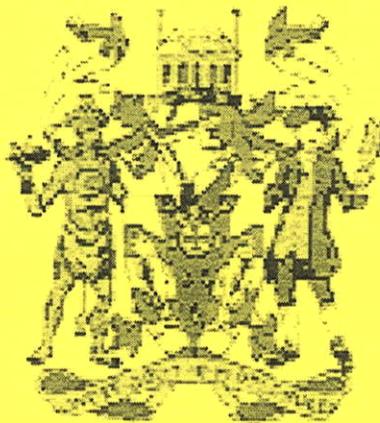


COUNTY OF KING WILLIAM
Commonwealth of Virginia

RADIOLOGICAL EMERGENCY RESPONSE PLAN

Ingestion Exposure Pathways



King William County
Office of Emergency Management

In Association with
Virginia Department of Emergency Management

January 2003

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FOREWORD

This Plan complements and is designed to interface with the Commonwealth of Virginia Radiological Emergency Response Plan (COVRERP), the North Anna Power Station Emergency Plan, and the Surry 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 safety in dealing with radiological emergencies caused by incidents at nuclear reactors or by transportation accidents occurring in King William County involving radioactive materials.

I. AUTHORITIES AND REFERENCES

A. AUTHORITIES

1. Commonwealth of Virginia Emergency Services and Disaster Law of 2000, as amended.
2. Radiation Control Act, Title 32, Chapter 6, Article 8, Code of Virginia.
3. An ordinance promulgated by the King William County Board of Supervisors providing for the development of emergency operations plans and support organizations dated April 26, 1993.

B. REFERENCES

1. Commonwealth of Virginia Emergency Operations Plan, Volume I, Basic Plan, May 1997, as amended.
2. The Commonwealth of Virginia Radiological Emergency Response Plan (COVRERP), Volume III, Originally Published June 1983, Amended March 2002.
3. The Commonwealth of Virginia, Department of Health, Bureau of Radiological Health Radiological Emergency Response Plan, 1999.
4. NUREG-0654/FEMA-REP-1, Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants, U.S. Nuclear Regulatory Commission/Federal Emergency Management Agency, (NRC/FEMA) November 1980, Rev. 1.
5. FEMA REP-2, Guidance on Offsite Emergency Radiation Measurement Systems, Phase 1 - Airborne Release, June 1990.
6. FEMA REP-12, Guidance on Offsite Emergency Radiation Measurement Systems, Phase 2 - The Milk Pathway.
7. FEMA REP-13, Guidance on Offsite Emergency Radiation Measurement Systems, Phase 3 - Water and Non-Dairy Food Pathway.
8. FEMA-REP-14, Radiological Emergency Preparedness Exercise Manual, FEMA, September 1991.
9. FEMA-REP-15, Radiological Emergency Preparedness Exercise Evaluation Methodology (EEM), FEMA, September 1991.
10. Radiological Emergency Preparedness: Exercise Evaluation Methodology and Alert and Notification, Part II, Federal Emergency Management Agency, Federal Register, Vol. 66, No. 177/Wednesday, September 12, 2001.
11. Southern Mutual Radiation Assistance Plan (SMRAP), Southern States Energy Board, December 2001.

12. Manual of Protective Action Guides and Protective Actions for Nuclear Incidents, EPA 400-R-92-001, May 1992.
13. Virginia Power North Anna Power Station Emergency Plan, as revised.
14. Virginia Power Surry Power Station Emergency Plan, as revised.
15. Federal Radiological Emergency Response Plan, Federal Emergency Management Agency, as amended.
16. King William County Emergency Operations Plan, dated January 2003.

II. DEFINITIONS

- A. Alert - The second of the four emergency classification levels.
- B. Access Control Points - Locations, usually manned by law enforcement officers, which are strategically positioned to prevent entry into the evacuated area.
- C. Committed Dose - The radiation dose due to radionuclides in the body over a 50 year period following their inhalation or ingestion.
- D. Committed Effective Dose Equivalent - Dose incurred from inhalation of radioactive materials from exposure and intake during the early phase.
- E. Decontamination - The removal or reduction of contaminated radioactive materials from a surface.
- F. Deep Dose Equivalent - Deep Dose Equivalent and Effective Dose Equivalent are the same if the body exposure is uniform (a typical situation).
- G. Dose, Projected - The estimated radiation dose that affected population groups may potentially receive if no protective actions are taken.
- H. 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.
- I. Dose Rate - The amount of radiation to which an individual is exposed per unit of time.
- J. Dosimeter - An instrument for measuring the total accumulated exposure to penetrating ionizing radiation.
- K. 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.
- L. Emergency Operations Facility (EOF) - 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 EOF provides information on plant conditions and

- utility actions to Federal, State, and local authorities.
- M. Emergency Phase - The initial time period during which actions are taken in response to a threat of release or a release in progress.
 - N. General Emergency - The fourth and highest of the four emergency classification levels.
 - O. Ingestion Pathway Emergency Planning Zone - An area delineated by a circle around a nuclear facility used in preplanning. The primary concern is preventing internal exposure to radioactive materials through the food pathway.
 - P. Intermediate Phase - The period beginning after the source and releases have been brought under control and environmental measurements are available.
 - Q. 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.
 - R. Protective Action Guide (PAG) - Levels of radiation doses to individuals in the general population that warrants protective action.
 - S. Protective Actions - Emergency measures taken for the purpose of preventing or minimizing radiological exposure that would likely occur if no actions were taken
 - T. Radiological Monitoring - The process of using a radiological survey instrument to locate and measure radioactive contamination.
 - U. 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.
 - V. Reentry - The temporary return of individuals into a restricted zone under controlled conditions.
 - W. Relocation - A protective action, taken in the post-emergency 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.
 - X. 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.
 - Y. Restricted Area - 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.
 - Z. Return - The reoccupation of areas cleared for unrestricted residence or use by previously evacuated or relocated populations.
 - AA. Site Area Emergency - The third of the four emergency classification levels.

- BB. Total Effective Dose Equivalent - The sum of the Deep Dose Equivalent and the Committed Effective Dose Equivalent
- CC. Thyroid Exposure - Radiation exposure to the thyroid through inhalation or ingestion of certain radioactive materials.
- DD. Unusual Event - The first and lowest of the four emergency classification levels.
- EE. Whole Body Exposure - Direct external radiation exposure to the body from airborne or deposited radioactive materials.

NOTE: A more comprehensive listing of terms that are unique to fixed nuclear facilities and transportation of radioactive materials is included in Appendix 16 of the COVRERP.

III. 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 King William County 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.

IV. SCOPE

This plan applies to radiological emergencies that may occur within or affect King William County. An emergency could be caused by events at the North Anna Power Station (NAPS), 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.

V. SITUATION

A. POTENTIAL SOURCES OF RADIOLOGICAL EMERGENCIES

- 1. Nuclear Power Plant Reactors
 - a. The North Anna Power Station (NAPS) is located in Louisa County on Lake Anna. The plant consists of two pressurized water nuclear reactors (Units 1 and 2) that generate nominally an electrical output of 982 megawatts each. The station is owned and operated by Virginia Power.
 - b. The Surry Power Station (SPS) is located on the James River in Surry County. The plant consists of two pressurized water nuclear reactors (Units 1 and 2) that generate nominally an electrical output of 855 megawatts each. The station is owned and operated by Virginia Power.
 - c. 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.

2. Transportation Accidents

Another potential source for a radiological emergency is a transportation accident involving shipments of radioactive materials being transported in and through King William County. 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.

3. Nuclear Weapon 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 in conjunction with the lead of Cognizant Federal Agency (CFA) will manage overall coordination of these operations.

B. 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 NAPS or 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, 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 a commercial nuclear power station like the Surry Power Station 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 NAPS or 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.

C. SCOPE OF POTENTIAL RADIOLOGICAL EMERGENCIES

NRC and 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.

