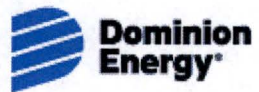


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**PROPOSED CONSOLIDATED  
EMERGENCY OPERATIONS FACILITY**

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## **Attachment 1**

### **Discussion of Proposed Change**



## 1.0 SUMMARY DESCRIPTION

This evaluation supports a request to establish a consolidated emergency operations facility (EOF) for North Anna Power Station (NAPS) Unit Nos. 1 and 2, and Surry Power Station (SPS) Unit Nos. 1 and 2. The consolidated EOF will hereinafter be referred to as the Corporate Emergency Response Center (CERC). The proposed CERC will replace the existing NAPS and SPS local EOFs, and their common back-up central EOF and headquarters support organization. The proposed CERC is approximately 30 miles from the NAPS Technical Support Center (TSC) and approximately 59 miles from the SPS TSC. A license amendment is required to request Commission approval for locating an EOF greater than 25 miles from a nuclear power reactor site per 10 CFR 50, Appendix E, Section IV.E.8.b.

### 1.1 HISTORY

The SPS Units 1 & 2 Safety Evaluation Report (SER) dated February 23, 1972, and the NAPS Units 1 & 2 SER (NUREG-0053) dated June 4, 1976, were issued before requirements for EOFs were developed. NUREG-0053, Supplement 11 (August 1980) for NAPS Unit 2 described the [interim] EOF as being in the North Anna Visitors Center (within 1 mile of the station) and its alternate at the Louisa County Courthouse complex (approximately 9 miles from the site). Pursuant to the 1980 EP-rule change, the NAPS and SPS emergency plans were upgraded with provisions for performing EOF functions, with the CERP containing additional information.

Generic Letter 80-73, "Functional Criteria for Emergency Response Facilities," NUREG-0696, dated August 1, 1980, provided draft EOF criteria for comment. On October 31, 1980, Generic Letter 80-90, "Post-TMI [Three Mile Island] Requirements," NUREG-0737, was issued and indicated that additional guidance on the emergency response facilities (Section III.A.1.2) would be forwarded separately at a later date.

A draft-NUREG 0696, "Functional Criteria for Emergency Response Facilities," implementation plan for NAPS and SPS was submitted on December 18, 1980, indicating that details on EOFs would be provided in a future revision to the plan. Generic Letter 81-10, "Post-TMI Requirements for the Emergency Operations Facility," dated February 18, 1981, provided additional information (NUREG 0696 Revision 0). Revision 1 to the NUREG-0696 Implementation Plan was forwarded to the Nuclear Regulatory Commission (NRC) on June 1, 1981. The NRC's response dated November 23, 1981 indicated additional information was needed. Additional guidance was provided by NRC Region II letters dated January 29 and February 12, 1982. A proposed EOF plan was provided by letter dated April 8, 1982, and supplemented by letter dated December 6, 1982.

NRC conducted appraisals of the NAPS and SPS emergency preparedness programs during February 16-26 and March 15-26, 1982, respectively (reference NRC Inspection Reports 50-338, -339/82-05 and 50-280, -281/82-05, respectively). Items identified during the appraisals were incorporated into the NAPS and SPS emergency plans and



their implementing procedure sets. The post-EP appraisal NAPS emergency plan dated July 22, 1982 (Revision 0) referred to the interim [EOF] facility and described engineering conceptual studies for an EOF in the General Office in Richmond and a separate EOF on the station property. The post-EP Appraisal SPS Emergency Plan dated July 29, 1982 (revisions earlier than 33 were not numbered, but this is considered Revision 0) referred to an interim [EOF] facility in the Surry Simulator Building.

Generic Letter 82-33, "Supplement 1 to NUREG-0737 - Emergency Response Capability," dated December 17, 1982, provided clarification of TMI action plan requirements for EOFs. In reply to Generic Letter 82-33, the plan for a near-site EOF and back-up central EOF were provided by letters dated April 14 and May 6, 1983. The location of the primary NAPS EOF was identified as onsite 0.25 miles from the reactor containment and the primary EOF for the Surry site was identified as onsite 0.2 miles from containment. The common back-up EOF location was identified as 43 miles from NAPS and 51 miles from SPS at the Headquarters Emergency Center in downtown Richmond, Virginia. Completion of NUREG-0737, Item III.A.2.1, Emergency Preparedness, Upgrade Emergency Plans to Appendix E, 10 CFR 50, was documented in NRC letters dated May 10, 1983 for NAPS and May 13, 1983 for SPS. NRC letter dated January 13, 1984 advised that the Commission found the location of the back-up and primary EOFs for NAPS and SPS described in the referenced letters acceptable.

The SPS emergency plan dated June 28, 1984 (unnumbered, Revision 15) referred to space on the 5th Floor of Corporate Headquarters in Richmond as the location for headquarters support and the back-up EOF. The NAPS emergency plan dated September 27, 1984 (Revision 8) referred to an area on the 5th floor of One James River Plaza in downtown Richmond as the location for headquarters support and the back-up EOF. Completion of NUREG-0737, Item III.A.1.2, Emergency Preparedness, Upgrade Emergency Response Facilities, was documented for NAPS by NRC letter dated May 25, 1987 and for SPS by NRC letter dated June 12, 1987.

The common back-up EOF was relocated to the Innsbrook Technical Center (ITC) in Glen Allen, Virginia, approximately 30 miles from NAPS and 59 miles from SPS, on September 16, 1988. Letter dated September 14, 1988, Corporate Emergency Operations Facility Relocation, informed the NRC Region II Emergency Preparedness and Radiological Protection Acting Branch Chief of this modification, with copies to the NRC Document Control Desk, and NAPS and SPS NRC Resident Inspectors. The ITC is the same building that Dominion is proposing to locate the proposed CERC. The SPS emergency plan dated April 27, 1989 (unnumbered, Revision 32) and the NAPS emergency plan dated October 2, 1989 (Revision 12) identified the ITC as the location for headquarters support and the back-up EOF. The current emergency plans (NAPS Emergency Plan Revision 44 (effective February 2, 2017) and SPS Emergency Plan Revision 63 (effective March 16, 2017) continue to reference ITC as the location of the back-up EOF.

The back-up EOF, with site-specific remote mustering areas, satisfies the 10 CFR 50, Appendix E, Section IV.E.8.d requirement for an alternate facility when under threat or experiencing hostile action. A description of the alternate facility, limited to the



capabilities required by June 20, 2012, was added to the NAPS and SPS emergency plan dated December 21, 2012 (Revisions 38 and 58, respectively) and updated with capabilities required by December 23, 2014 in the current emergency plans (NAPS Emergency Plan Revision 44 (effective February 2, 2017) and SPS Emergency Plan Revision 63 (effective March 16, 2017)).

