locations for soil sampling.

- Soil samples shall be analyzed to determine the accident-specific Derived Response Level (DRL). The Division of Consolidated Laboratory Services and the ORH mobile lab will analyze soil samples.
- Areas where environmental radiation measurements exceeding the DRL will be designated as the Restricted Zone (RZ). The RZ will likely extend outwards to the nearest convenient public roads, intersections, political boundaries, or other landmarks to create a Buffer Zone.
- VDH will calculate the accident-specific Relocation DRL, defined as an exposure rate measured one meter above ground level.
- Public residing in areas exceeding the Relocation DRL would exceed the 1st year Relocation Protective Action Guide (PAG) of 2 rem Total Effective Dose Equivalent (TEDE) or 2nd year Relocation Long-Term Goal of 0.5 rem TEDE.
- The public will be relocated from areas within the RZ to avoid chronic radiation dose. Members of the public not previously evacuated will be relocated from areas within the boundary of the RZ/Buffer Zone, with priorities for relocation from areas with the highest dose rates. Individuals who are being relocated from areas that were not previously evacuated, will be directed to an Evacuation Assembly Center (EAC) for monitoring and decontamination, if needed.
- Surveys will be repeated at intervals designated by VDH to ascertain changes in exposure rates and contamination levels, and recalculate the accident specific DRL, as necessary.

3.2. Re-Occupancy

Re-occupancy means the return of households and communities to relocation areas during the cleanup process, at radiation levels acceptable to the community. It is recognized that final cleanup goals may take years to achieve. Re-occupancy of the affected area will be possible when interim cleanup has been completed to reduce short- term exposures to acceptable levels while work continues to achieve long-term goals. Community decision-makers should bring together a broad group of stakeholders (residents, local business owners, local government officials, etc.) interested in the rebuilding of their communities and ensure the group is a voice for the entire community rather than a few interested parties.

3.2.1. Crops and Soil (Including all fruits and vegetables, grown commercially or for home use)

- Crops and soil that may have become contaminated with radioactive materials will be monitored for contamination by members of the Virginia Department of Agriculture and Consumer Services (VDACS)
- For small areas, decontamination may be accomplished by digging up the affected area and disposed as determined by VDACS.
- For a large area, decontamination may be accomplished by a variety of methods including plowing, soaking of soils, or some other acceptable means.
- VDACS will monitor crops grown on land that has been decontaminated to assure that they are safe for consumption.

3.2.2. Livestock

- Livestock in the affected areas will be monitored for contamination by members of VDACS.
- Decontamination will be conducted under the supervision of VDACS. Owners of livestock may be trained to perform decontamination.
- VDH will determine recommended protective actions to reduce the possibility of contamination of individuals and milk-producing animals through the ingestion pathway based on accident assessment.

3.3. Re-entry

Re-entry means workers or members of the public going into relocation or radiological contamination areas on a temporary basis under controlled conditions. Re-entry guidance includes:

- Individuals who are permitted to re-enter a restricted zone to work, or for other justified reasons, will require protection from radiation. Such individuals should enter the restricted zone under controlled conditions in accordance with dose limitations.
- Examples of justified reasons include the following: emergency response actions, fire suppression, security patrols, utilities repair/maintenance, essential care of livestock, recovery of important banking and business records, recovery of school and governmental records, etc.
- The decision to allow re-entry and return into an evacuated area rests with the Director of Emergency Management or designee of the local jurisdiction affected.
- An entry and exit plan must be developed and executed that includes the following: a safety briefing; map of the restricted area with exposure rates and areas to avoid; duration, stay time,

and expected exit time; review of dose reduction and contamination control techniques; issuance and use of dosimetry and protective clothing; exit process, including monitoring of persons, equipment, and vehicles; and a debriefing. Refer to Tab A for a briefing outline.

- Individuals re-entering a restricted area will be registered and issued a permit. Refer to Tab B for Re-entry Log and Tab C for Re-entry Pass.
- Individuals permitted temporary re-entry during the late emergency/early intermediate phase will be issued dosimetry so that their exposure can be recorded. These exposure readings will be recorded on the individual's Form REC-1. Individuals permitted temporary re-entry during the intermediate /late recovery phase will be issued dosimetry to record their exposure. This information will be recorded on the re-entry log.
- One or more Access Control Points (ACPs), based on severity, will be staffed for re-entry into the RZ and staffed with Law Enforcement representatives and other applicable personnel. Monitoring and decontamination stations will be located at logical points of egress in the buffer zone.
- Persons must exit at the Access/Egress Control Point from which they entered, doff protective clothing, be screened for radiological contamination, and decontaminated to less than 300 cpm above background (if needed). The ACPs include areas where vehicles can be decontaminated. Vehicles should be assigned to be used as "ferry vehicles" dedicated to Restricted Zone use.
- If more extensive decontamination is required beyond the use of ordinary soap and water, VDH ORH should be consulted.
- Radiation detection equipment used by local emergency services personnel to monitor a surface for contamination will be supplied through VDEM. Training in the use of this instrumentation and maintenance of the equipment will be provided by VDEM.
- Emergency clothing and shoes is available upon request from the VEOC, for use by evacuees whose clothing has been contaminated.
- Dosimetry will be collected, read, and recorded on an exposure record for maintenance/retention by the Radiation Specialist/Health Physicist.

3.4. Return

Return means the permanent resettlement of evacuated or relocated areas with no restrictions, based on acceptable environment and public health conditions.

The decision to allow return into an evacuated area rests with the Director of Emergency Management or his/her agent of the local jurisdiction.

- Areas previously evacuated but residing outside of the RZ/Buffer Zone are candidates for controlled return for unrestricted residence. Return will normally be recommended by VDH only when the projected dose is less than 2 rem TEDE during the first year. This dose is the sum of the effective dose equivalent from external gamma radiation and committed effective dose equivalent from inhalation of resuspended materials. Additionally, doses in any single year after the first should not exceed 0.5 rem.
- Return shall be coordinated with VDH and other appropriate officials when vital utilities and services have been restored (such as electricity, water, gas, sewage, fire protection, law enforcement, etc.) It is expected that the return process will be in stages and precautions taken to verify identities of those returning.

3.5. Recovery

Recovery refers to efforts that focus on remediation, or the process of reducing radiation exposure rates and concentrations of radioactive material in the environment to levels acceptable for unconditional occupancy or use. The Recovery Phase will begin when the facility terminates the radiological emergency and declares that events at the site have been downgraded and conditions stabilized. Off-site monitoring, assessment, and environmental sampling will be conducted by VDH ORH. Federal agencies and other State agencies, including VDEM, VDACS, Virginia Cooperative Extension, and the Virginia Department of Transportation, will form a Recovery Group.