1. PLUME EXPOSURE EMERGENCY PLANNING ZONE

The first, the Plume Exposure EPZ, is defined as approximately a 10-mile radius surrounding the North Anna or Surry Power Station. 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. See Attachment 3.

2. INGESTION PATHWAY EMERGENCY PLANNING ZONE

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

- a. 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.
- b. There may be conversion of atmospheric-suspended iodine to chemical forms that do not readily enter the Ingestion Pathway.
- c. Much of any particulate material in a radioactive plume would have been deposited on the ground within 50 miles of the facility.
- d. 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.

King William County is within the 50-mile Ingestion Exposure Pathway of the North Anna Power Station and the Surry Power Station.

3. TIME FRAMES

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

- a. 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.
- b. Intermediate Phase - This phase begins when the source and release have been brought under control and environmental measurements are available on which to base additional protective actions.
- c. Recovery Phase - During this phase actions are taken to reduce radiation levels to acceptable levels.

D. 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.

E. 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. In King William County the Ingestion Exposure Pathway is the primary concern.

1. 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. See Attachment 1.

2. SECTORS

To facilitate identification of areas that may be affected by a radiological emergency, the area around a facility is divided into 16 sectors labeled alphabetically (A, B, C, D, E, F, G, H, J, K, L, M, N, P, Q, R), each 22-1/2 degrees, starting at true north of the facility and continuing clockwise around the site. Sector nomenclature is primarily utilized by the utility but would also be applicable to ingestion pathway jurisdictions.

VI. MISSION

The mission of King William County 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.

VII. ORGANIZATION

A. OVERVIEW

Generally, the Virginia Department of Emergency Management (VDEM) in cooperation with the Virginia Department of Health, Agriculture and Consumer Services 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. King William County will continue to be responsible for specific local government actions and will be notified of Federal and State actions within the County.

B. KING WILLIAM COUNTY

The County organization for response to a radiological emergency is essentially the same as that for other peacetime disaster operations. This organization is described in the King William County Emergency Operations Plan. Within this government structure, the Chairman of the King William County Board of Supervisors serves in the role of County Director of Emergency Management, directing the response through the County Coordinator of Emergency Management. The Coordinator is responsible for coordinating the overall response of this jurisdiction.

County 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 King William County are as follows:

1. OFFICE OF EMERGENCY MANAGEMENT

- a. Ensure Continuity of Government.
- b. Supervise the operation of the County 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.
- c. Provide direction and control for the emergency response by the County.
- d. Provide for coordinated response actions with local extension agents/damage assessment teams.
- e. Serve as the County point of contact with State agencies.
- f. Request State assistance, as necessary.
- g. Coordinate media relation functions in coordination with the VDEM Public Affairs Office. See Appendix B (Public Information Procedures) and Appendix D (Telephone Directory) for telephone numbers for VDEM Public Affairs Office (PAO), Virginia EOC, and other offices

and locations where the VDEM PAO may be contacted. Always contact the VEOC unless another number is published for this purpose.

- h. Coordinate radiological emergency preparedness through the following functions:
 - (1) Provide training
 - (2) Coordinate training provided by the State

2. FIRE & RESCUE/HAZARDOUS MATERIALS

- a. Provide decision-making official(s) to the County EOC.
- b. Remove victims from any situation in which injury or loss of life has occurred, or the potential for injury or loss of life exists, to include any situation involving threat of fire or explosion.
- c. Monitor Radiological Defense for personnel protection and for reporting.
- d. Provide Radiological/Hazardous Materials Officer
 - (1) Monitor or track Federal and State sample collection activities within the County.
 - (2) Provide personnel to accompany Federal and State Sampling Teams provided local personnel is available and trained for such mission.
- e. Contain hazardous materials situations.
- f. Assist in dissemination of warning.
- g. Assist rescue squads as needed.

3. SHERIFF'S DEPARTMENT

- a. Provide a decision making official to the County EOC.
- b. Provide and maintain law and order.
- c. Notify key County officials and other agencies as outlined in SOPs.
- d. Assist the Coordinator of Emergency Management in identifying the need for State support.
- e. Provide security at the County EOC.
- f. Receive notifications of a radiological emergency and verify that notification, if necessary.
- g. Disseminate notification to all appropriate County department heads.

- h. Disseminate warnings.

4. PUBLIC AFFAIRS

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

5. EXTENSION AGENT

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

6. COUNTY HEALTH DEPARTMENT

- a. Provide listing of food stores, open wells and cisterns, and other consumer food operations that are located within the ingestion pathway.
- b. Provide an individual to the County EOC who will be available to coordinate response activities and give technical assistance as necessary.
- c. Coordinate with area hospitals.
- d. Inspect food, milk, and water supplies.

7. PUBLIC UTILITIES

- a. Provide listings of all water supply intake points within the ingestion exposure pathway EPZ.
- b. Supply alternate source of potable water, if necessary.

8. PLANNING DEPARTMENT

Provide population (estimate) within the ingestion pathway sectors or zones.

9. DISASTER RECOVERY TEAM

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

C. 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. Their capabilities are depicted below:

1. AMATEUR RADIO EMERGENCY SERVICES (ARES)

ARES/RACES may be activated to provide communications support. R.A.C.E.S. is an alliance of licensed radio amateurs operating under Subpart F, Part 97, Rules and Regulations, Federal Communications Commission.

2. FIRE AND RESCUE SERVICES

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

D. STATE

State agencies will provide support and assistance as requested by the County. 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 COVRRP.

1. AGRICULTURE AND CONSUMER SERVICES, VIRGINIA DEPARTMENT OF

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

- g. 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 Bureau of Radiological Health (BRH) and in accordance with established limits.

2. CONSOLIDATED LABORATORY SERVICES, DIVISION OF
(DEPARTMENT OF GENERAL SERVICES)

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

3. EMERGENCY MANAGEMENT, VIRGINIA DEPARTMENT OF

- a. Operate the Virginia Emergency Operations Center (EOC).
- b. Provide a VDEM State On-Scene Coordinator to the Local Emergency Operations Facility (LEOF).
- c. Provide warning in coordination with the State Police and the operators of fixed nuclear facilities.
- d. Provide emergency communications.
- e. Assist political subdivisions in development and maintenance of local Radiological Emergency Response Plans.
- f. Coordinate emergency response actions of Federal and State agencies.
- g. Notify the following Federal agencies and Fixed Nuclear Facilities of a radiological emergency:
 - (1) Notify Federal Aviation Administration air controllers at Richmond International Airport of a radiological emergency and request that aircraft be instructed to avoid the contaminated airspace until notified otherwise.
 - (2) Notify the Commander, Fifth U.S. Coast Guard District of a radiological emergency at the Surry Power Station and request establishment of traffic control of boats and ships on the James River in the vicinity of the Surry Power Station.
 - (3) Notify Fort Eustis of a radiological emergency at Surry Power Station that could affect the health and safety of personnel stationed at that installation.
- h. Notify the CSX System Railway Company of a radiological emergency at the North Anna Power Station or the Surry Power Station and request

that rail service in the affected area be discontinued temporarily.