The central EOF staff has successfully demonstrated the ability to manage emergency response during several simulated response activities (e.g., SPS off-year exercise conducted November 13, 1996; NAPS off-year emergency exercise conducted November 12, 2003; SPS hostile action based drill conducted December 2, 2008; and NAPS Biennial Exercise conducted July 8, 2014).

Section 13.3 of the NAPS Updated Final Safety Analysis Report (UFSAR) and Section 12.3 of the SPS UFSAR briefly refer to "a comprehensive Corporate Emergency Response Plan (CERP) and a site specific Station Emergency Plan." The CERP provides the organizational descriptions for the EOF emergency response organization (ERO), the Joint Information Center (JIC) and for headquarters support. Corporate plan implementing procedures (CPIPs) provide detailed instructions for managing emergency response at the local EOFs and the back-up central EOF, and for headquarters support, including interface with the JIC. Select site-specific emergency plan implementing procedures (EPIPs) are used in the local EOFs and the back-up central EOF to formulate offsite protective action recommendations (PARs), prepare and transmit emergency messages to the Commonwealth of Virginia and NAPS and SPS plume exposure pathway risk jurisdictions, and assess offsite radiological consequences. These are the same EPIPs used by the NAPS and SPS Control Rooms/Health Physics Offices and TSCs when these facilities perform the associated functions. Dominion Energy Virginia proposes to incorporate applicable CERP contents into the NAPS and SPS emergency plans.

Attachment 2 provides a table indicating where this information is proposed to be relocated or where it has been determined to be duplicative to existing NAPS and SPS emergency plan content. Attachments 4 and 6 contain proposed marked-up NAPS and SPS emergency plan page changes. Attachments 5 and 7 contain proposed changed NAPS and SPS emergency plan pages. NAPS and SPS Emergency Plans and EPIP-sets, although site-specific and approved by station personnel, are prepared by Nuclear Fleet Emergency Preparedness staff. This support relationship assures that their content will remain in alignment.

## 1.2 DETAILED DESCRIPTION OF CHANGE

The proposed consolidation is expected to have the following positive effects on the emergency response capability of both stations:

- Enhanced availability for emergency response by relocating the EOF away from a reactor site that could be affected by a large scale external event, hostile action, or radioactivity release;



- Increased pool of site ERO members available for assignment to other positions in the TSC and the Operational Support Center (OSC); and
- Increased efficiency through the consolidation of EOF functions and headquarters support in a single facility.

The greater distance involved in the proposed plan should not impede implementation of EOF functions by NAPS and SPS EROs, or offsite response organizations, including the Commonwealth of Virginia Department of Emergency Management (VDEM), the Department of Health (VDH) Office of Radiological Health (ORH), or the NRC. Local governments do not send representatives to the existing local EOFs, so the distance to the proposed CERC does not impede their response. Mobilization time of VDEM and VDH responders will be improved due to relative proximity of their normal offices to the ITC. Likewise, due to the relative proximity to the Richmond International Concourse, the time it would take for the NRC Region II Incident Response Team to arrive at the consolidated EOF should be less than that needed to travel to either local EOF. Additionally, consolidation will obviate the need for VDEM, VDH and NRC to staff separate EOFs at both NAPS and SPS for simultaneous events.

Although NUREG-0696 stated that activation of the EOF was optional at the Alert emergency class and required at the higher emergency classification levels, NAPS and SPS emergency plans provide for EOF activation after an Alert or higher emergency classification is declared. The table below lists NAPS and SPS declarations that required EOF activation:

**Table 1.2-1: Declarations That Require EOF Activation**

<b>Date</b>	<b>Station(s)</b>	<b>Emergency Class</b>
July 3, 1980	North Anna	Alert
December 9, 1986	Surry	Alert
July 15, 1987	North Anna	Alert
February 25, 1989	North Anna	Alert
April 24, 1993	North Anna	Alert
October 7, 2006	Surry	Alert
August 23, 2011	North Anna	Alert

The Mineral Virginia earthquake on August 23, 2011, which precipitated declaration of an Alert at NAPS, led to declaration of a Notification of Unusual Event at SPS. The initial notification messages from the NAPS and SPS Control Rooms to the Commonwealth of Virginia Emergency Operations Center (EOC) overlapped. This precluded the Virginia EOC Duty Communications Officer from acknowledging the roll call from one of the station's communicators due to receiving notification from the other station. The proposed CERC's layout co-locates site-specific communicators so



overlapping notifications can be avoided following activation of the consolidated EOF for concurrent events at NAPS and SPS.

The NRC has approved 5 consolidated EOFs located more than 25 miles from some of the stations they support:

**Table 1.2-2: NRC Consolidated EOFs Located >25 mi. from Station**

NRC Region	Location	Utility	Stations
I	Coatesville, Pennsylvania	Exelon	Limerick Peach Bottom Three Mile Island
II	Birmingham, Alabama	Southern Nuclear	Farley Hatch Vogtle
II	Charlotte, North Carolina	Duke Energy	Brunswick Catawba Harris Lee McGuire Oconee Robinson
II	Chattanooga, Tennessee	Tennessee Valley Authority	Browns Ferry Sequoyah Watts Bar
III	Warrensville, Illinois	Exelon	Braidwood Byron Clinton Dresden LaSalle Quad-Cities

More than 70 percent of the utilities in NRC Region II have approval to use a consolidated EOF, all of these with stations located in different states. The plume exposure pathways of both NAPS and SPS are entirely within the Commonwealth of Virginia. The proximity of the proposed CERC to NAPS and SPS is within the range of distances for which consolidated EOF requests have been approved in the past.

Dominion Energy Virginia plans to conduct a proof-of-concept demonstration involving response to concurrent events requiring CERC activation with both NAPS and SPS.



The scope of the demonstration will require response to, and coordination of, response efforts for events occurring simultaneously at NAPS and SPS, specifically:

- Management of overall licensee emergency response,
- Coordination of radiological and environmental assessment,
- Determination of recommended public protective actions at NAPS and/or SPS,
- Notification of the Commonwealth of Virginia EOC, and both NAPS and SPS risk-jurisdiction 911 Centers,
- Coordination of event, plant, and response information provided to public information staff for dissemination to the media and public,
- Staffing and activation of the facility within CERC activation time-frames for an Alert or higher emergency class as defined in the proposed emergency plans for NAPS and SPS,
- Coordination of emergency response activities with Federal, State, and local agencies,
- Obtaining and displaying key plant data and radiological information for the affected unit(s) at NAPS and SPS per the drill scenario, and
- Analyzing plant technical information and providing technical briefings on event conditions and prognosis to licensee staff and offsite agency responders for the affected unit(s) at NAPS and SPS per the drill scenario.