- In areas where deposition of radioactive materials occurred, procedures to reduce or remove the radioactive material down to acceptable levels will be developed by VDH ORH.
- State and local government officials will take whatever actions necessary to provide for the safety and economic well-being of the populace and to return impacted areas to normalcy. Decisions will be made to allow the general public to return to the affected areas and/or to provide relocation assistance for families unable to return to areas. Assistance and restitution may be available from the American Nuclear Insurers and from the Federal government under the Stafford Act. Decisions may also be made to relax protective measures imposed on foods (processing, distribution, and consumption) and agricultural activities.
- During recovery operations, local authorities, in conjunction with state authorities, should be prepared to:
    - Identify recovery assistance and resources needed to return impacted areas to normalcy
    - Determine relocation and housing needs of the evacuated population
    - Determine appropriate actions relative to disposal of contaminated foods, land, animals, and property
    - Perform radiological dose assessment, integrated dose calculations, and health effects to the public
    - Conduct decontamination of selected foods, vehicles, buildings, equipment, livestock, crops, soil, and persons
    - Compile listings of persons and property owners in the affected areas to support insurance claims and requests for financial restitution
    - Consider lifting or relaxing restrictions on food consumption and marketing, based on dose assessments
    - Assess the financial impact on state and local economies of restrictions placed on the sale and use of commercial foodstuffs and the curtailment of wholesale and retail marketing in affected communities.
    - Develop a method to redirect mail deliveries to evacuees and relocated populations
    - Determine need to control the spread of contamination by wildlife
    - Coordinate exposure time periods, contamination levels, and significance of radiation exposures with counties and adjacent States affected by radioactive contaminants
- The Federal government is expected to be the primary funding entity for cleanup and recovery activities. Under the National Response Framework and the National Disaster Recovery Framework, FEMA may issue mission assignments to the involved Federal agencies, as appropriate, to participate in the overall recovery process. Additional funding may be provided

to State and local governments to perform response or recovery activities through other mechanisms. Primary Federal agency assistance for clean-up operations is expected to be the Department of Energy and the Environmental Protection Agency. The need for other assistance will be determined by VDH ORH.

4. Decontamination and Logistics

4.1.Contamination Levels

An individual or surface will be considered contaminated if a survey reading indicates a level in excess of 300 counts per minute (CPM) above background.

4.2.Decontamination Activities

Decontamination activities will be performed by or under the guidance of Virginia Department of Health-Office of Radiological Health (VDH-ORH) if this action is warranted in any jurisdiction within the ingestion pathway beyond the Plume (10-mile) Emergency Planning Zone.

4.3.Structures and Vehicles

Vehicles used by evacuees and emergency workers that have been in the evacuated area will be monitored and, if necessary, decontaminated by washing the vehicles with soap and water. The Commonwealth of Virginia Radiological Emergency Response Plan (COVRERP) will have additional information on this subject. The VEST and VDH can also be consulted if additional guidance is needed.

If such action is deemed necessary, decontamination of structures and vehicles will be under the direction and control of a local government agency officer or agent designated by the Coordinator of Emergency Management. Advice, recommendations, and training on decontamination will be provided by VDH.

4.4.Decontamination Equipment

The use of ordinary soap and water will be the primary method of decontamination. If more extensive decontamination methods are required VDH will be consulted.

Radiation detection equipment used by local emergency services personnel to monitor a surface for contamination will be supplied through VDEM. Training in the use of this instrumentation and maintenance of the equipment will be provided by VDEM.

4.5.Decontamination Assistance

Contact the VEOC for any decontamination assistance.

5. Tabs:

- A - Sample Reentry Briefing Outline
- B - Re-entry Log
- C - Re-entry Pass
- D - Emergency Worker Form REC-1

Tab A: Sample Re-Entry Briefing* Outline

1. Nature of Emergency

- Area Evacuated or Restricted
- Source and Nature of Release
- Exposure Limits

2. Radiological Risks

- Short Term (Early) Effects, e.g. radiation sickness.
- Long Term (Delayed) Effects, e.g. higher risk of cancer, genetic defects.

3. Exposure Reduction

- External Hazards - Time, Distance Shielding
- Internal Hazards - Ingestion, Inhalation, Absorption
- Read and Review Information on Re-Entry Pass. See Tab C.

4. Radiation Monitoring

- Dosimetry Use.
- Survey monitoring at Facility - Decontamination if necessary.
- Registration And Re-Entry Permit Process

*Conducted by State Radiological Officer or Local Government Radiological Officer (RO), as applicable, with advice by or in conjunction with VDH ORH Specialists. Jurisdictions without a Radiological Officer will receive support from the State for conducting the Re-Entry briefing. Completion of the briefing and applicable training will be verified by the Local RO or VDH ORH designee.

Tab B: Reentry Log

Reentry Log						Facility:			
Pass #	Name	Vehicle Plate #, Make, Color	Destination	Log Out Time	Log In Time	Exp. Date/Time	Dosimetry (mR)	Previous Exposure (mR)	Year to Date Ex (mR)

Tab C: Reentry Pass

RE-ENTRY PASS

PASS #:_____

-You have requested to enter an evacuated area.
-You must present this pass to law enforcement officials when requested.
-Remember the following information given to you during the briefing:

1. NO eating, drinking, or smoking in the evacuated areas.
2. DO NOT spend any more time than you have to in the evacuated area.
3. DO NOT remove livestock or produce from the evacuated area.

-Return to the facility that issued you this pass before the expiration time.

EXPIRATION

DATE: FACILITY:

TIME: SIGNATURE:

Tab D: Emergency Worker Form REC-1

VIRGINIA DEPARTMENT OF EMERGENCY MANAGEMENT

Form REC-1
EMERGENCY WORKER
RADIATION EXPOSURE RECORD

NAME (Last, First MI)	AGE	ID # (assign 4-digit number)
ADDRESS (Street, Apt #)		
CITY	STATE	ZIP CODE
TELEPHONE (personal)	TELEPHONE (business)	
POSITION	IF DESIGNATED AS A GROUP LEADER, CHECK THIS BOX: ☐	
EMERGENCY DUTIES		

DOSIMETRY SERIAL NUMBERS

DOSIMETER CARD #	DIGITAL ALARMING DOSIMETER (DAD) #
DOSIMETER CARD EXPOSURE requires laboratory analysis for exposure (i.e., dose) to be determined, later.	*If not issued a DAD, record your group leader's DAD # in the space above, and check this box:* ☐

DAD READINGS

If not issued a DAD, leave blank, and reference your group leader's DAD if needed.
NOTE: Obtain readings from DAD in its DOSE mode (See SOP).
DAD SHOULD BE READ EVERY 30 MINUTES
RECORD DAD READINGS IN APPROPRIATE UNITS OF MEASURE (µR=microREM, mR=milliREM, and R=REM)

START DATE		END DATE	
TIME	DAD READING	TIME	DAD READING

POTASSIUM IODIDE (KI) HAVE YOU TAKEN KI as recommended by HEALTH DEPARTMENT? ☐ YES ☐ NO

IF YES, PROVIDE:	DATE	TIME	IF you REFUSE to take KI, DOCUMENT by SIGNING, here:
REPEATED EVERY 24 HOURS? ☐ YES ☐ NO			

Form REC-1 Revised 11/XX/2018

Record of Distribution

Agency/Department	Title of Recipient	How Distributed (electronic or hard copy)	Confirmation that Updated Plan was Received (I.e. check mark, signature, initials, date received)
PSAP / 911 Center / ECC	Director	Electronic	
Fire / EMS	Chief	Electronic	
Sheriff's Office / Police Department	Chief	Electronic	
Health Dept.	Director	Electronic	
CO-OP Extension Agent			

Radiological Information for Farmers, Growers and Food Producers

Introduction

This information applies to all areas of the Commonwealth of Virginia. This information is intended to help farmers better understand the effects of radioactive contamination on plants, soil, water and animals, and the basic needs and care of animals should a radiological accident occur within the Commonwealth of Virginia. The information contained within this pamphlet applies to communities near nuclear power stations, shipyards, research reactor sites and nuclear fuel plants. This information also applies to communities that may be affected by a transportation accident involving radioactive or nuclear materials on one of our major roads or highways. Information is shared on what you may be asked to do if an incident occurs causing an area to be exposed to radioactive contamination.