- i. Notify the State Bureau of Radiological Health (day – 804-786-5932, night – 804-674-2400) immediately of all classes of accidents and incidents reported by operators of nuclear facilities.
 - j. Notify the Virginia Department of Transportation to establish roadblocks and to temporarily terminate ferry service between James City County and Surry County when appropriate.
 - k. Notify all other State agencies and support organizations that have emergency task assignments identified in the COVREMP.
 - l. Notify the State of Maryland EOC of a radiological accident at the North Anna Power Station that results in either a declaration of a Site Area Emergency or General Emergency. Notify the State of North Carolina EOC of a radiological accident at the Surry Power Station that results in either a declaration of a Site Area Emergency or General Emergency.
 - m. Monitor the transportation of hazardous radioactive materials in Virginia.
 - n. Provide public information, assisted by the Virginia Department of Health and the nuclear facility operator; and maintain and keep current a list of media representatives, including names and telephone numbers.
 - o. Coordinate radiological emergency response training and conduct annual training exercises.
 - p. Notify the Federal Emergency Management Agency (FEMA) when the emergency classification level at a nuclear power facility is classed as an Alert or higher level and provide updated information; and request assistance, if required, when the emergency classification level is classed as a Site Area Emergency or General Emergency.
 - q. Request assistance from the Federal government in accordance with the Federal Radiological Emergency Response Plan (FRERP).
4. ENVIRONMENTAL QUALITY, DEPARTMENT OF
- a. 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.
 - b. Provide assistance in collection and analysis of meteorological data.
 - c. Collect water samples from rivers and lakes located within the ingestion pathway EPZ for assessment*.
 - d. Collect fish samples from waters adjacent to the nuclear facility for assessment*.

- e. Assist the State Department of Health in radiological monitoring and accident assessment*.
- f. Define hazardous radioactive materials and promulgate rules and regulations for their transportation within the Commonwealth.
- g. 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 Bureau of Radiological Health (BRH) and in accordance with established limits.

5. GAME AND INLAND FISHERIES, DEPARTMENT OF

- a. Collecting samples of wildlife and fish suspected of being radiological contaminated for analysis by the State Department of Health*.
- b. Provide back-up communications to support emergency response activities.
- c. Provide small boats with motors for administrative, logistical, and operational use of waterways contiguous to nuclear power stations.
- d. Assist the Department of Health in radiological monitoring and accident assessment*.
- e. Assist in warning people in boats on Lake Anna in the vicinity of the North Anna Power Station.
- f. Assist in traffic control of boats of Lake Anna in the vicinity of the North Anna Power Station.
- g. Assist in traffic control of boats and ships on the James River in the vicinity of the Surry Power Station.
- h. Assist in warning persons in the Hog Island Wildlife Management Area in the vicinity of Surry Power Station.
- i. Assist in the evacuation of Surry Power Station personnel and other persons from Hog Island Wildlife Management Area, if necessary.
- j. Provide a decision-making official at the agency office to be in continuous contact with the Virginia EOC.

*Actions performed by DGIF in the ingestion exposure EPZs will be contingent upon radiation levels being deemed acceptable to the general populous by qualified persons from the Bureau of Radiological Health (BRH) and in accordance with established limits.

6. HEALTH, DEPARTMENT OF
 - a. Perform accident assessment, to include:
 - (1) Provision of the Radiological Emergency Response Team (RERT) for radiological assessment and response.
 - (2) Determining actual off-site radiological consequences.
 - (3) Record keeping and documentation of off-site effects of the accident.
 - b. 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.
 - c. Advise State and local officials on the implementation of pertinent protective actions based on accident assessment.
 - d. Task other State agencies for providing radiological monitoring teams and furnishing appropriate protective clothing, dosimeters, and monitoring equipment.
 - e. Establish radiological exposure control for:
 - (1) State and local government radiological emergency response personnel.
 - (2) Other emergency response personnel.
 - (3) The affected populace.
 - f. Develop and provide recommendations to provide appropriate controls to isolate food to prevent its introduction into commerce.
 - g. Determine whether condemnation or other disposition of contaminated foods is appropriate.
 - h. 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.
 - i. Provide other emergency health services.
 - j. 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.
 - k. Request and coordinate Federal assistance for monitoring and assessment provided under the Federal Radiological Emergency

Response Plan and provide administrative and logistical support and liaison to Federal personnel on request.

- l. Request and coordinate assistance for radiological monitoring and assessment under the Southern Mutual Radiation Assessment Plan (SMRAP).
 - m. Develop criteria for re-entry into homes and evacuated areas.
 - n. Advise local governments when re-entry criteria have been met
 - o. 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.
 - p. Procure, store, and administer the issuance of potassium iodide.
 - q. Provide Bureau of Radiological Health (BRH) Operations Officers and advisors and a decision-making official from the Virginia Office of Emergency Medical Services (OEMS) to the Virginia EOC.
7. MARINE RESOURCES COMMISSION, VIRGINIA
 - a. In case of a radiological emergency at the Surry Power Station, provide boats and assist in warning and evacuation, as required.
 - b. Assist the VDH and VIMS in environmental sampling of shellfish, finfish, and other marine life.
 - c. Assist the Virginia Department of Emergency Management (VDEM) in assessing initial damage to marine resources.
8. MARINE SCIENCE, VIRGINIA INSTITUTE OF
 - a. Assist in environmental sampling of shellfish, finfish, other marine life, and silt.
 - b. Assist the VDEM in assessing initial damage to marine resources.
9. TRANSPORTATION, VIRGINIA DEPARTMENT OF
 - a. Stock or identify locations where necessary barricade material and signs may be obtained to limit access to designated restricted areas*.
 - b. Deliver or locate barricade materials and signs as directed by the Virginia Department of Health-BRH, and in coordination with the State and local law enforcement agencies and VDEM.

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

10. VIRGINIA COOPERATIVE EXTENSION

- a. Provide advice to State and local officials on how to minimize losses to agricultural resources from radiation effects.
- b. Provide information and assistance to farmers and others to aid them in preparing for, and returning to normal after a radiological emergency.
- c. Conduct damage assessments in potentially affected areas and, in coordination with VDEM and the respective local government(s), inform farmers, growers and producers of any actions that should be undertaken.
- d. Provide damage assessment reports to VDEM and the respective local government(s).
- e. 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.

E. OPERATOR OF FIXED NUCLEAR FACILITY

1. Coordinate and interface nuclear facility Emergency Plans with State and local government emergency operations plans.
2. Perform the initial assessment of a radiological accident.
3. Conduct initial and on-going environmental sampling within the plume and ingestion exposure pathways.
4. Notify State and affected local governments of a radiological emergency.
5. Establish the Local Emergency Operations Facility (LEOF), as necessary.
6. Establish the Joint Information Center and coordinate news releases with State Public Affairs Office.
7. Notify and provide accident response and recovery coordination with the Nuclear Regulatory Commission and nuclear industry organizations, including nuclear insurers.
8. Provide a representative to the Virginia Emergency Operations Center, upon request.

VIII. CONCEPT OF OPERATIONS

A. 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.

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.

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.

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.

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.

B. NOTIFICATION

1. The operator of NAPS and SPS will notify local governments within the plume EPZ and the Virginia EOC when any one of the four emergency classification levels has been declared at the impacted facility.
2. The Virginia EOC will notify all jurisdictions within the ingestion exposure pathway and adjacent states of a radiological emergency occurring at the North Anna Power Station or the Surry Power Station. This notification will be made when a Site Area Emergency is declared, if not earlier.
3. 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.

C. ALERTING

1. Plume Exposure Pathway

A siren system is employed to alert the public within 10 miles of a nuclear power station. It is the primary means of notifying the public within 10-mile EPZs of NAPS and SPS.

2. Ingestion Exposure Pathway

The primary means for notifying local jurisdictions within the ingestion exposure pathway will be by Virginia Criminal Information Network (VCIN) with backup by commercial telephone. In King William County, initial notification will be received at the Sheriff's Department. The individual receiving the notification will then notify or transmit a copy of the Report of Emergency to the Coordinator of Emergency Management or his designated representative. See Attachment 5 for a copy of the Report of Emergency form for Ingestion Exposure Pathway notifications.

D. ACCIDENT ASSESSMENT

1. EMERGENCY PHASE

Dominion Virginia Power, based on the control room's instrumentation, will make initial assessment of the emergency. This initial assessment will include a projection of off-site consequences, and if indicated, recommended protective actions. Bureau of Radiological Health officials located in the LEOF will review this initial on-site assessment as soon as possible. Ongoing assessment will be made by the Bureau of Radiological Health in cooperation with the Dominion Virginia Power Health Physics, based on on-site instrumentation, meteorological conditions, and off-site radiation monitoring reports provided by the local and State field monitoring teams.