In addition, the event at one of the two sites will affect multiple units. This proof-of-concept demonstration is scheduled for March 5, 2018 and may be observed by NRC staff. Federal Emergency Management Agency (FEMA) representatives will be afforded the opportunity to observe as well. Following approval, the CERC staff will participate in CERC activation drills, which will be conducted periodically in accordance with the NAPS and SPS emergency plans, including at least one involving response to simultaneous events at NAPS and SPS during each station's exercise cycle thereafter.

## 2.0 EVALUATION

NUREG-0696, "Functional Criteria for Emergency Response Facilities" (as updated by NSIR/DPR-ISG-01, "Emergency Planning for Nuclear Power Plants"), provides guidance for complying with 10 CFR 50, Appendix E, Section IV.E.8. The information provided in sections 2.1 through 2.9 below address this guidance to demonstrate acceptability of the proposed CERC with respect to the NAPS and SPS EOF attributes.

### 2.1 FUNCTIONS

#### *Management of overall licensee emergency response*

Operation of the proposed CERC will not alter the overall approach to emergency response at NAPS and SPS. Established protocols currently contained in the CIP-set will be relocated to the respective station's EIP-sets. NAPS and SPS EIP-sets, although site-specific and approved by station personnel, are prepared by Nuclear Fleet Emergency Preparedness staff. This support relationship assures that content of EIPs



used by the staff in the proposed CERC will be in alignment. Current and proposed CERC responsibilities for Key functions are identified in the table below:

**Table 2.1-1: Responsibilities for Key Functions**

<b>Key Function</b>	<b>Current Responsibility</b>	<b>Proposed Responsibility</b>
Approve PARs	LEOF Recovery Manager <sup>1</sup>	Site-specific CERC Technical Support Manager
Prepare emergency messages	LEOF State & Local Emergency Communicator <sup>2</sup>	Site-specific CERC State & Local Emergency Communicator
Approve emergency messages	LEOF Recovery Manager <sup>1</sup>	Site-specific CERC Technical Support Manager
Transmit emergency messages	LEOF State & Local Emergency Communicator	Site-specific CERC State & Local Emergency Communicator
Assess radiological consequences	LEOF Radiological Assessment Coordinator <sup>3</sup>	Site-specific CERC Radiological Assessment Coordinator
Review press releases for technical accuracy	LEOF Recovery Manager <sup>1</sup>	Site-specific CERC Technical Support Manager
Approve press releases	Senior headquarters support position	CERC Corporate Response Manager

The proposed CERC will be the primary facility for offsite PAR formulation; preparation and transmittal of emergency messages to the Commonwealth of Virginia EOC, and both NAPS and SPS risk-jurisdiction 911 Centers/local EOCs; and offsite radiological consequence assessment, with the TSC as back-up. Responsibility for event classification will remain in the TSC. If the proposed CERC becomes unavailable during an event, the NAPS and SPS TSCs will have the capability to determine PARs for the public, notify offsite agencies, and perform dose assessments.

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<sup>1</sup> When the back-up central EOF is activated, the senior headquarters support position assumes the CEOF Recovery Manager title and fulfills this responsibility.

<sup>2</sup> When the back-up central EOF is activated, the stand-by CEOF State & Local Emergency Communicator fulfills this responsibility.

<sup>3</sup> When the back-up central EOF is activated, the headquarters radiological position assumes the CEOF Radiological Assessment Coordinator title and fulfills this responsibility.



*Coordination of radiological and environmental assessment*

The back-up central EOF staff is responsible for coordinating radiological and environmental assessments in the event the local EOF is unavailable. The back-up central EOF staff currently monitors and maintains a log of site field team activities, and operates in a support role with respect to performing dose assessments during emergencies, exercises and drills. Upon implementation of the proposed consolidation, the CERC staff will coordinate site field team activities and be the lead facility for dose assessments. In the event both stations are in an emergency class requiring CERC activation, supplemental staff will be mobilized to support the additional station.

*Determination of recommended public protective actions*

The back-up central EOF staff is responsible for determining recommended public protective actions in the event the local EOF is unavailable. Upon implementation of the proposed consolidation, the CERC staff will become the lead emergency response facility (ERF) for developing PARs based upon plant conditions or dose projections. Station EIPs will continue to be used for developing PARs. The NAPS and SPS PAR processes are identical. The responsibility for PAR development, which is currently assigned to the local EOF Recovery Manager, will be assigned to the site-specific CERC Technical Support Manager. In the event both stations are in an emergency class requiring CERC activation, supplemental staff will be mobilized to support the additional station.

*Notification of offsite agencies*

The back-up central EOF staff is responsible for notifying the Commonwealth of Virginia and site-specific risk jurisdiction 911 Centers/EOCs in the event one or both of the local EOFs is unavailable. The back-up central EOF staff currently monitors notifications during emergencies, exercises and drills. These notifications include initial notifications, changes in emergency classification or PARs, and periodic updates. Upon implementation of the proposed EOF consolidation these notifications will be made from the CERC following turnover from the affected station(s). The proposed CERC has separate communications workstations for NAPS and SPS located in the Communications Area. In the event both stations are in an emergency class requiring CERC activation, supplemental staff will be mobilized to support the additional station.

*Coordination of event, plant, and response information provided to public information staff for dissemination to the media and public*

The existing headquarters support organization is responsible for providing event, plant, and response information to public information staff for dissemination to the media and public through the Joint Information Center (JIC). A local EOF Public Information Technical Advisor provides technical information to the headquarters support organization. Upon implementation of the proposed consolidation the responsibility for



reviewing draft press releases for technical accuracy, which is currently assigned to the local EOF Recovery Manager, will be assigned to the site-specific CERC Technical Support Manager. Responsibility for approving press releases, which is currently assigned to the senior headquarters support position, will be the responsibility of the CERC Corporate Response Manager (this is not a change).

*Staffing and activation of the facility within time frames and at emergency classification levels defined in the licensee emergency plan*

The headquarters support organization and back-up central EOF staff currently mobilize at an Alert or higher emergency per the CERP, and NAPS and SPS emergency plans, and will continue to do so as the CERC staff upon implementation of the proposed consolidation. In the event both stations are in an emergency class requiring CERC activation, supplemental staff will be mobilized to support the additional station. The activation time goal for the proposed CERC is within 75 minutes of the declaration of an Alert or higher emergency class by either station, with activation defined as the assembly of required positions in the proposed CERC and the CERC Corporate Response Manager declaring the facility activated.