In the event of an emergency, your first concern should be ensuring the safety of you and your family. State officials using the EAS (Emergency Alert System) will notify the public of necessary protective steps. If the accident is of such severity that it will also affect farming in your area, instructions for farmers' needs will also be issued over EAS. This information will provide you with an explanation of the actions that you may be advised to take to protect farm animals and farm products.

Comprehensive emergency plans have been prepared cooperatively by local government and state emergency management officials to advise you should the need arise. For example, in the case of a nuclear power station accident, this includes a 10-mile area around the plant site. For the agricultural industry, plans have been made to include a 50-mile zone from the plant, with the emphasis on protecting dairy products and crops. Teams of trained personnel have been organized to implement emergency procedures and assist all residents during an emergency.

In an Emergency, Who Will Provide Advice

This information provides general advice as to precautions, preparations and actions you can take. However, in a radiological emergency, the Virginia Department of Emergency Management in cooperation with the Virginia Departments of Health, Radiological Health, and Agriculture and Consumer Services, will monitor and broadcast radiation levels, dangers and recommended actions based on information gathered by radiation monitoring teams. Federal and state agencies will conduct damage assessments in potentially affected areas and will inform farmers, growers and producers of any actions, which should be undertaken. The general public will receive this information over the EAS.

Protecting Your Farm

You may be asked to shelter your farm animals and give them protected feed and water. This will help prevent contamination from harming your animals, and from later entering the human food supply.

Checking for contamination at home gardens and small-scale farms may not begin for weeks after the emergency. Homegrown produce should be tested for radioactive contamination before it is consumed. Home gardeners and small-scale farmers should wait for a field monitoring team to help them, or for further instructions from local and state agriculture and health agencies.

Sheltering Animals

If you are advised to shelter animals, remove them from pasture and house them in a farm building. You may not have enough shelter available for all of your animals, so priority should be given to your most valuable livestock. State and local emergency response agencies will have more advice for

decontaminating farm animals.

Possible livestock shelters:
- Barns
- Milking parlors
- Machine sheds
- Garages
- Corncribs
- Poultry buildings
- Swine buildings

Giving Animals Protected Feed

You may be advised to place animals on protected feed and water that have not been stored in the open or exposed to radioactive contamination. Types of protected feed include:
- Grain stored in protective bins
- Hay stored in a barn or covered shed
- Ensilage stored in a covered silo
- Hay bales covered by a tarp or barrier plastic or bales with the outer layers discarded

Giving Animals Protected Water

Even if you have no protected feed during a radiological emergency, animals can live for several days on water alone. Water from enclosed wells or other covered or underground sources will normally be safe for livestock. It is unlikely these water supplies will be affected.

Water from a covered well, tank, cistern or from a freely running spring is best. To prevent contamination from radioactive particles, do not add water to covered tanks unless the water is from a protected well or spring. Use all the water originally present in the tanks first.

Open water troughs should be drained, rinsed and refilled after notification that radioactive materials have settled to the ground. The same procedure should be followed after windy weather spreads dust in the area.

Protecting Water Sources

Open sources of water, such as rain barrels and tanks should be covered to prevent contamination. State and local health experts will check open sources of water and tell you whether they are safe.

Filler pipes should be disconnected from storage containers supplied by runoff from roofs or other surface drain fields. This will help prevent contamination from entering the storage containers.

Intake valves on water systems should be closed when you suspect the water source may be contaminated. This will prevent distribution or irrigation until the water source is tested and found to be safe.

Protection from Contaminated Soil

If state officials find that the soil is contaminated above established safety levels, proper soil management procedures can reduce contamination to safe levels. Idling – the non-use of land for a specific period of time – may be necessary. In situations involving highly contaminated soil, removal and disposal of the soil may be more appropriate. Growing alternative non-food crops may also be recommended in some situations. Deep-plowing the soil can move radioactive substances below the plant root level, prevent plants from taking up contaminated nutrients, and allow the level of

radioactivity to decrease with the passage of time.

Protecting Your Crops

The following specific actions may be advised to reduce the danger of ingesting adulterated food products.

Milk
Remove all dairy animals from pasture and shelter them if possible, and provide them with protected food and water. Sampling teams from the Virginia Department of Agriculture and Consumer Services, or the Federal Radiological Monitoring and Assessment Center will come to your farm to take milk, and possibly feed and water samples, for laboratory analysis to determine whether any of these products are adulterated.

If dairy products are contaminated, it will be recommended that milk and milk products be withheld from the market. It is possible, however, for milk products contaminated with very low levels of radioactive materials to be safe for human consumption.
The Virginia Department of Agriculture and Consumer Services will advise as to which protective actions are appropriate.

Vegetables and Fruits, Including Grapes
Wash, scrub, peel, or shell locally grown fruits and vegetables, including roots, tubers and grapes to remove surface contamination.

Meat and Meat Products
If there is a release of radioactive materials into the environment, you may be advised to place meat animals on protected feed and water, and, if possible, provide them with shelter. If livestock consume feed and water contaminated with radioactive materials, some of the contamination will be absorbed into their bodies and could then enter the human food supply through meat and meat products.

Poultry and Poultry Products
Poultry raised outdoors, especially those kept for egg production, should be monitored by taking samples and performing lab tests to determine the presence of radioactive contamination. Poultry raised indoors and given protected food and water are not likely to be contaminated. If adulteration is verified, the Virginia Department of Agriculture and Consumer Services may advise that poultry and eggs not be eaten.

Grains
If grains are permitted to grow to maturity, most contamination will probably be removed by the wind and rain. Milling or polishing will probably remove any remaining contamination. Sampling and laboratory analysis will determine if the grain is safe to use. When harvested, adulterated and unadulterated grains should be stored separately.

Bees
Honey and beehives will need to be sampled and analyzed by the Virginia Department of Agriculture and Consumer Services or the Federal Radiological Monitoring and Assessment Center if radioactive contamination is detected in the area.

Fish
Fish may continue to be harvested unless the Virginia Department of Agriculture and Consumer Services

determine through laboratory analysis of samples that they are adulterated. Dilution of the radioactive material in large bodies of water should make adulteration of fish highly unlikely. Samples of fish from fish processing facilities may be analyzed to ensure they are safe.