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 Department of Health's Bureau of Radiological Health (BRH) has developed an Initial Environmental Sampling Plan covering the entire Ingestion Pathway EPZ for the North Anna Power Station and the Surry Power Station. The initial monitoring points located within King William County where State agencies may take environmental samples are contained in Attachment 3. If necessary, BRH 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. Attachment 3 also identifies categories of various commodities, activities or establishments where samples may be collected. Analysis of samples will be conducted by the Division of Consolidated Laboratory Services or at the BRH mobile laboratory. Results from the sample analyses will be used

to determine protective actions.

E. EXPOSURE LIMITS

1. GENERAL PUBLIC – EMERGENCY PHASE

The State will normally recommend evacuation of areas directly impacted by the incident. In the case of special populations (e.g. those who are not readily mobile) sheltering may be the preferred protective action.

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 (groundshine) 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 exceed 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.

3. EMERGENCY WORKERS

The State has also developed reporting, turn-back, and lifesaving levels for

emergency workers, also based on EPA's guidelines. Since a dosimeter does not measure the entire dose (TEDE), exposure limits are divided by an exposure control ratio to determine the reporting, turn-back and life-saving levels used by emergency workers when reading their dosimeters. The exposure control ratio is used to compensate for the radiation dose that is not measured by a self-reading dosimeter (SRD). These ratio calculations are performed at the LEOF by BRH and are relayed to local Radiological Officers within the plume exposure pathway. This ratio is initially set at 3 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.

Following is a chart outlining these exposure levels:

EMERGENCY WORKER EXPOSURE LIMITS*
(using initial ratio of 3)

Activity	Dose Limit (rem)		
	SRD Reading	TEDE (SRD x ratio)	CDE (thyroid)
Reporting	3	9	
Turnback	5	15	
Voluntary Lifesaving	>8	>25	>250
Recommended Threshold for Ingestion of KI			≥5*

Minors and the unborn are limited to one tenth of these values. *Changed September 2002

F. PROTECTIVE ACTIONS

On-site protective actions within the NAPS and SPS site boundary are the responsibility of Dominion Virginia Power.

Off-site protective actions will be based, in part, on recommendations from Dominion Virginia Power. Protective actions will be substantiated, when possible, by accident assessment performed by the State Department of Health. However, if Dominion 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.

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 State Health Department, in cooperation with the Department of Agriculture and Consumer Services, Department of Environmental Quality (Water Programs), Department of Game and Inland Fisheries, and the Virginia Cooperative Extension Service.

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

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.

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).

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.

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 EAC so that they can be monitored for possible contamination. If contamination is found on them the staff at the EAC will decontaminate them. Personal belongings or vehicles will be decontaminated as time permits.

5. USE OF RADIOPROTECTIVE DRUGS FOR EMERGENCY WORKERS

Potassium iodide, a radioprotective drug, may 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 a concern beyond the plume (10-mile) EPZ.

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.

7. PASTURING, FEED AND WATER CONTROL FOR FARM ANIMALS

Farmers could be instructed to move farm animals into a shelter and to give them feed 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. FOOD PRODUCTS, WATER, AND MILK CONTROL

Protective actions could include restricting the intake 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.

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; production of cheese
- Condemning of milk and food
- Closing of the intakes for contaminated water supply

G. RECOVERY, RELOCATION AND REENTRY

The Recovery, Relocation and Reentry phases will begin when the utility or facility operator terminates the emergency or when events at the site have been down-graded 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.

H. 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.

IX. DIRECTION AND CONTROL

A. COORDINATION OF EMERGENCY OPERATIONS

1. Direction and control of radiological emergency response operations in the County is the responsibility of the County's Director of Emergency Management. Extension Agent activities to include damage assessment functions and local public information news releases will be coordinated through the County Office of Emergency Management. State and Federal agency

assistance will be requested through the Virginia EOC at (804) 674-2400, or toll-free (800) 468-8892.

2. The County's Emergency Communications Center (Sheriff's Department) 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.
3. County departments tasked in Attachment 4 and department/agency heads identified in Appendix D will provide support to the overall emergency response as directed or requested by the Office of Emergency Management.

B. COMMUNICATIONS

Commercial telephone will be the primary means of communications. Other best available means will be utilized as necessary. In the event communications assistance is needed, the County may make requests for supplemental emergency communications or restoration of existing service to the Virginia EOC Communications Officer at the VEOC.

C. EMERGENCY RESPONSE FACILITIES

The County will establish and maintain an adequate facility (may be local EOC) for direction and coordination of response efforts within the ingestion exposure pathway.

D. PUBLIC INFORMATION

1. 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.
2. King William County 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 the County to implement the County's Public Information Operating Procedures during a radiological emergency.

X. RESPONSIBILITIES

Responsibilities assigned to the various departments of King William County in support of radiological emergency response operations are outlined in Section VII of this Plan. County 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. King William County will participate in ingestion exposure pathway exercises for SPS at a level consistent with the preparedness and response goals and objectives of the County, and in coordination with the VDEM and Dominion Virginia Power. VDEM will provide planning and other technical assistance, as requested.

XI. EXECUTION

This Plan is effective for execution upon notification of a radiological emergency within the County and for training upon receipt. The Coordinator of Emergency Management will maintain, review, and update this Plan annually. Responsible County 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.

XII. TRAINING, DRILLS, AND EXERCISES**A. TRAINING**

King William County, 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 that would be involved in a radiological emergency response.

B. EXERCISES

King William County will participate in ingestion exercises as set forth by Dominion Virginia Power, the Commonwealth of Virginia, and the Federal Emergency Management Agency. Ingestion pathway exercises are held in the State once every six years, alternating between the North Anna and Surry Power Stations.

Any findings, areas recommended for corrective action, or improvement by Federal Evaluators or other observers will be considered and corrected by appropriate training, plan update, and/or demonstration in the next scheduled exercise.

XIII. ATTACHMENTS

1. North Anna Power Station (NAPS) Ingestion Pathway Emergency Planning Zone
2. Initial Environmental Sampling Points Within the NAPS Ingestion Pathway EPZ
3. Surry Power Station (SPS) Plume Emergency Planning Zone
4. Surry Power Station Ingestion Pathway Emergency Planning Zone
5. Initial Environmental Sampling Points Within the SPS Ingestion Pathway EPZ
6. Summary of Primary and Support Responsibilities
7. Report of Emergency Form – Ingestion Exposure Pathway

XIV. APPENDIXES

- A. Intermediate and Recovery Phase Actions/Considerations
- B. Public Information Procedures

- C. Decontamination, Re-Entry, and Return
- D. Telephone Directory

**NORTH ANNA POWER STATION
INGESTION PATHWAY EMERGENCY PLANNING ZONE**

JURISDICTIONS WITHIN THE 50-MILE EPZ

	<i>Counties</i>	<i>Cities</i>
Virginia	1. Albemarle 2. Amelia 3. Culpeper 4. Caroline* 5. Chesterfield+ 6. Culpeper 7. Cumberland 8. Essex+ 9. Fauquier 10. Fluvanna 11. Goochland 12. Greene 13. Hanover*+ 14. Henrico+ 15. King George@ 16. King & Queen+@ 17. King William+ 18. Louisa* 19. Madison 20. New Kent 21. Orange* 22. Page 23. Powhatan 24. Prince William 25. Rappahannock 26. Richmond+@ 27. Rockingham 28. Spotsylvania* 29. Stafford 30. Westmoreland@	1. Charlottesville 2. Fredericksburg 3. Richmond +
Maryland	1. Charles	

* Within 10 miles of NAPS

+ Also within 50 miles of SPS

@ Within 50 miles of the Calvert Cliffs Nuclear Power Plant, Lusby, Maryland

INITIAL ENVIRONMENTAL SAMPLING POINTS
NORTH ANNA POWER STATION
 INGESTION PATHWAY EPZ

King William County

The Department of Health's Bureau of Radiological Health (BRH) has developed an initial sampling plan covering the entire ingestion exposure pathway EPZ. The plan prescribes the sample media or type and size by weight or volume for the initial environmental sample. Depending on the analysis and finding of the initial sample and the commodities grown or produced in the vicinity where the initial sample was taken, the VDH may request a sampling of a specified commodity from the particular location for more detailed analysis. This second sample along with other considerations will provide the basis on which to make Protective Action Recommendations (PAR's).