*Coordination of emergency response activities with Federal, State, tribal, and local Agencies*

As required by 10 CFR 50, Appendix E, Section IV.D.3, the capability exists for notifying responsible Commonwealth of Virginia, and NAPS and SPS plume exposure pathway risk jurisdictions within 15 minutes after declaring an emergency (a site-specific Insta-Phone network). Initial notification is made from the affected site's Main Control Room and transitions to its TSC. This responsibility is transferred to the local or back-up central EOF, as appropriate. The same site-specific Insta-Phone network is available in the Main Control Rooms, TSCs, local EOFs and back-up central EOF. Subsequent notifications are transmitted at a designated frequency or as conditions change.

The NRC is notified via the Emergency Notification System (ENS) immediately after notification of the Commonwealth of Virginia, and NAPS or SPS plume exposure pathway risk jurisdictions, and not later than one hour after the time one of the emergency classes is declared, as required by 10 CFR 50.72(a)(ii)(3). Follow-up NRC notifications are made in accordance with 10 CFR 50.72(c). Responsibility for these notifications is transferred from the affected site's Main Control Room to its TSC where it remains for the duration of the event response.

The local EOF has the capability of establishing Health Physics Network (HPN) communications with the NRC. The back-up central EOF also has designated circuits for establishing HPN communications. The proposed CERC will utilize these site-specific circuits for HPN communications.

The NRC may dispatch a Region II Site Team to advise, assist and, as necessary, direct onsite response. NRC Region II Site Team members interface with their



counterparts in the local EOF and elsewhere. The Commonwealth of Virginia VDEM sends a liaison to the local EOF(s) to provide on-scene coordination with the Virginia EOC staff and interface with the local EOF Recovery Manager. Local governments do not send representatives to the existing local EOFs. The Commonwealth of Virginia VDH ORH sends a team to the local EOF(s) which coordinates with counterparts at the Virginia EOC and with the local EOF Radiological Assessment Coordinator. This team coordinates the placement of monitoring teams and independently calculates radiological consequences using its dose calculation model. NAPS and SPS plume exposure pathway risk jurisdictions do not send representatives to the existing local EOFs. Arrangements meeting the 10 CFR 50.47(b)(3) emergency planning standard for accommodating responding organizations exists at the NAPS and SPS local EOFs, and exists in the back-up central EOF. The proposed CERC will utilize the same areas as the back-up central EOF, which includes separate conference rooms for the NRC Region II Site Team and Commonwealth of Virginia liaisons, desk space in the main work area and designated work-stations in the site-specific Health Physics/Accident Assessment & Virginia Radiological Health rooms.

*Locating NRC and offsite agency staff closer to a site if the EOF is greater than 25 miles from the site. Minimum provisions at this location should include the following items: conference area with whiteboards, separate areas suitable for briefing and debriefing response personnel, telephones, site ERO contact lists, computers with internet access, access to a copier and office supplies, and radiation monitoring capability.*

Dominion Energy Virginia will establish on-site response locations at the following locations prior to implementation of the proposed change:

North Anna: North Anna Nuclear Information Center

Surry: Surry Nuclear Information Center

These locations will include a conference area with whiteboards, separate areas suitable for briefing and debriefing response personnel, and access to a copier and office supplies. Telephones, site ERO telephone contact lists, computers with internet access, and access to plant data and radiological information are also provided at these locations. Procedural guidance will ensure the near-site facilities are made operational and available in a timely manner.

*Obtaining and displaying key plant data and radiological information for each unit or plant the EOF serves*

The back-up central EOF staff currently acquires plant data through a secure connection to the NAPS and SPS plant computer servers. The proposed CERC has access to data via the Dominion Energy Virginia Wide and Local Area Networks (WANs and LANs). Dominion Energy Virginia has established an availability goal for the LAN/WAN that exceeds the 0.01 unavailability goal identified in NUREG-0696. The proposed CERC is capable of accessing the same data points that are available to the



Operators in the Control Rooms and emergency responders in the TSCs, including the Safety Parameter Display System (SPDS) data points. The proposed CERC's video wall display system can display the graphics on screens in the command center area. Video monitors in the site-specific Health Physics/Accident Assessment & Virginia Radiological Health rooms can display this information also.

*Analyzing plant technical information and providing technical briefings on event conditions and prognosis to licensee staff and offsite agency responders for each type of unit or plant*

The back-up central EOF staff has the capability to access key plant parameters from NAPS and SPS Plant Computer System (PCS) networks, and analyze radiological consequences using the Meteorological Information and Dose Assessment System (MIDAS). These capabilities will continue to be available in the proposed CERC. Thus, the CERC staff will be able to monitor and display plant parameters, assess the severity of an accident, project the accident's course, and provide decision-makers with information needed for mitigation, recovery, and PARs. The proposed CERC has a sufficient number of workstations to monitor conditions at NAPS and SPS simultaneously. The proposed CERC is equipped with conference rooms for technical briefings of licensee staff and offsite agency responders. Telephone conferencing capability is available for briefing responders not located in the CERC. In the event both stations are in an emergency class requiring CERC activation, supplemental staff is mobilized to support each station.

*Effectively responding to and coordinating response efforts for events occurring simultaneously at more than one site for a consolidated EOF*

The proposed CERC is capable of monitoring and analyzing events at NAPS and SPS simultaneously. A sufficient number of workstations are available for data retrieval and the facility has adequate display capability to simultaneously present this information to the CERC staff. In the event both stations are in an emergency class requiring CERC activation, supplemental staff is mobilized to support the additional station. Separate NAPS and SPS communications networks will be used for notifying the Commonwealth of Virginia, and NAPS and SPS plume exposure pathway risk jurisdictions. Site-specific work spaces in the command center area and the separate NAPS and SPS Health Physics/Accident Assessment & Virginia Radiological Health rooms provide a physical separation to segregate response efforts.

## 2.2 LOCATION, STRUCTURE, AND HABITABILITY

The proposed CERC is located in the Innsbrook Technical Center (ITC) at 5000 Dominion Boulevard, Glen Allen, Virginia. This location is approximately 30 miles from the NAPS TSC and approximately 59 miles from the SPS TSC.

There are no specific NUREG-0696 habitability criteria for an EOF located more than 10 miles from a nuclear station and a back-up facility is not required. The proposed CERC



is greater than 10 miles from NAPS and SPS. Thus, EOF functions would not be interrupted during radiation releases for which it was necessary to recommend protective actions for the public to offsite officials. The ITC was constructed in the mid-1980s. The building is capable of withstanding wind loads and live loads equal to or greater than those specified in the BOCA National Building Code/1981. Access to the ITC is continually controlled by a contracted security service. The main entrance to the proposed CERC is controlled by a monitored electronic card reader that allows entry to authorized personnel only. When the proposed CERC is activated these doors may be placed in access.