Protecting Food Products

Food and Milk Processors, Warehouses and Commodity Terminals
Windows and vents to the outdoors should be closed. Vacuum systems should be shut down, as should compressed air systems. Any system that draws air from the outdoors to the inside should be shut down. Your facility will be notified directly by the Virginia Department of Agriculture and Consumer Services, if the food products in your facility are affected. If samples are collected, the Department of Agriculture officials will notify you which products can be released for sale.

Protection of Packaged Food Products
Food in finished packaging should not be harmful to eat as long as the outer wrappings are discarded. Radioactivity will travel as fine particles that may coat the outside of the food product container.

Economics

Under the worst conditions, radioactive contamination could reduce the economic productivity of your farm. As previously mentioned, you may suffer the loss of some farm and dairy items due to contamination or spoilage during the period of time that a radiological emergency is in progress. However, following an accident, radioactive contamination might reduce the competitive economic value of your farm products. This would be due to public reluctance to purchase farm products that are suspected of having been grown in an area that has been affected by a radioactive release from a nuclear power plant or other source. State authorities will advise you on the contamination level that your farm experienced and the marketability of your farm products. An insurance pool has been established to help individuals recover from the losses caused by a radiological disaster.

Radiation and Our Environment

Radiation is energy released in the form of small particles or rays that are emitted from a radiation source, and is a natural part of our environment. Radiation is in the air we breathe, the food we eat, the soil, our homes, sunshine, and even our bodies. The radiation naturally occurring or existing in our environment is called background radiation. The amount of background radiation varies from one location to another.

People are also exposed to radiation through medical and dental x-rays, and appliances such as color television sets. Commercial nuclear power stations and other facilities such as hospitals and universities are permitted to release controlled non-harmful amounts of radioactivity to the environment during routine operations. The primary means of protection from radiation are (1) sheltering, (2) increasing distance and (3)
reducing exposure time.

Contamination

Contamination is the presence of radioactive particles in unwanted locations. Anything can become contaminated: people, animals, water, food, plants, soil, farming equipment, etc. Contamination is caused by radioactive particles lying on the surface of an object. In the case of people and animals, internal contamination can result from breathing radioactive particles in the air, drinking radioactive water or eating radioactive food. Therefore, it is necessary to take special precautions with farm

animals to prevent or minimize contamination.

Outer skin surfaces can be decontaminated through washing, but radioactive material collected inside the body may result in a long-term exposure and is, therefore, of greater concern. Care should be taken to prevent or minimize the radioactive particles that are taken into the body or allowed to collect on your skin or clothing.

Radiation Exposure and Health

The principal means by which the public may be exposed to radiation following an accident are:

- Externally from radioactive materials that are released into the air;
- Internally from breathing airborne radioactive particles or eating food contaminated by radioactive elements.

The health effects of radiation exposure to people are measured in units called millirems. The federal government has set guidelines for radiation exposure to the public for nuclear power plant accidents and incidents at test and research reactors, fuel processing plants and other facilities using or producing large quantities of radioactive material. These guidelines recommend actions when (1) the total projected dose to the whole body from external radiation exceeds 500 millirem or, (2) the total projected dose to the thyroid from internal radiation exceeds 1,500 millirem. These Precautionary measures may be recommended at radiation levels below the limits mentioned above or even before any radioactivity is released from an accident site.

Potential Sources of Radiological Emergencies

This brochure applies to peacetime emergencies resulting from fixed nuclear facility incidents (including commercial and military nuclear power reactors); transportation incidents; and other incidents, e.g., nuclear powered satellite reentry. Sabotage and terrorism are not treated as separate types of incidents; rather, they are considered a complicating dimension of the incident types noted. Specifically, the following fixed nuclear facilities are potential sources of radiological emergencies in Virginia:

- North Anna Power Station, near the town of Mineral, Virginia;
- Surry Power Station, on Hog Island in Surry County, Virginia;
- Calvert Cliffs Nuclear Power Plant, near Lusby, Maryland;
- Naval and commercial shipyards, Hampton Roads area; and
- Commercial and naval nuclear fuels plants and research reactors, near Lynchburg.

Summary

The information contained in this pamphlet applies to all areas of the Commonwealth. Be familiar with the probable effect and potential effects of radiation contamination on your farming operation. If it should occur, listen for EAS messages on your local radio and television stations.

If you are warned that a radiological emergency exists, do the following:

- Arrange for the safety of you and your family.
- Shelter all farm animals, especially dairy cattle, and feed and water livestock from stored feed and protected water.

- Bring feed into building, or cover it if outdoors.
- Store as much water as possible for livestock. Cover wells, rain barrels and tanks.
- Delay grazing of animals on contaminated pasture.
- Place food or water in a closed area inside a house where it cannot be contaminated. Uncovered food brought in from a contaminated area should be cleaned. Eggs, potatoes, melons and root crops that are clean can be eaten. Green vegetables should be carefully washed and their outer layers removed if they were exposed to radiation. Peas and beans require normal cleaning.

You should protect yourself against radioactive contamination by:

- Washing hands thoroughly before you eat;
- Wear clothing such as coveralls, gloves and hats while working outside. The clothing should cover all portions of your body. Remove outer clothing before going inside.
- As much as possible, avoid activities that can re-suspend contamination, such as plowing, digging, burning, or mowing. Wear a dust mask or a folded, dampened cloth over your nose and mouth to reduce the quantity of radioactive materials inhaled when such activities cannot be avoided.
- Shower after completing outdoor activities
- Wash outer clothing

  Governmental agencies will conduct assessments of land and crop damages and will advise you on how farm activities should be continued following a radiological accident.

If you desire to discuss this subject further or conduct a meeting in your community on this topic, contact your local Extension Office, any local USDA agency representative, your Emergency Coordinator or the Virginia Department of Agriculture and Consumer Services.

Adjacent States and Jurisdictions Within 50-Mile Ingestion Pathway*

The Virginia Emergency Operations Center (EOC) will provide notification to affected or potentially affected jurisdictions within the ingestion pathway and applicable adjacent states in the event of a radiological emergency occurring at the North Anna, Surry Power, or Calvert Cliffs Nuclear Power Stations. *The State will transmit to each local organization recommended protective measures based upon protective action guides and other criteria. This shall be consistent with the recommendations of the U.S. Environmental Protection Agency (EPA) regarding exposure resulting from passage of radiological airborne plumes and with other Federal recommendations regarding radioactive contamination of human foods and animal feeds.

The primary means for notifying Virginia jurisdictions within ingestion pathway will be the Virginia Criminal Information Network (VCIN). Back-up communications for warning of those local governments (ingestion pathway jurisdictions) not immediately affected by the radiological emergency will be by commercial telephone, internet, or cellular. The primary means for notifying adjacent states will be commercial telephone. Back-up communications for notifying adjacent states is National Warning System (NAWAS).