The initial monitoring points located within the King William County where State agencies may take environmental samples are as follows:

Sector and Zone	Location
SF-35	Intersection of Route 628 and 608 (easternmost)
SF-40	Intersection of Route 607 and 608 at Upshaw

S = Sector

F = Alpha Sector

40 = Zone (35-40 miles from site)

Additional samples may be drawn from one or more of the following commodities or operations:

DAIRY OPERATIONS—Cow, goat, Sheep

LIVESTOCK OPERATIONS

POULTRY OPERATIONS

CROPS: Corn, Soybeans, Wheat, Other (above ground, below ground)

GROWERS: Vegetable—Spinach, Cabbage, Broccoli, Asparagus, Other (above ground, below ground)

GROWERS: Fruits—Strawberries, Grapes, Apples, Other (above ground, below ground)

APIARIES (Bee Colonies)

FISH AND SHELLFISH

FEED STORES

FOOD PROCESSORS

FOOD STORES

RESTAURANTS

WATER SUPPLY INTAKE POINTS

#

**SURRY POWER STATION
PLUME EMERGENCY PLANNING ZONE**

JURISDICTIONS WITHIN THE 10-MILE EPZ
and
HOST AREA JURISDICTIONS

Risk Area Jurisdictions

- 1. ISLE OF WIGHT COUNTY**
- 2. JAMES CITY COUNTY**
- 3. SURRY COUNTY**
- 4. YORK COUNTY**

- 5. CITY OF NEWPORT NEWS**
- 6. CITY OF WILLIAMSBURG**

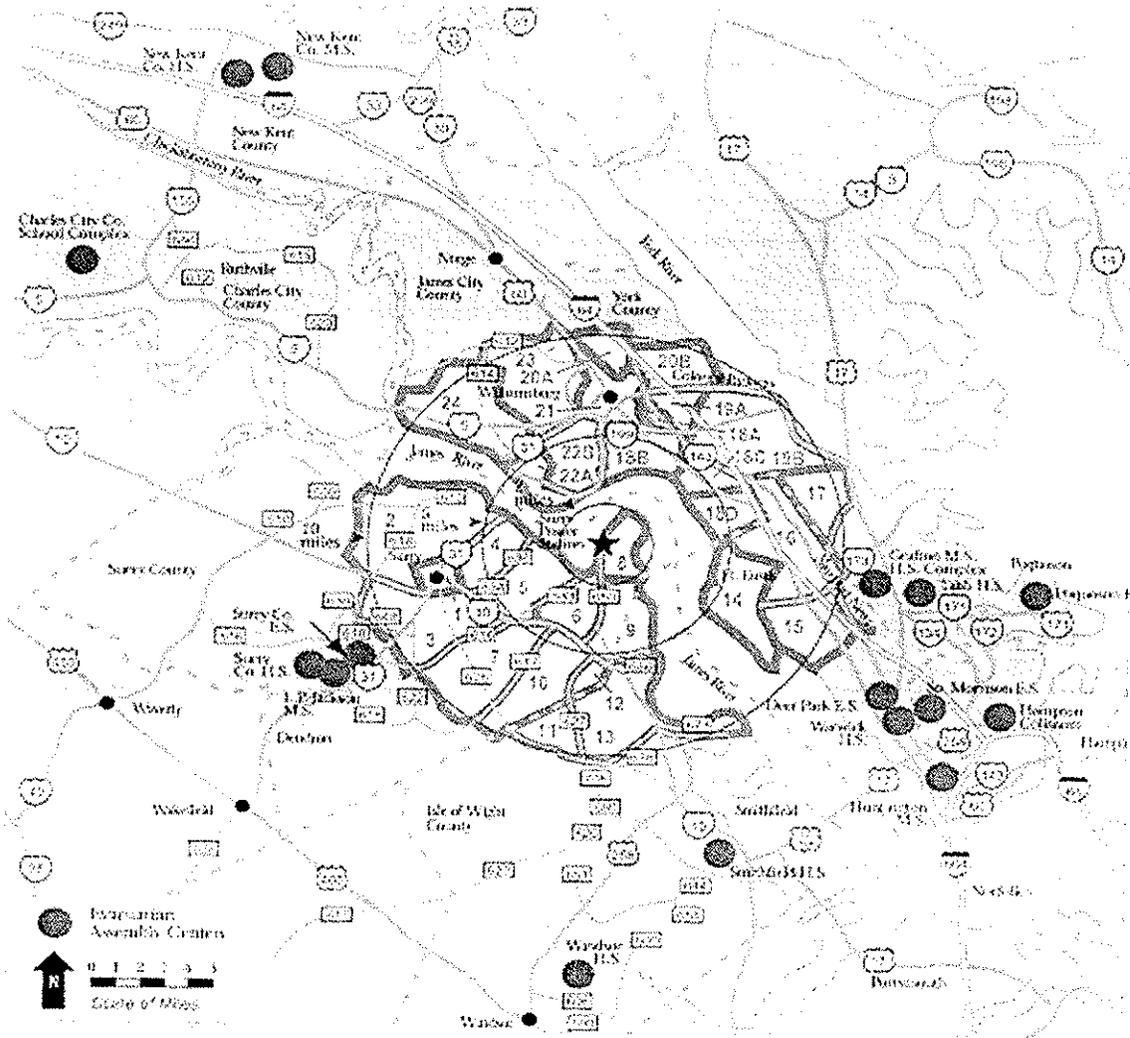
Host Area Jurisdictions

- 1. CHARLES CITY COUNTY**
- 2. NEW KENT COUNTY**

- 3. CITY OF HAMPTON**
- 4. CITY OF POQUOSON**

SURRY POWER STATION PLUME EMERGENCY PLANNING ZONE

MAP OF 10-MILE EPZ



SURRY POWER STATION
INGESTION PATHWAY EMERGENCY PLANNING ZONE

JURISDICTIONS WITHIN THE 50-MILE EPZ

	<i>Counties</i>	<i>Cities</i>
Virginia	1. Accomack@	1. Chesapeake
	2. Charles City	2. Colonial Heights
	3. Chesterfield+	3. Franklin
	4. Dinwiddie	4. Hampton
	5. Essex+@	5. Hopewell
	6. Gloucester	6. Newport News*
	7. Greensville	7. Norfolk
	8. Hanover+	8. Petersburg
	9. Henrico+	9. Poquoson
	10. Isle of Wight*	10. Portsmouth
	11. James City*	11. Richmond+
	12. King and Queen+@	12. Suffolk
	13. King William+	13. Virginia Beach
	14. Lancaster@	14. Williamsburg*
	15. Mathews	
	16. Middlesex@	
	17. New Kent+	
	18. Northampton	
	19. Northumberland@	
	20. Prince George	
	21. Richmond+@	
	22. Southampton	
	23. Surry*	
	24. Sussex	
	25. York*	
North Carolina	1. Camden	
	2. Currituck	
	3. Gates	
	4. Hertford	
	5. Northampton	
	6. Pasquotank	