Two utility circuits feed the ITC. Primary power is provided by commercial power. Electrical outlets, heating, ventilation and air conditioning (HVAC), lighting fixtures, and the wiring closet that supports both the voice and data communications in the proposed CERC have back-up power available. Thus, a loss of commercial power would not impact voice or data communications equipment in the proposed CERC. The Dominion Energy Virginia telecommunications infrastructure supporting the proposed CERC functions, including, but not limited to, fiber optic transmission equipment, telephone switching equipment and data network routers, is configured to operate from at least one and usually multiple back-up power sources in the event of a loss of commercial power. These back-up sources include generator, DC battery and uninterruptable power supply (UPS) systems.

## 2.3 STAFFING AND TRAINING

The staff needed to activate the proposed CERC will consist of the staff needed to activate an existing station EOF and unique positions of the existing headquarters (HQ) support organization as shown below:

**Table 2.3-1: Current and Proposed CERC Staffing for Activation**

Current Local EOF	Proposed CERC	Current HQ support organization
	Corporate Response Manager	Corporate Response Manager
Recovery Manager	Tech Support Manager	Technical Support Manager
Ops Support Coordinator	Ops Support Coordinator	Operations Support*
State/Local Communicator	State/Local Communicator	Back-up State/Local Communicator*
Radiological Assessment Coordinator	Radiological Assessment Coordinator	Radiological Support
Dose Assessment	Dose Assessment	Back-up Dose Assessment*
Field Team Radio Operator	Field Team Radio Operator	Back-up Field Team Radio Operator*
HPN Communicator	HPN Communicator	Back-up HPN Communicator*
	Resource Manager	Plan/Design/Construction Manager
	Facility Coordinator	Facility Coordinator
	Nuclear News Manager	Nuclear News Manager
	Chief Technical Spokesperson	Chief Technical Spokesperson

\* Currently not required for activating the headquarters support organization.

NRC's January 13, 1984 letter (Reference 7.20) accepted 1-1/2 hours as the EOF activation goal for both NAPS and SPS local EOFs. However, the times for augmenting the local EOF Recovery Manager and Radiological Assessment Coordinator positions in NAPS Emergency Plan Table 5.2, Emergency and Recovery Corporate Response Required for Nuclear Station Emergencies, was listed as 1 hour. The corresponding table in the SPS Emergency Plan listed 1-1/2 hours for these positions. This inconsistency was carried forward when an emergency response facility activation goal of "approximately 60 minutes" was added for the local EOF by NAPS Emergency Plan



Revision 18 (January 3, 1996) and of "approximately 90 minutes" for the SPS local EOF by SPS Emergency Plan Revision 40 (January 1, 1996).

Dominion Energy Virginia proposes 75-minutes following declaration of an Alert or higher emergency class as the Corporate Emergency Response Center (CERC) activation goal (unless special circumstances apply). Table 2.3-1, Current and Proposed Staffing for Activation, lists the ERO positions required for activation of the proposed CERC. Special circumstances include situations where the movement of emergency responders could place them at risk, e.g., severe weather. Activation will be defined as the assembly of required positions in or under the operational control of the designated Corporate Response Manager and declaring the facility activated (i.e., ready to begin the turnover process with the affected station TSC(s)).

The NAPS and SPS on-shift staffing analyses (OSAs) showed that, for the event sequences analyzed, on-shift responders can appropriately respond to an emergency without an augmented staff for a time of up to 90 minutes. Thus, for these event sequences, the on-shift staff can analyze the conditions and declare the appropriate emergency class within 15 minutes as required by 10 CFR 50, Appendix E, IV.C.2, notify the Commonwealth of Virginia Emergency Operations Center (EOC) and site-specific risk-jurisdiction 911 Centers, and respond to the emergency event during the proposed CERC's 75 minute augmentation goal.

The location of the proposed CERC facilitates prompt response by corporate support and management personnel who commute to the building on a regular basis. The current back-up central EOF and headquarters support organization staffs will transition into the staff for the proposed CERC. This ERO population participates in periodic augmentation capability assessments which have consistently demonstrated the capability to staff the existing organization within 75 minutes of a simulated event declaration.

The same training program guide for the current local EOF staff also governs training for the back-up central EOF and headquarters support organization staffs. Prior to implementation of the proposed CERC, this training program guide will be revised to reflect the new roles of the proposed CERC and the ERO members filling these roles will be qualified accordingly. Training for key ERO members supporting NAPS and SPS will include station-specific differences, e.g., plume exposure pathway risk jurisdictions, release pathways, station ingress and egress routes, offsite protective action zones, and evacuation time estimates. NAPS Unit Nos. 1 and 2, and SPS Unit Nos. 1 and 2, are 3-loop Westinghouse pressurized water reactors, and both stations have Independent Spent Fuel Storage Installations; thus, the plans and procedures for operation and emergency response are similar.

Upon implementation of the proposed CERC, responsibility for the key EOF functions listed in Nuclear Energy Institute (NEI) 99-02, Regulatory Assessment Performance Indicator Guideline, for the Drill/Exercise Performance (DEP) and ERO Drill Participation performance indicators (PIs) will be updated as shown below:



**Table 2.3-2: Responsibility for NEI 99-02 Key EOF Functions**

<b>Key EOF Responsibility/Function</b>	<b>Responsible Position in Current Local EOF</b>	<b>Responsible Position in Proposed CERC</b>
Senior Manager / Management of corporate resources	Local EOF Recovery Manager	CERC Technical Support Manager
Key Protective Measures / Radiological effluent and environs monitoring, assessment, and dose projections	Local EOF Radiological Assessment Coordinator	CERC Radiological Assessment Coordinator
Key EOF Communicator / provides offsite (state/local) notification	Local EOF State and Local Communicator	CERC State and Local Communicator

Subsequent to implementation of the proposed CERC, notification and PAR DEP PI opportunities performed in the CERC will be credited in accordance with NRC-endorsed NEI 99-02. If the option for EROs with common facilities is exercised, negative performance, positive performance, and performance enhancing ERO participation opportunities for the proposed CERC positions will be credited for both NAPS and SPS.

## 2.4 SIZE

The total usable space of the proposed CERC is approximately 5987 square feet. Based on the 75 square foot per person guidance of NUREG-0696, this provides enough space for approximately 80 individuals. The expected number of EOF personnel during a dual-station event, including offsite agency responders, will be less than 60.

Space is allocated for accident assessment, radiation assessment and offsite monitoring, offsite communications, command and control, conferences, NRC team members, and administrative support. Office space is provided for federal incident responders, administrative services, offsite communications, accident assessment, radiation assessment, offsite monitoring, command and control, conferences, NRC team members, and storage. The space is sufficient for service of equipment and displays. Phones and special communications equipment are provided as needed throughout the facility at personnel work stations. Individuals needing access to plant data are provided access via personal computers (PCs). Space is provided for ready access to functional displays of data through the use of computer monitors and video display monitors.