The Virginia EOC will provide notification to affected or potentially affected local jurisdictions within the Virginia portion of the ingestion pathway in the event of a radiological emergency occurring at the Calvert Cliffs (Maryland) Nuclear Power Station. Notifications will be made to local governments within the ingestion pathway when a General Emergency is declared or earlier as appropriate. Similar alerting procedures will be used to notify any area(s) of the state depending on the type of radiological accident and its effects.

Surry Power Station Ingestion Pathway Adjacent Jurisdictions

1. Accomack County[3]
2. Charles City County
3. Chesterfield County[2]
4. Dinwiddie County
5. Essex County[2,3]
6. Gloucester County
7. Greensville County
8. Hanover County[2]
9. Henrico County[2]
10. Isle of Wight Count[1]
11. James City County[1]
12. King & Queen County[2,3]
13. King William County[2]
14. Lancaster County[3]
15. Mathews County
16. Middlesex County[3]
17. New Kent County[2]
18. Northampton County
19. Northumberland County[3]
20. Prince George County
21. Richmond County[2,3]
22. Southampton County
23. Surry County[1]
24. Sussex County
25. York County[1]
26. Camden County (NC)
27. Currituck County (NC)
28. Hertford County (NC)
29. Northampton County (NC)
30. Pasquotank County (NC)
31. Gates County (NC)
32. City of Chesapeake
33. City of Colonial Heights
34. City of Franklin
35. City of Hampton
36. City of Hopewell
37. City of Newport News[1]
38. City of Norfolk
39. City of Petersburg
40. City of Poquoson
41. City of Portsmouth
42. City of Richmond[2]
43. City of Suffolk
44. City of Virginia Beach
45. City of Williamsburg[1]
46. Town of West Point

1 - Within 10 miles of SPS

2 - Within 50 miles of North Ann Power Station

3 - Within 50 miles of Calvert Cliffs Nuclear Power Plant

North Anna Power Station Ingestion Pathway-Adjacent Jurisdictions

1. Albemarle County
2. Amelia County
3. Buckingham County
4. Caroline County[1,3]
5. Chesterfield County[2]
6. Culpeper County
7. Cumberland County
8. Essex County[2,3]
9. Fairfax County[3]
10. Fauquier County
11. Fluvanna County
12. Goochland County
13. Greene County
14. Hanover County [1,2]
15. Henrico County [2]
16. King George County[3]
17. King & Queen County[2, 3]
18. King William County[2]
19. Louisa County[1]
20. Madison County
21. New Kent County[2]
22. Orange County[1]
23. Page County
24. Powhatan County
25. Prince William County[3]
26. Rappahannock County
27. Richmond County[2,3]
28. Rockingham County
29. Spotsylvania County[1]
30. Stafford County[3]
31. Westmoreland County[3]
32. City of Charlottesville
33. City of Fredericksburg
34. City of Manassas
35. City of Richmond[2]
36. Charles County (Maryland)

1 - Within 10 miles of NAPS

2 - Within 50 miles of Surry Power Station

3 - Within 50 miles of Calvert Cliffs Nuclear Power Plant

Calvert Cliffs Nuclear Power Station Ingestion Pathway-Adjacent Jurisdictions

1. Accomack County (Tangier Island)[2]
2. Arlington County
3. Caroline County[1]
4. City of Alexandria
5. City of Falls Church
6. Essex County[1,2]
7. Fairfax County [1]
8. King & Queen County[1,2]
9. King George County[1]
10. Lancaster County[2]
11. Middlesex County[2]
12. Northumberland County[2]
13. Prince William County[1]
14. Richmond County[1,2]
15. Stafford County[1]
16. Westmoreland County[1]

1 - Within 50 miles of North Ann Power Station

2 - Within 50 miles of Surry Power Station

Livestock Requirements* The following charts are extracted from ASAE (American Society of Agricultural Engineers) Standards 1986.

Water Requirements per Animal per Day*

Ample Supply		
Animal	**Liters**	**Gallons**
Cattle	64.0	17.0
Hogs	9.5	2.5
Sheep	5.8	1.5
Poultry		
-Layers and Broilers-	0.24	0.06
-Turkeys-	1.26	0.30
Limited Supply**		
Animal	**Liters**	**Gallons**
Cattle	26.5	7.0
Hogs	4.8	1.2
Sheep	3.8	1.0
Poultry		
-Layers and Broilers-	0.20	0.05
-Turkeys-	0.50	0.12

* Average requirements at a temperature of 27ºC (80 ºF)

** Water rationing facilities required

Limited Feed Requirements for livestock per day*

Animal	Feed	Amt.of Feed % of body wt.
Cow, lactating	hay	2
Cow, dry	hay	1
Calf, less than 9 mo.of age	hay	1
	40% protein supplement	0.2
Sheep, ewe	alfalfa hay	1
Sheep, lamb 27 kg. (60 lbs)	alfalfa hay	1.5
Sow, pregnant	corn	0.4
	35% protein supplement	0.2
Sow, lactating	corn	1
	35% protein supplement	0.2
Hog, 45kg. (100 lbs.)	corn	1.5
Hog, 91kg. (200 lbs.)	corn	1
Laying hen	mash	2
Turkey, 5 kg (10 lbs.)	mash	1.7
Turkey, 11 kg (25 lbs.)	mash	1.3

* Equivalent feeds may be substituted. Hay should be at least one-half legume or equivalent in protein content.

Limited Space for Animals in Fallout Shelters

Animal	Space per Animal	
	Sq. M.	Sq. Ft.
Cow	1.9	20
Calf	1.1	12
Sheep, ewe	0.93	10
Sheep, lamb 27 kg. (60 lbs)	0.37	4
Sow, lactating	3.0	32
Hog, 45kg. (100 lbs.)	0.37	4
Hog, 91kg. (200 lbs.)	0.56	6
Chicken	0.06	0.7
Turkey, 5 kg (10 lbs.)	0.14	1.5
Turkey, 11 kg (25 lbs.)	0.19	2

* These charts were originally captured from ASAE Standards 1986, and compared to ANSI/ASAE EP282.2 FEB 04. These were approved in 1993, and reaffirmed MAR 2004 by American National Standards Institute

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This publication prepared in
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Virginia Department of Agriculture and Consumer Services
Virginia Department of Radiological Health
Washington Military Department Emergency Management Division

For more information, please contact the VDEM Communications Office at pio@vdem.virginia.gov, by phone at 804-267-7600, or by mail:

Virginia Department of Emergency Management
Communications Division
9711 Farrar Court STE 200
Richmond, VA 23236