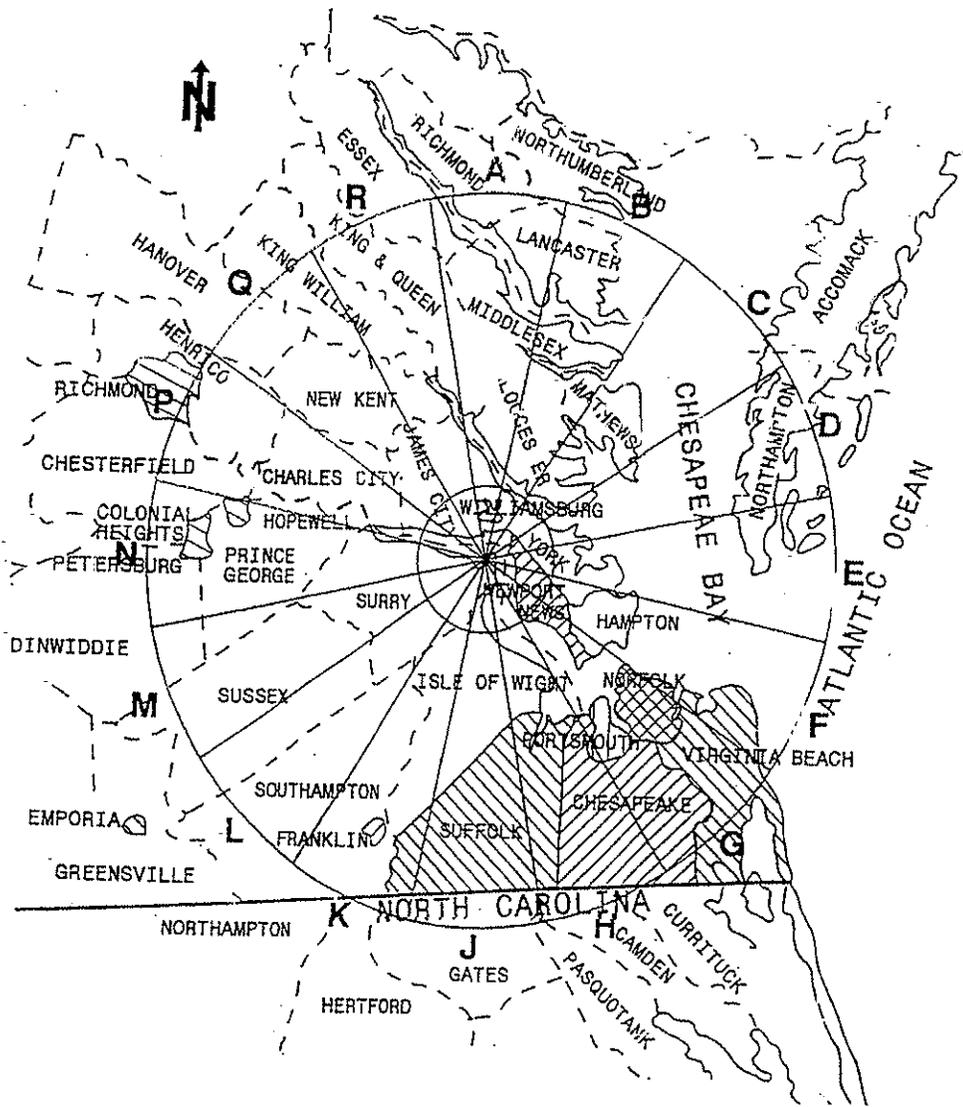
* Within 10 miles of SPS

+ Also within 50 miles of NAPS

@ Within 50 miles of the Calvert Cliffs Nuclear Power Plant, Lusby, Maryland

**SURRY POWER STATION
INGESTION PATHWAY EMERGENCY PLANNING ZONE**

MAP OF 50-MILE EPZ



**INITIAL ENVIRONMENTAL SAMPLING POINTS
SURRY POWER STATION
INGESTION PATHWAY EPZ**

King William County

The Virginia Department of Health's Bureau of Radiological Health (BRH) has developed an initial sampling plan covering the entire ingestion exposure pathway EPZ. The plan prescribes the sample media or type and size by weight or volume for the initial environmental sample. Depending on the analysis and finding of the initial sample and the commodities grown or produced in the vicinity where the initial sample was taken, the VDH may request a sampling of a specified commodity from the particular location for more detailed analysis. This second sample along with other considerations will provide the basis on which to make Protective Action Recommendations (PAR's).

The initial monitoring points located within the King William County where State agencies may take environmental samples are as follows:

Sector and Zone	Location
SR-30	Southern dead end of Route 634 past Sweet Hall
SR-35	Intersection of Route 626 and Route 30 at Rose Garden

S = Sector; R= Alpha Sector; 30 = Zone (25-30 miles from site)

Additional samples may be drawn from one or more of the following commodities or operations:

DAIRY OPERATIONS—Cow, goat, Sheep
LIVESTOCK OPERATIONS
POULTRY OPERATIONS
CROPS: Corn, Soybeans, Wheat
GROWERS: Vegetable—Spinach, Cabbage, Broccoli, Asparagus
GROWERS: Fruits—Strawberries, Grapes, Apples
APIARIES (Bee Colonies)
FEED STORES
FOOD PROCESSORS
FOOD STORES
RESTAURANTS
WATER SUPPLY INTAKE POINTS

#

SUMMARY OF PRIMARY AND SUPPORT RESPONSIBILITIES

Department or Agency	1. Emergency Management Operations	2. Protective Action Decision-Making	3. Protective Action Implementation	4. Field Measurement and Analysis	5. Emergency Notification and Public Information
Office of Emergency Management	P	S	S	S	S
Radiological Officer	S	S	P	S	S
Public Information Officer	S	S	S	S	P
Sheriff's Department	S	S	S	S	P
Public Works	S	S	S	S	S
Fire & Rescue	S	S	S	S	S
Hazardous Materials	S	S	S	S	S
Communications Center	S	S	S	S	S
Planning Department	S	S	S	S	S
Health Department	S	S	P	P	S
Extension Agent	S	S	P	S	S
Public Utilities	S	S	S	S	S
Damage Assessment	S	S	S	S	S
County Administrator/Finance	S	S	S	S	S

Evaluation Area/Sub-Element/Criterion

1. Emergency Operations Management
 - a. Mobilization
 - b. Facilities
 - c. Direction and Control
 - d. Communications Equipment
 - e. Equipment and Supplies to Support Operations

2. Protective Action Decision-Making
 - a. Emergency Worker Exposure Control (including Contamination Control)
 - b. Radiological Assessment and Decision-Making for the Ingestions Exposure Pathway
 - c. Radiological Assessment and Decision-Making Concerning Relocation, Re-Entry and Return

P = Primary Responsibility
S = Supporting Capacity

3. Protective Action Implementation
 - a. Implementation of Emergency Worker Exposure Control (including Handling and Disposal of Contaminated Vegetation, etc.)
 - b. Implementation of Ingestion Pathway Decisions
 - (1) Information regarding water, food supplies, milk, and agricultural production is available and appropriately utilized
 - (2) Appropriate measures, strategies, and pre-printed instructional material are developed and available for implementing PAD's
 - (a) *For Contaminated Milk, Contaminated Water*
 - (b) *For Contaminated Food Supplies and Agricultural Products*
4. Field Measurement and Analysis
 - a. Field Team Sample Collection
 - b. Sample Transfer to Laboratory
5. Emergency Notification and Public Information
 - a. Information presented in media briefings and media releases are consistent with Protective Action Decisions
 - b. Timely and accurate information is provided to media outlets and to the public
 - c. Copies of pertinent emergency information and media information kits are available for dissemination to the media
 - d. Public inquiry hotline is established and staffed to provide or obtain accurate information
 - e. Public information media outlets are monitored to identify inaccurate information and to correct false or misleading reports

**Report of Emergency Form – INGESTION EXPOSURE PATHWAY
FEED & GRAINS PROTECTIVE MEASURES**

Message No.: _____

For Use By Commonwealth of Virginia

Message:

"This is the Virginia Emergency Operations Center (VEOC)"