Figure 2.4-1: depicts the layout of the proposed CERC:

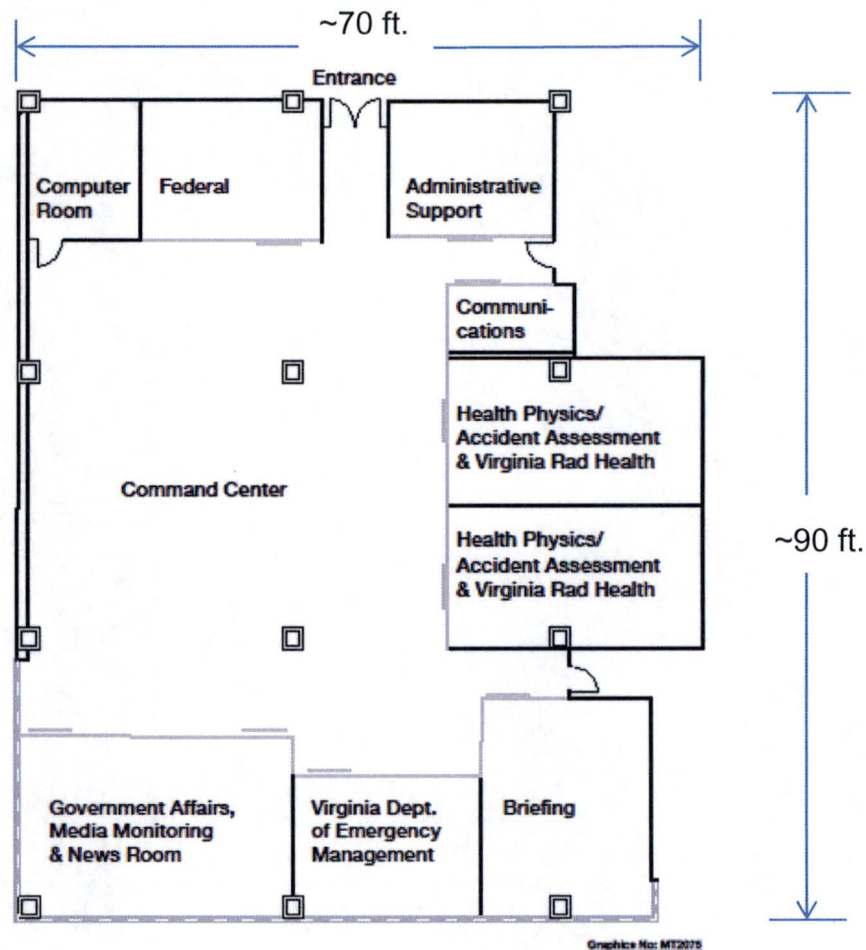


Figure 2.4-1: Layout of Proposed CERC

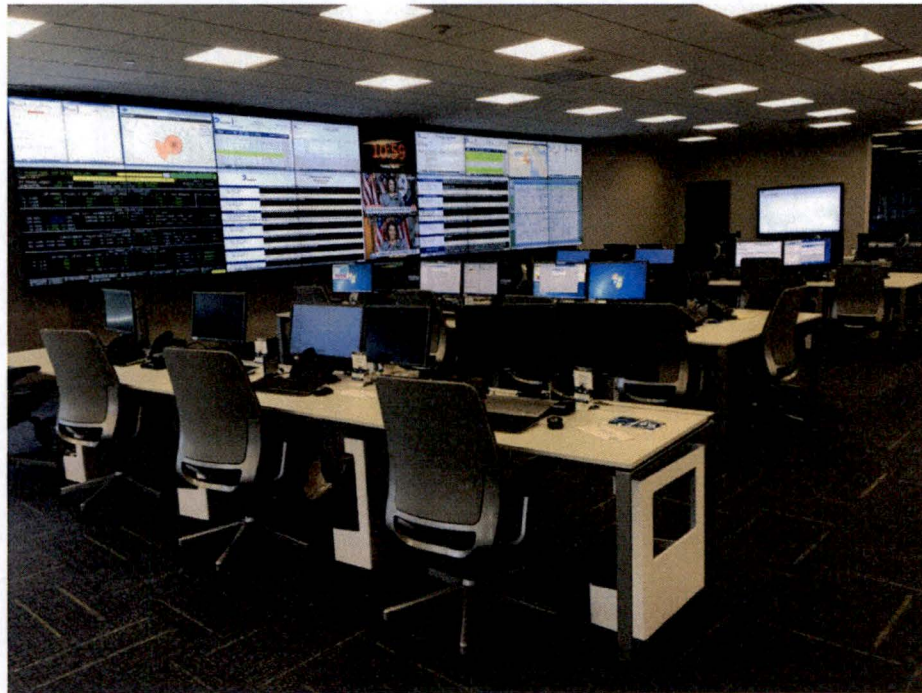


**Table 2.4-1: Description of Each Area In The Proposed CERC Layout**

<b>Area</b>	<b>Description</b>
Command Center	Main area (approximately 46 ft x 55 ft) with separate tables for NAPS and SPS (one each) designated for management, intrafacility communications and plant parameter monitoring, common tables for logistics and external affairs functions, table for federal and state representatives, and tables for observers.
Computer Room	Houses Information Technology server equipment and communications connections (approximately 12 ft x 14 ft).
Federal	Office area (approximately 15 ft x 20 ft) with conference table with electrical outlets and communications network ports and screen connection(s). Chairs, a speaker phone, dry erase board, and networked display screen are also in this office area.
Administrative Support	Office area (approximately 14 ft x 17 ft) with location-specific procedures, reference materials and administrative supplies, and Multi-function scanner/printer.
Communications	Office area (approximately 7 ft x 14 ft) for state/local notifications. Instaphone (NAPS & SPS) and Automatic Ringdowns (NAPS & SPS) are located in this area.
Health Physics/Accident Assessment & Virginia Rad Health (2 rooms)	Office areas (approximately 16 ft x 28 ft) designated for NAPS and SPS (one each). Provided in this area are: <ul style="list-style-type: none"> <li>• Networked display screens</li> <li>• Multi-function scanner/printer</li> <li>• Computers</li> </ul>
Government Affairs, Media Monitoring & News Room	Office area (approximately 20 ft x 30 ft) with: <ul style="list-style-type: none"> <li>• Multi-function scanner/printer</li> <li>• Networked display screens</li> <li>• Dry erase board</li> </ul>
Virginia Dept. of Emergency Management	Office area (approximately 15 ft x 20 ft) with conference table with electrical outlets and communications network ports and screen connection(s). Chairs, a speaker phone, dry erase board, and networked display screen are also in this office area.
Briefing	Office area (approximately 20 ft x 22 ft) with: <ul style="list-style-type: none"> <li>• Dry erase board</li> <li>• Networked display screen</li> </ul>