Commonwealth of Virginia Ingestion Pathway Crosswalk				
	NUREG-0654 FEMA-REP-1, Rev. 2	**Meet the Intent**	**Planning Requirements found in the Radiological Emergency Preparedness (RPM) Manual 2019**	**NUREG Cross-Reference (Plan Location and Page Number)**
A	**ASSIGNMENT OF RESPONSIBILITY**			
A.1	The Federal, state, local, and tribal governments, licensee, and other private sector organizations that comprise the overall response for the EPZs are identified	**i.**	A description of all Federal, state, local, tribal, and private-sector organizations comprising the overall offsite response; and	Basic Plan, Section 7 ; See COVRERP for Federal and Private Sector
		ii.	A list of all principal and supporting organizations.	Basic Plan, Section 7
A.4	Written agreements with the support organizations having an emergency response role within the EPZs are referenced. The agreements describe the concept of operations, emergency response measures to be provided, mutually acceptable criteria for their implementation, and arrangements for exchange of information.	**i.**	A list of support organizations and the type of assistance, including capabilities and resources they will provide;	Basic Plan, Section 7
		iii.	Written agreements annotate the services to be provided through the agreement and how those services will be activated;	Not applicable for Government agencies who's functions are inherently response oriented. See COVRERP further
		v.	A statement that written agreements are reviewed annually to verify their validity, including developing new written agreements and updating signatories as necessary	Basic Plan, Section 7.2.1
C	**EMERGENCY RESPONSE SUPPORT AND RESOURCES**			
C.2	Provisions made for additional emergency response support and resources are described and include the following:			Basic Plan, Section 7
C.2.a	The individual(s), by title/position, authorized to request emergency response support and resources from responding organizations.	**i.**	The individual(s), by title/position, authorized to request emergency response support and resources.	Basic Plan, Section 7
C.2.b	(1) Each organization from which emergency response support and/or resources may be requested, (2) the circumstance(s) in which the emergency response support and/or resources would be required, (3) the process for requesting needed emergency	**i.**	A process for identifying potential shortfalls in capabilities and resources;	Basic Plan, Section 7
		ii.	The organization(s) from which emergency response support and/or resources may be requested;	Basic Plan, Section 7
		iii.	Circumstances under which the emergency response support	Basic Plan, Section 7

	response support and/or resources, (4) categories of capabilities and/or resources expected to be provided, (5) when the expected emergency response support and/or resources would be available once requested, and (6) how integration would occur.		and/or resources would be needed;	
		iv.	The process for requesting needed emergency response support and/or resources;	Basic Plan Section 7
		v.	Categories of capabilities and/or resources expected to be provided;	Basic Plan Section 7
		vii.	How incoming emergency response support and/or resources will integrate with response efforts.	Basic Plan Section 7
C.4	Radiological laboratories, their general capabilities, and expected availability to provide radiological monitoring analysis services that can be used in an emergency are described. Plans to augment the identified radiological laboratories are described.	i.	The laboratories qualified to analyze samples of potentially contaminated materials;	See COVRERP
D	**EMERGENCY CLASSIFICATION SYSTEM**			
D.4	Emergency response measures based on the ECL declared by the licensee and applicable offsite conditions are described.	i.	The minimum emergency response measures to be taken to protect the public at each ECL, given the offsite conditions at the time of the emergency.	Basic Plan Section 8.1 & 8.3
E	**NOTIFICATION METHODS AND PROCEDURES**			
E.4	Each organization establishes the contents of the initial and follow-up messages to the public including, as applicable, instructions for protective actions.	ii.	The process for selecting, modifying, approving, and releasing EAS messages;	See COVRERP
		v.	Provisions for foreign language translations of EAS messages and special news broadcasts, if required.	See COVRERP
E.5	Provisions are made to provide timely supplemental information periodically throughout the radiological incident to inform the public.	ii.	A description of supplemental topics/messages that may be disseminated; and	See COVRERP
		iii.	A description of the method for disseminating supplemental information.	Appendix B; See COVRERP
F	**EMERGENCY COMMUNICATIONS**			
F.1	Each principal response organization establishes redundant means of communication and addresses the following provisions:			
F.1.a	Continuous capability for notification to, and activation	i.	A description of the system used to ensure continuous	Basic Plan Section 8.2

	of, the emergency response network, including a minimum of two independent communication links.		availability to receive and transmit notifications; and	
		ii.	A description of the equipment used for notifying and communicating with the organization's personnel and other response organizations. The equipment described must include at least two independent communication links.	Basic Plan Section 9.1.2 & 9.1.3
F.1.b	Communication with applicable organizations to include a description of the methods that may be used when contacting each organization.	i.	Provisions for a minimum of two independent communication methods between all applicable organizations requiring communications within the plume and ingestion exposure pathway EPZs; and	Basic Plan Section 7.2, 7.3, 7.4 and 9.2
		ii.	Organizational titles and alternates for both ends of the communication links.	Basic Plan Section 8.2 and Appendix A
F.1.c	Systems for alerting or activating emergency personnel in each response organization.	i.	A general description of how emergency personnel are alerted and activated; and	Basic Plan Section 9.1 and Appendix A
		ii.	Lists of names and contact information of emergency personnel to alert or activate based on the ECL.	Appendix A
F.3	The testing method and periodicity for each communication system used for the functions identified in evaluation criteria E.2, F.1 and F.2, are described.	i.	A description of the test method and periodicity (e.g., monthly, quarterly or annually) for each communication system used for the functions identified in evaluation criteria E.2 F.1, and F.2.	Basic Plan Section 9.2
I	**ACCIDENT ASSESSMENT**			
I.2	Methods for assessing contamination of drinking water through liquid release pathways or deposition of airborne materials for NPP sites located on or near bodies of water from which public drinking water is drawn.	i.	Methods and locations for sampling drinking water; and	See COVRERP
		ii.	Supporting laboratory procedures that demonstrate the capability to detect radioisotopes at derived response levels (DRLs) for the most sensitive population.	See COVRERP
I.6	Each organization, where appropriate, provides methods, equipment and expertise to make timely assessments of the actual or potential magnitude and locations of any radiological hazards through liquid or gaseous release pathways, including development of post-plume	ii.	The composition of FMTs (e.g., organizations involved, number of teams [two or more], number of members on each team);	See COVRERP
		ix.	Procedures for field monitoring, sample collection, and field sample analysis and the calculations to be used to characterize the plume, specifically those used to	See COVRERP

	protective action recommendations (PARs) for comparison to current Federal guidance.		determine radioiodine concentrations;	
		xi.	Requirements for FMT members' radiological exposure control.	See COVRERP
I.7	The capability to detect and measure radioiodine concentrations in air in the plume exposure pathway EPZ as low as 10^{-7} $\mu Ci/cc$ (microcuries per cubic centimeter) under field conditions is described. The sample collection process takes into account the sample flow rate, collection efficiency of the sample media used to collect the sample, duration of the sample, counter efficiency, and background radiation, including interference from the presence of noble gases.	iii.	Calculations that use factors consistent with the ORO specific procedures to calculate airborne radioiodine concentrations.	See COVRERP
I.8	A means is established for relating the various measured parameters (e.g., exposure rates, contamination levels, and air activity levels) to dose or dose rates. Provisions are made for estimating integrated dose from the projected and actual dose rates and for comparing these estimates with current Federal guidance. In addition, provisions are established to validate dose projections with field data and compare projections with other organizations also calculating dose projections. The detailed provisions are described in implementing procedures.	i.	A description of personnel and equipment that will be involved in dose assessment;	See COVRERP
		ii.	A description of dose assessment computer software, including documentation and data input procedures, that will be used;	See COVRERP
		iv.	Information/variables to run the model, including proper units of measure;	See COVRERP
J	**PROTECTIVE RESPONSE**			
J.6	The basis and methodology are established for the development of PARs for the responsible OROs, including evacuation, sheltering, and, if appropriate, radioprotective drug use, for the plume exposure pathway EPZ. Current Federal guidance is used.	i.	The rationales used to make initial and subsequent PARs;	See COVRERP
		ii.	The basis and methodology used in developing PARs, including references to applicable Federal guidance; and	See COVRERP
J.11	A capability for implementing protective actions based on	i.	The process for considering PARs provided;	See COVRERP