This message is for all local governments within the 50-mile Ingestion Exposure Pathway EPZ of

- NORTH ANNA POWER STATION (NAPS)
- SURRY POWER STATION (SPS)
- CALVERT CLIFFS NUCLEAR POWER PLANT (CCNPP)

The emergency message is as follows:

Item 1 - Emergency Class:

- Notification of Unusual Event
- Site Area Emergency
- Emergency terminated

- Alert
- General Emergency

Declared at _____ on ____ / ____ / ____
(24 Hr. Time) (Date)

Item 2 - Prognosis of Situation:

- Improving.
- Worsening.
- Stable.
- Other:

Item 3 - Recommended Offsite Protective Actions Within INGESTION EXPOSURE PATHWAY Are:

- None.
- Detailed surveying of the Ingestion Exposure Planning Zone indicates the need to take the following actions:

(Check the applicable recommendation(s))

- Grains grown in the following areas should be milled and polished before consumed:

Areas:

- Grains grown in the following areas should be condemned:

Areas:

Item 4 - This message authorized by _____
Name

Transmitted from the Virginia EOC _____ / _____
24 Hr. Time Date

For Local Government Dissemination:

Message Received By: _____ / _____ / _____
Local Communicator Date 24 Hr. Time

Forwarded To: _____ / _____ / _____
Emergency Services Coordinator Date 24 Hr. Time

Appendix A
INTERMEDIATE AND RECOVERY PHASE ACTIONS / CONSIDERATIONS

1. Emergency Communications Center (Sheriff's Department) receives notification of the radiological incident from the Virginia EOC, via VCIN or commercial telephone.
2. Communications Center notifies the Director of Emergency Management or his designee of the incident and provides briefing on the situation.
3. Other county representatives identified in Appendix D are notified of the emergency. Staffing of the emergency operations center or other command center is at the discretion of the Director of Emergency Management or his designee.
4. Ensure the County 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.
5. If notified that ingestion pathway protective actions are necessary (e.g. placing cows on stored feed), ensure coordination with and between the State PAO and the local PIO on disseminating appropriate information.
6. Request the Virginia EOC provide a radiological deposition footprint or, if one is not available, other radiological deposition information.
7. If radiological information indicates that King William County could be affected by the incident, notify and direct the local extension agent and other county representatives to 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.
8. Consider appropriate actions and communications limiting hunting and fishing activities. Consider whether other outdoor work or sporting activities should be curtailed or limited.
9. Coordinate with VDEM in securing printed 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.
10. Be alert to information regarding State environmental sampling teams taking samples within the County. See Attachment 3 of the Plan for initial sampling points at which State field teams may be taking environmental samples.
11. Confer with VDEM and BRH to determine if residents in any portion of the county should take any protective actions due to excessive radiological depositions. See Plan section VIII.F.9 for information on protective actions and dose reduction techniques.
12. Consolidate detailed records of costs related to the emergency response. Begin claim actions once cost records are consolidated.
13. If no protective actions are necessary continue monitoring the situation until the event is stable or the emergency terminated.
14. If conditions permit close out the command center.

Appendix B

PUBLIC INFORMATION

The county 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, county specific information will be provided at the county media center to reporters from radio and television stations, and newspaper outlets which 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 VDEM Public Affairs Officer (PAO) at the Joint Information Center (JIC) or other location established by VDEM for this purpose.

1. 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:

- a. Accept the conditions of a disaster or an emergency that are imposed upon them.
- b. Understand that the local government has plans for disaster and emergency aid for the population of the county.
- c. Understand individual responsibilities, actions and duties when the emergency plan is in effect.
- d. 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.

2. TASKS

- a. The Director of Emergency Management or his designee will initially release all information concerning a disaster.
- b. Upon the direction of the Director, this function may pass to the Coordinator of Emergency Management who will:
 - (1) Receive, review, and approve all news releases prior to their release to the public.
 - (2) Coordinate the release of all disaster-related information with other departments or agency heads.

The responsibilities of the Public Information Officer (PIO) during a radiological emergency includes:

1. 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 VDEM PAO at the JIC or the Virginia EOC.
2. 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:

- a. News Releases - Information can be distributed through news releases. The Director of Emergency Management or his designee should approve all news releases prior to public dissemination. See Attachment 1 for sample news releases.

Once distributed, copies of news releases issued at the local level should be transmitted via fax to the VDEM PAO at the Joint Information Center (JIC). The JIC is located at:

Innsbrook Technical Center
5000 Dominion Boulevard
Glen Allen, Virginia 23060
(804) 273-3790 (fax)
(804) 273-3842(voice)

- b. 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 King William County is contained in Attachment 2.
3. 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:
 - a. Plant conditions
 - b. Protective action decisions for ingestion
 - c. Environmental sampling and assessment efforts
 - d. Rumor control telephone number(s)
 - e. Corrections to rumors/misinformation
 4. Provide rumor control. This includes answering inquires 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.
 5. Maintain liaison with media resources.

ATTACHMENTS

1. Sample News Releases
2. EAS Operational Area for King William County

Attachment 1

SAMPLES NEWS RELEASES

- #1 This is an important bulletin from the Coordinator of Emergency Management, Office of Emergency Management, regarding the incident that occurred at the _____¹ on _____². 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 King William County until notified to resume operations. Dairymen in King William County 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 This is an important bulletin from the Coordinator of Emergency Management, Office of Emergency Management, regarding the incident that occurred at the _____¹ Power Station _____². The State Health Department has collected and analyzed environmental samples from areas in King William County and has determined that no area within King William County was affected by the incident.

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

¹ Insert the Surry Power Station or other site where incident occurred.

² Insert day and time of occurrence.

King William County
EMERGENCY ALERT SYSTEM (EAS) OPERATIONAL AREA

The Tidewater Extended Local Area

WGH Radio

Voice: (757) 497-1310

Fax: (757) 547-0160

LP-1 WGH-FM 97.3 mHz

LP-2 WAFX-FM 106.9 mHz

WGH-FM 97.3 mHz is STATE RELAY

LP-1/LP-2 ALSO MONITOR WRVA 1140 kHz (SR) and NOAA WX

WRVA Radio

WRVA-AM 1140 kHz is STATE PRIMARY

Voice: (804) 780-3400; Fax: (804) 780-3427

TV	WVEC	Channel 13	Norfolk
	WTKR	Channel 3	Norfolk
	WHRO	Channel 15	Norfolk
	WTVZ	Channel 33	Norfolk
	WVBT	Channel 43	Norfolk/Virginia Beach
	WAVY	Channel 10	Portsmouth
	WGNT	Channel 27	Portsmouth
	WTVR	Channel 6	Richmond
	WWBT	Channel 12	Richmond
	WRIC	Channel 8	Richmond
	RADIO	WGH	1310 AM
WKGM		940 AM	Smithfield
WSRV		92.3 FM	Williamsburg
WWBR		107.9 FM	Williamsburg
WRVA		1140 AM	Richmond
WRNL		910 AM	Richmond
WTVR		98.1 FM	Richmond
WBTJ		106.5 FM	Richmond
WTAR		850 AM	Norfolk
WCMS		100.5 FM	Hampton
WGH		97.3 FM	Hampton
WXEZ		94.1 FM	Hampton
WXGM		99.1 FM	Gloucester
WXGM		1420 AM	Gloucester
WCMS		1050 AM	Hampton
WVKL		95.7 FM	Norfolk
WNIS		790 AM	Norfolk
WJCD		105.3 FM	Norfolk
WKWI		101.7 FM	Kilmarnock
WWBR		107.9 FM	Williamsburg
WYCS		91.5 FM	Yorktown
WEVA		860 AM	Emporia
WNDJ	104.9 FM	Urbanna	
WNNT	100.9 FM	Warsaw	

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 states of Maryland and 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.

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. The EAS system may also be used by other Federal, state, and local authorities to disseminate 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.