The proposed CERC command center is shown below:



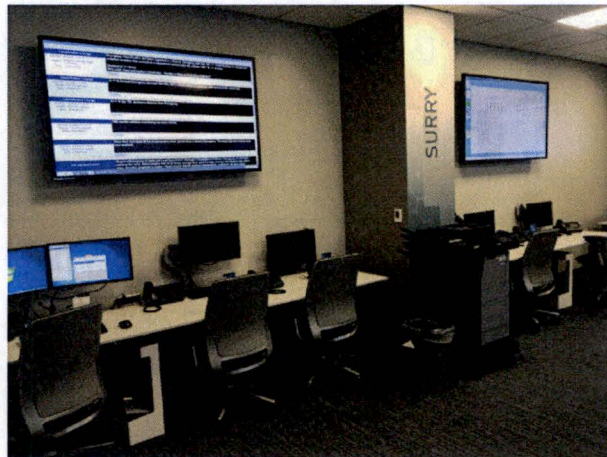
**Figure 2.4-2: Proposed CERC Command Center**



**Figure 2.4-3: Video Wall Display (Left Side: NAPS-Specific Screens, Right Side:SPS-Specific Screens)**



Proposed site-specific CERC Health Physics/Accident Assessment & Virginia Radiological Health work areas are shown in Figures 2.4-4 thru 2.4-7 below:

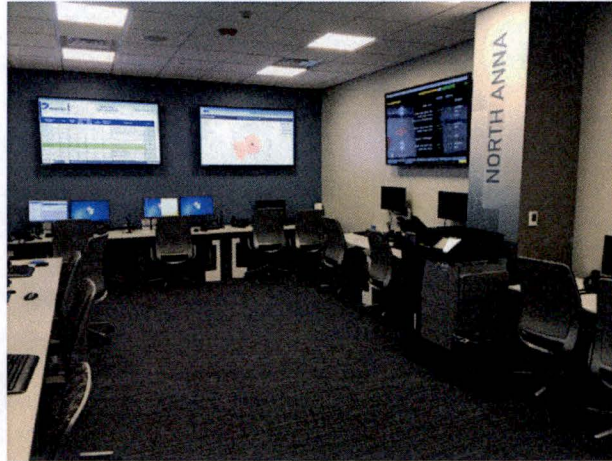


**Figure 2.4-4: CERC Surry Health Physics Accident Assessment & Virginia Radiological Health Work Area Image 1**



**Figure 2.4-5: CERC Surry Health Physics Accident Assessment & Virginia Radiological Health Work Area Image 2**





**Figure 2.4-6: CERC North Anna Health Physics Accident Assessment & Virginia Radiological Health Work Area Image 1**



**Figure 2.4-7: CERC North Anna Health Physics Accident Assessment & Virginia Radiological Health Work Area Image 2**



The proposed CERC's Government Affairs, Media Monitoring & News Room is shown below:



**Figure 2.4-8: Proposed CERC Government Affairs, Media Monitoring and News Room Images**

## 2.5 RADIOLOGICAL MONITORING

The proposed CERC is further than 10 miles from NAPS and SPS. Consequently, the habitability criteria described in NUREG-0696, Section 4.2, Table 2, are not applicable.

## 2.6 COMMUNICATIONS

The proposed CERC has reliable voice communication to the NAPS and SPS Main Control Rooms, TSCs, the NRC, State and local emergency operations centers, nuclear steam supply system (NSSS) suppliers, the Federal Emergency Management Agency, the US Department of Energy, and the Joint Information Center. The existing communications systems include:

- Dominion Energy Virginia-installed telephone system (to manage licensee emergency response resources and communications with NAPS and SPS TSCs) with access to the Dominion Energy Virginia internal phone system, public switched network and long distance
- NAPS and SPS Insta-Phones (for providing emergency notifications to the Commonwealth of Virginia and site-specific risk jurisdiction 911 Centers/EOCs)
- Radio systems for communication with NAPS and SPS field monitoring teams to coordinate radiological monitoring



- NRC Emergency Telecommunications System telephones (Emergency Notification System, Health Physics Network, Protective Measures Counterpart Link, Reactor Safety Counterpart Link, Management Counterpart Link, and local area network connection are provided by the Dominion Energy Virginia communications infrastructure)
- Virginia Satellite Radio/Telephone (to be installed upon implementation)
- Facsimile (fax) transmission capability
- Scanning (e-mail) transmission capability

The emergency communications systems at the proposed CERC are designed to ensure the reliable, timely flow of information between all parties having an emergency response role. The Insta-Phone networks enable Control Rooms, TSCs, current local EOFs and back-up central EOF communications with the Commonwealth of Virginia EOC and site-specific risk-jurisdiction 911 Centers/local EOCs and with each other. The Insta-Phone will be the primary means of communicating event classification changes to the Commonwealth of Virginia EOC, and site-specific risk-jurisdiction 911 Centers/local EOCs.

Existing commercial telephone service and fax will serve as the designated back-up means of communications in the event of an Insta-Phone failure. Dominion Energy Virginia has telecommunications capabilities that can provide access to long distance networks without having to go through a local telephone company switch. Dominion Energy Virginia maintains an extensive private Synchronous Optical Network (SONET) that serves to connect the ITC to NAPS and SPS. Telephones are provided for the respective Federal and State representatives. Multifunction machines with fax capability are available in the proposed CERC to support the transmission of information between the emergency response facilities and state, local, and federal authorities.

## 2.7 INSTRUMENTATION, DATA SYSTEM EQUIPMENT, AND POWER SUPPLIES

Data acquisition for the proposed CERC is achieved through a secure connection to the plant computer servers. The proposed CERC has access to displays that are representative of the displays in the Control Room via the Dominion Energy Virginia Wide and Local Area Networks (WAN and LAN). Dominion Energy Virginia has established an availability goal for the LAN/WAN that exceeds the 0.01 unavailability goal in NUREG-0696. The proposed CERC has access to the same data points that are available to Operators in the Control Room and emergency responders in the TSCs, including the SPDS data points. The video display system in the proposed CERC will display the graphics on screens in the Command Center area.

The workstations and related LAN/WAN equipment require AC power to operate. A loss of AC power to the equipment, located at numerous locations throughout the Dominion Energy Virginia system, will cause a loss of this capability. The LAN equipment housed within the proposed CERC is provided with back-up power. The core network equipment in the ITC is also provided with back-up power.



Since the proposed CERC is located offsite, its electrical equipment loads will not affect any safety related power source. Loss of primary commercial power would not cause loss of any stored data vital to EOF functions. Historical data from the site will be accessible from a historical database. This information could be accessed by the proposed CERC, as needed, after power is restored to the LAN.