	current Federal guidance is established. The process ensures coordinated implementation of PADs with all appropriate jurisdictions. The process for implementing protective actions for the plume exposure pathway EPZ is described and includes the following:	ii.	Procedures for making PADs and the rationale for initial and subsequent PADs;	See COVRERP
		iv.	The process to ensure coordination of PADs with all appropriate jurisdictions.	See COVRERP
J.11.e	Means for the initial and ongoing control of access to evacuated areas and organizational responsibilities for such control, including identifying pre-selected control points.	i.	Means for initial and ongoing control of access to evacuated areas;	Basic Plan Section 7.4
		ii.	Organization(s) responsible for providing access control and staffing TCPs and ACPs;	Basic Plan Section 7.4 and Appendix C, Section 3.3
		v.	Procedures and responsibilities for controlling ingress and egress to other areas affected by an incident; and	Appendix C, Section 3.3
J.11.g	Identification of and means to implement precautionary protective actions (e.g., actions taken at a SAE).	iii.	Methods used to implement precautionary protective actions.	Appendix A
J.12	Protective actions to be used for the ingestion exposure pathway EPZ are specified, including the methods for protecting the public from consumption of contaminated foodstuffs, and are based on current Federal guidance.	i.	The organization and individual(s), by title/position, with the authority to make decisions in the ingestion exposure pathway EPZ;	See COVRERP
		ii.	Planned ingestion protective actions and the rationale for the selection of actions;	Appendix E, See COVRERP
		iii.	The methodology used to designate the areas of concern where monitoring and sampling will be implemented;	See COVRERP
		iv.	The methodology for collecting agricultural samples, including identifying field team members, providing necessary supplies, names and addresses of points of contact to obtain permission to collect samples, and chain of custody procedures;	See COVRERP
		v.	The analytical laboratory capability to analyze various samples and the procedure for reporting analytical results to the appropriate organization;	See COVRERP
		vi.	The location and means of obtaining up-to-date information on licensed agribusiness facilities within the ingestion exposure pathway EPZ;	See COVRERP

		vii.	The ability to obtain information on facilities outside the ingestion exposure pathway EPZ at risk for receiving potentially contaminated products, including names and telephone numbers for points of contact;	See COVRERP
		viii.	The location and means of obtaining up-to-date information on land use (i.e., which crops are being grown in which areas), including the status of harvesting;	See COVRERP
		ix.	The derived intervention levels (DILs) that would warrant implementation of protective actions and the rationale and assumptions used to develop the DILs;	See COVRERP
		x.	The availability of suitable maps, including GIS maps, for recording various data; and	See COVRERP
		xi.	The means by which the agribusiness will be notified of a PAD that would affect the ability to sell or move foodstuffs or agricultural products.	See COVRERP
J.14	General plans for the removal or continued exclusion of individuals from restricted areas are developed. Relocation plans include:	i.	General plans for the removal or continued exclusion of individuals from restricted areas; and	Appendix C
		ii.	Relocation plans are developed when the decision for removal or continued exclusion of individuals from restricted areas.	Appendix C Section 3.1
J.14.b	Means to identify and determine the boundaries of relocation areas, including a buffer zone.	i.	The process used to identify areas where the projected first-year dose will exceed the 2 REM relocation protective action guide (PAG); and	Appendix C Section 3.1
		ii.	The process for identifying the need for buffer zones, as well as their establishment when warranted.	Appendix C Section 3.1
J.14.c	Prioritization of relocation based on projected dose to an individual and the timeframe for relocation.	i.	Priorities for relocation; and	Appendix C Section 3.1
		ii.	Designation of intervals to continually assess projected doses from the relocation areas.	Appendix C Section 3.1
J.14.d	Control of access to and egress from relocation areas and	i.	Establishment of access control/check points around the relocation area;	Appendix C Section 3.1

	security provisions for evacuated areas.	ii.	Processes for identifying those who are authorized to enter relocation areas;	Appendix C, Section 3.3, Tab B and Tab C
		iii.	Methods to provide exposure and contamination control to those authorized to enter relocation areas; and	Appendix C, Section 3.3, Tab A
		iv.	Establishment of monitoring and decontamination stations at points of egress in the buffer zone around relocation areas.	Appendix C, Section 3.3
J.14.e	Contamination control during relocation.	i.	Methods for monitoring and decontamination of individuals who are being relocated from areas not previously evacuated.	Appendix C, Section 3.1
J.14.f	Means for coordinating and providing assistance during relocation.	i.	Physical and economic assistance for those who are relocated; and	Appendix C, Section 3.5, See COVRERP
		ii.	Provisions for physical, economic, and financial assistance of individuals being relocated.	Appendix C, Section 3.5, See COVRERP
K.	**RADIOLOGICAL EXPOSURE CONTROL**			
K.2.b	The process for authorizing emergency workers to incur exposures that may result in doses in excess of the current Federal guidance is described.	i.	Emergency worker dose limits;	Basic Plan, Section 8.5
		iii.	Authorization and documentation processes for authorizing emergency workers to exceed dose limits, including exceeding limits identified in current Federal guidance;	Basic Plan, Section 8.5.3
K.4	Action levels for determining the need for decontamination are specified and the means for radiological decontamination are established for emergency workers and the general public, as well as equipment, vehicles, and personal possessions. The means for disposal of contaminated waste created by decontamination efforts are also established.	i.	A description of facilities for monitoring and decontaminating emergency workers, equipment, and vehicles;	Appendix C, Section 3.4
		iv.	Number of people needed to perform monitoring and decontamination operations;	Appendix C, Section 3.4
		vi.	Other supplies and equipment needed for monitoring and decontamination;	Appendix C, Section 3.3 & Section 4.2 - 4.4
		vii.	Methods for controlling the spread of contamination at the emergency worker and general public monitoring facilities;	Appendix C, Section 3.4
		viii.	The process for contaminated waste collection, handling, and storage;	See COVRERP
		x.	The process for re-monitoring individuals, equipment, vehicles, and personal possessions, and recording the results; and	See COVRERP