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.

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.

Appendix C

DECONTAMINATION, RE-ENTRY, AND RETURN

I. MISSION

- A. To provide for the decontamination of people, vehicles, livestock, structures, crops, soil, and any other surfaces that are contaminated with radioactive material.
- B. To provide for re-entry (temporary access) and return (reoccupation) into affected areas evacuated due to a radiological emergency.
- C. To develop Recovery, Re-entry and Return Plan to address Missions A or B above.

II. CONCEPT OF OPERATIONS AND PROCEDURES

A. Contamination Levels

An individual or surface will be considered contaminated if a survey reading indicates a level in excess of 0.1 mR/hr above background.

B. Decontamination Activities

- 1. Decontamination activities will be performed by or under the guidance of Virginia Department of Health-Bureau of Radiological Health (VDH-BRH) if this action is warranted in any jurisdiction within the ingestion pathway beyond the Plume (10-mile) EPZ.

C. Structures and Vehicles

- 1. 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. Radiological Emergency Response Plans of each jurisdiction within the 10-mile EPZ will have additional information and guidance on this subject.
- 2. 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.

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

- 1. Crops and soil that may have become contaminated with radioactive materials will be monitored for contamination by the Virginia Department of Health and other appropriate agencies.
- 2. The Division of Consolidated Laboratory Services and the BRH mobile laboratory will analyze crop samples, as necessary.

3. For small areas, decontamination may be accomplished by digging up the affected area and disposed as determined by Virginia Department of Health.
4. For a large area, decontamination may be accomplished by a variety of methods including plowing, soaking of soils, or some other acceptable means.
5. VDH will monitor crops grown on land that has been decontaminated to assure that they are safe for consumption.

E. Livestock

1. Livestock in the affected areas will be monitored for contamination by VDH based on accident assessment calculations and the results of initial samplings.
2. Decontamination will be conducted under the supervision of VDH.

F. Recovery Planning

1. Recovery planning will be initiated after conditions on-site, i.e., at the respective nuclear power station, have stabilized and immediate public health and safety and property protective actions accomplished. Off-site contamination levels will be characterized and the extent of damage or long-term effects will be determined based on extensive analyses by Federal and State agencies. Recovery planning will focus on the following issues:
 - a. Assistance and resources needed to return impacted areas to normalcy.
 - b. Conditions for temporary re-entry and permanent return into restricted areas.
 - c. Appropriate actions relative to contaminated foods, land and property.
 - d. Continued radiological dose assessment, dose commitment, integrated dose, and health effects to the public--both short- and long-term.
 - e. Decontamination of selected foods, vehicles, buildings, equipment and other properties.
 - f. Support to persons and property owners in the affected areas for financial restitution.
 - g. Plans and procedures for (1) disposal of contaminated soils and other properties and (2) conditions by which restrictions on food consumption, marketing, and other economic and commercial activities may be lifted.
 - h. Coordination with counties and adjacent states affected by radioactive contaminants, the exposure time periods, activity levels, and significance of radiation exposures.
 - i. Redirection of mail deliveries to evacuees and relocated populations.
 - j. Development of an economic recovery plan.

- k. Financial impact of restrictions placed on the sale of commercial foodstuffs and the curtailment of wholesale and retail marketing in affected communities.
- l. Continue to monitor and control the spread of radioactive contamination of both humans and animals.
- m. Ongoing public information outreach effort.

G. Re-Entry and Return

- 1. The decision to allow re-entry and return into an evacuated area rests with the Director of Emergency Management of the local jurisdiction affected after consultation with VDEM.
- 2. Return will normally be recommended by VDH only when the projected dose is less than 2 Rem 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 re-suspended materials. Additionally, doses in any single year after the first should not exceed 0.5 Rem and the dose over 50 years excluding the first and second years, not exceed 5 Rem.
- 3. 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 and other procedures for control of occupationally exposed workers. Ongoing doses received by these individuals from living in a contaminated area outside the restricted zone need not be included as part of this dose limitation applicable to workers. In addition, dose received previously from the plume and associated ground-shine, during the early phase of the nuclear incident, need not be considered.
 - a. Individuals reentering a restricted area will be registered, issued a permit and given a briefing on hazards. See Tab A for briefing outline. See Tab B for Re-entry Log and Tab C for Re-entry Pass.
 - b. Individuals permitted temporary re-entry will be issued dosimetry so that their exposure can be recorded.
 - c. Escorts trained and provided by the Department of Health-BRH or the County may accompany individuals who are permitted to temporarily enter restricted areas to perform critical operations.
 - d. All persons entering and exiting restricted areas will be monitored and exposure reading recorded on the Emergency Worker Form REC-1. See Tab D.

III. LOGISTICS

A. Decontamination Equipment

1. 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.
2. 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.

B. Decontamination Assistance

Contact VDEM or VDH for decontamination assistance.

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

Briefings will be conducted at designated public facilities.

I. NATURE OF EMERGENCY

- A. Area Evacuated or Restricted
- B. Source and Nature of Release

II. RADIOLOGICAL RISKS

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

III. EXPOSURE REDUCTION

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

IV. RADIATION MONITORING

- A. Dosimetry Use. TLD devices may not need to be issued.
- B. Survey monitoring at Facility - Decontamination if necessary.

V. REGISTRATION AND RE-ENTRY PERMIT PROCESS

*Conducted by Local Government Radiological Officer with advice by or in conjunction with State BRH Specialists.

Tab C

RE-ENTRY PASS	
PASS #: _____	
<p>-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:</p> <ol style="list-style-type: none">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. <p>-Return to the facility that issued you this pass before the expiration time.</p> <p><u>EXPIRATION</u></p> <p>DATE: _____ FACILITY: _____</p> <p>TIME: _____</p>	

Appendix D
TELEPHONE DIRECTORY

NOTE: The King William County Office of Emergency Management may be contacted through the Sheriff's Department Central Communications Center at the following telephone number:

804-769-0999 - 24-Hour
Facsimile: 804-769-0334 - 24 Hour
COUNTY OF KING WILLIAM COMMAND AND CONTROL CENTER
Courthouse Complex
Emergency Operations Center (EOC)
Physical Address
180 Horse Landing Road
Alternate EOC
Physical Address:
18548 King William Road

King William County has a central dispatching system located in the Sheriff's Department. The Emergency Communications Dispatch Center may be reached directly by dialing (804) 769-0999.

All telephone numbers are in the 804 telephone calling area unless otherwise noted.

COUNTY DEPARTMENT	NAME	HOME	WORK
Director of Emergency Management	Daniel L. Wright	769-3838	786-1405
Coordinator of Emergency Management	Lewis E. Heath, Jr.	779-2711	769-4961
Deputy Coordinator of Emergency Management	Michelle L. Hunt	843-2785	769-4966
Public Information Officer	Katy Lloyd	423-1091	769-4985
Sheriff's Department	J. S. "Jeff" Walton	769-1038	769-0999
Fire Administration	Lewis E. Heath, Jr.	779-2711	769-4961
Hazardous Materials Coordinator	Lewis E. Heath, Jr.	779-2711	769-4961
Deputy Hazardous Materials Coordinator	Forrist Jewel	769-4381	226-2490
Communications Center	Trudy Tupponce	769-2508	769-0999
Health Department	Claire Evans	443-0134	769-4988
Extension Service	Gwen Roy	769-1077	769-4955
County Administrator	Frank Pleva	843-3596	769-4926
County EOC			769-0999

Virginia Department of Emergency Management
EMERGENCY OPERATIONS CENTER 674-2400 24-hr
Emergency Operations Center – Toll Free Line 800-468-8892
Emergency Operations Center - Facsimile (FAX) 674-2419 24-hr
VEOC E-mail veoc@vdem.state.va.us
VEOC On-Line EOC www.vdem.state.va.us
VDEM Public Affairs Office 897-6510