		xi.	Criteria for sending individuals with fixed contamination for medical attention.	See COVRERP
M	**RECOVERY, REENTRY, AND POST-ACCIDENT OPERATIONS**			
M.1	General recovery, reentry, and return plans for radiological incidents are developed, as appropriate. These plans address reoccupancy, as appropriate. The plans should include:	i.	Planned recovery efforts, including a list of recovery-specific actions and organizations responsible for carrying them out;	Appendix C, Section 3.5
		ii.	The process for public reentry into restricted areas;	Appendix C, Section 3.3
		iii.	The process for establishing restricted areas; and	Appendix C, Section 3.1
		iv.	The process for establishing reoccupancy decisions.	Appendix C, Section 3.2
M.1.b	Provisions for reentry into restricted areas, including exposure and contamination control, as appropriate. A method for ordinating and implementing decisions regarding temporary reentry into restricted areas is addressed.	i.	The process for authorizing reentry, including the individual(s), by title/position, authorized to grant access into a restricted area;	Appendix C, Section 3.3
		ii.	The evaluation criteria/method for approving reentry requests;	Appendix C, Section 3.3
		iii.	The access control process for reentry, including the authorization verification method by access control/check point officials;	Appendix C, Section 3.3
		iv.	Provisions for exposure control of those authorized reentry;	Appendix C, Section 3.3 and Tab A
		v.	Contamination control practices within a restricted area; and	Appendix C, Section 3.3 and Tab A
		vi.	Methods and resources for monitoring and decontamination of individuals exiting a restricted area.	Appendix C, Section 3.3
M.4	The process for initiating recovery actions is described and includes provisions to ensure continuity during transfer of responsibility between phases. The chain of command is established.	i.	The process for initiating recovery actions;	Appendix C, Section 3.5
		ii.	Provisions for continuity during transfer of responsibility from the emergency phase to the recovery phase;	Appendix C, Section 3.5
		iv.	The means to keep all involved response organizations informed of the recovery efforts.	Appendix C, Section 3.5
M.5	The framework for relaxing protective actions and allowing for return are described. Prioritization is given to restoring access to vital services and facilities.	i.	Criteria for relaxing protective actions and allowing for public return;	See COVRERP
		ii.	The process for allowing public return into a previously restricted area; and	See COVRERP

		iii.	A process for establishing priorities in restoring vital services and facilities to areas where return is permitted.	See COVRERP
M.6	The organization(s) responsible for developing and implementing cleanup operations offsite is identified.	i.	The appropriate local, state, tribal or Federal organization(s) responsible for cleanup operations; and	See COVRERP
		ii.	Resources that may be needed to conduct cleanup efforts.	See COVRERP
M.8	A method for periodically conducting radiological assessments of public exposure is established.	i.	The agencies responsible for, and involved in, long-term dose assessment activities post-incident; and	See COVRERP
N	**EXERCISES AND DRILLS**			
N.2.b	***Ingestion Exposure Pathway Exercises.*** Ingestion exposure pathway exercises are conducted at least once every eight years. These exercises include mobilization of state, local, and tribal 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.	i.	Capabilities are exercised at least once every eight years in response to an ingestion exposure pathway scenario;	Basic Plan Section 12.2
		ii.	The numbers and types of personnel participating in an ingestion exposure pathway exercise will be sufficient for demonstrating capabilities required by the plans/procedures; and	Basic Plan Section 12.4
		iii.	OROs within the 50-mile ingestion exposure pathway EPZ that are not part of the full participation ingestion exercise with the state, participate in an ingestion TTX or other ingestion pathway training activity at least once during each eight-year exercise cycle.	Basic Plan Section 12.2
N.4	Drills are designed to enable an organization's demonstration and maintenance of key skills and capabilities necessary to fulfill functional roles. Drills include, but are not limited to, the following at their noted frequencies.	i.	All major elements of plans/procedures are tested at the minimum frequency specified.	Basic Plan Section 12.3
N.4.e	***Ingestion Pathway and Post-Plume Phase Drills.*** Ingestion pathway and post-plume phase drills are conducted biennially. These drills involve sample plan development, analysis of lab results from samples, assessment of the impact on food and agricultural products, protective decisions for	i.	Ingestion pathway drills are conducted biennially; and	Basic Plan Section 12.3
		ii.	Participants include any OROs that have roles/responsibilities for the ingestion pathway and/or post-plume phase activities.	Basic Plan Section 12.3

	relocation, and food/crop embargos.			
N.4.f	***Communications Drills.*** Communications amongst and between emergency response organizations, including those at the state, local, and Federal level, the FMTs, and nuclear facility within both the plume and ingestion exposure pathway EPZs, are tested at the frequencies determined in evaluation criterion F.3. Communications drills include the aspect of understanding the content of messages and can be done in conjunction with the testing described in evaluation criterion F.3.	i.	Communications drills between all applicable emergency response organizations within the plume and ingestion exposure pathway EPZs are conducted at the frequencies determined in evaluation criterion F.3; and	Basic Plan, Section 12.3
P	**RESPONSIBILITY FOR THE PLANNING EFFORT: DEVELOPMENT, PERIODIC REVIEW, AND DISTRIBUTION OF EMERGENCY PLANS**			
P.3	The individual(s) with the responsibility for the development, maintenance, review, updating, and distribution of emergency plans, as well as the coordination of these plans with other response organizations, is identified by title/position.	**i.**	The individual(s), by title/position, responsible for developing, maintaining, reviewing, updating, and distributing emergency plans/procedures, as well as coordinating plans/procedures with other response organizations.	Basic Plan, Section 11
P.4	The process for reviewing annually, and updating as necessary, the emergency plan, implementing procedures, maps, charts, and agreements is described. The process includes a method for recording changes made to the documents and, when appropriate, how those changes are retained.	**iv.**	The process for correcting identified findings and plan issues.	Basic Plan Record of Changes
P.5	Provisions for distributing the emergency plan and implementing procedures to all organizations and appropriate individuals with responsibility for implementation of the plan/procedures are described.	**i.**	A list of the organizations and individuals, by title/position, who are to receive the updated plans/procedures.	Appendix D
		ii.	The process for distributing the latest plans/procedures to appropriate organizations and individuals.	Appendix D

P.6	A listing of annexes, appendices, and supporting plans and their originating agency is included in the emergency plan.	**i.**	A list of annexes, appendices, and supporting plans.	Basic Plan Section 13 & 14
		ii.	Originating agency for each listed annex, appendix, and support plan.	Basic Plan Section 1.3 Appendix B
P.7	An appendix containing a listing by title of the procedures required to maintain and implement the emergency plan is included. The listing includes the section(s) of the emergency plan to be implemented by each procedure.	**i.**	A list of all implementing procedures associated with the emergency plan.	Basic Plan Table of Contents
		ii.	Identification of which section(s) of the plan are implemented by each procedure.	Basic Plan Table of Contents
P.8	A table of contents and a cross-reference index to each of the NUREG-0654/FEMA-REP-1, Rev.2 evaluation criteria are included. The evaluation criteria that do not apply are identified.	**i.**	A table of contents.	Basic Plan Table of Contents
		ii.	A cross-reference between the plans/procedures and the NUREG-0654/FEMA-REP-1, Rev. 2 evaluation criteria.	Basic Plan Crosswalk
P.10	The administrative process for the periodic review and updating of contact information identified in the emergency plan and implementing procedures is described.	**i.**	The process for reviewing and updating contact information.	Basic Plan Sections 10 & 13