## 2.8 TECHNICAL DATA AND DATA SYSTEM

The proposed CERC will have the capability to receive, store, process, and display information needed to perform assessments of actual and potential offsite environmental consequences during an emergency at NAPS and SPS. A proxy server will allow the display of data points that cover Type A, B, C, D, and E variables discussed in NUREG-0696, Section 4.8. In addition, the meteorological variables required for dose assessment will be made available through the proxy server. This data will also be accessible from a historical database. The new communication voice and data network will meet the functional intent of the criteria described in NUREG-0696, Sections 4.7 and 4.8.

Offsite dose assessment is performed for NAPS and SPS using the Meteorological Information and Dose Assessment System (MIDAS). MIDAS is a computer software program intended for use at nuclear generating stations and other emergency response facilities in the event of an actual or potential release of airborne radioactivity to the environment at levels warranting declaration of an emergency specified in the NAPS and SPS emergency plans.

## 2.9 RECORDS AVAILABILITY AND MANAGEMENT

Hard copies of key reference materials for NAPS and SPS will be maintained in the ITC. In addition, station design documentation, plant drawings, procedures, etc., are available electronically via the local area network connection. Examples include:

- Plant Technical Specifications – accessed electronically
- Plant operating procedures – accessed electronically
- Emergency operating procedures – accessed electronically
- Final Safety Analysis Reports – accessed electronically
- Emergency plans – controlled hard copies of station emergency plans and State emergency plans (including site specific appendices)
- Offsite population distribution data – accessed electronically
- Evacuation plans – accessed electronically
- Licensee employee radiation exposure history – accessed electronically
- Drawings – accessed electronically

Hard copy records will be maintained by a controlled distribution process.



### 3.0 CONCLUSION

The proposed replacement of the NAPS and SPS local EOFs, and their common back-up central EOF, with a consolidated EOF (proposed CERC) more than 25 miles from both power reactor sites constitute emergency plan changes requiring Commission approval per 10 CFR 50.54(q)(4) to satisfy the provisions of Appendix E Section IV.E.8.b.

### 4.0 JUSTIFICATION

The proposed change affects the NAPS and SPS emergency plans, including relocation of CERP content, but does not alter any of the requirements of the Operating Licenses or the Technical Specifications. The change does not alter any of the assumptions used in the safety analyses, nor does it cause any safety system parameters to exceed their acceptance limit. Therefore, the proposed change has no adverse effect on plant safety. Additionally, the changes can be made without adverse impact to plant operations or to the health and safety of the public. Based on the technical analysis performed by Dominion Energy Virginia, the proposed change is acceptable.

#### Requirements and Guidance – EOF Relocation

10 CFR 50, Appendix E, Section IV.E.8.b requires a licensee desiring to locate an EOF more than 25 miles from a nuclear power reactor site to request prior NRC approval by submitting an application for an amendment to its license. For the purposes of the proposed change, this requirement clearly applies because the proposed consolidated EOF in Glen Allen, Virginia is greater than 25 miles from both of the facilities that it serves. In addition, a back-up facility for the proposed CERC is not required because IV.E.8.b requires a back-up when the primary EOF is less than 10 miles from the site only.

Section IV.E.8.b of Appendix E also requires that, for an EOF located more than 25 miles from a nuclear reactor site, provisions be made for locating NRC and offsite responders closer to the reactor site to facilitate face-to-face interaction with emergency personnel entering and leaving the site. This regulation also describes the requirements for space and equipment as follows:

- Space for members of an NRC site team and federal, state, and local responders
- Additional space for conducting briefings with emergency response personnel
- Communication with other licensee and offsite emergency response facilities
- Access to plant data and radiological information
- Access to copying equipment and office supplies

Utilizing the clarification of the above items contained in NSIR/DPR-ISG-01, near-site response locations will be established to meet this requirement, as described above.

Section IV.E.8.c of Appendix E establishes requirements for data acquisition and display, technical analysis of event conditions, and support response for multiple reactor



sites. Compliance with these requirements, as applicable to the proposed change, is discussed in Section 2.1 above.

The 10 CFR 50.47(b)(1) emergency planning standard for assigning primary responsibilities for licensee and state and local organization emergency response and for each organization to have staff to respond and to augment on a continuous basis will continue to be met because:

- Primary responsibilities will continue to be assigned as described above and in the proposed NAPS and SPS emergency plan revisions.
- Dominion Energy Virginia staff will respond and augment on a continuous basis, as described in the proposed NAPS and SPS emergency plans.

The 10 CFR 50.47(b)(3) emergency planning standard for making arrangements to accommodate State and local staff at the licensee's EOF will continue to be met because space is provided for the Commonwealth of Virginia VDEM liaison and VDH ORH team (risk-jurisdiction radiological emergency response plans do not include provisions for staffing the existing local EOF or proposed CERC).

The 10 CFR 50.47(b)(8) emergency planning standard for providing and maintaining adequate emergency facilities and equipment to support the emergency response will continue to be met. After the proposed consolidation, NAPS and SPS will each continue to have an EOF from which effective direction can be given and effective control can be exercised during an emergency. Furthermore, the proposed CERC meets the EOF criteria in NUREG-0696, as discussed below, with the exception of its distance from NAPS and SPS. The 10 CFR 50.47(b)(9) emergency planning standard for having adequate methods, systems, and equipment for assessing and monitoring the actual or potential offsite consequences of a radiological emergency condition is encompassed in the EOF criteria in NUREG-0696, as discussed below.

Section 4 of NUREG-0696 provides guidance on the overall criteria for the EOF:

- Functions
- Location, structure, and habitability
- Staffing and training
- Size
- Radiological monitoring
- Communications
- Instrumentation, data system equipment, and power supplies
- Technical data and data system
- Records availability and management

Each of these criteria, as applicable to the proposed change, is discussed in Sections 2.1 through 2.9 above.

NUREG-0696 expands on the Functions criterion with the following detail (expanded list included in NSIR/DPR-ISG-01):

- Management of overall licensee emergency response



- Coordination of radiological and environmental assessment
- Determination of recommended public protective actions
- Notification of offsite agencies
- Coordination of event, plant, and response information provided to public information staff for dissemination to the media and public
- Staffing and activation of the facility within time frames and at emergency classification levels defined in the licensee emergency plan
- Coordination of emergency response activities with Federal, State, tribal, and local agencies
- Locating NRC and offsite agency staff closer to a site if the EOF is greater than 25 miles from the site
- Obtaining and displaying key plant data and radiological information for each unit or plant the EOF serves
- Analyzing plant technical information and providing technical briefings on event conditions and prognosis to licensee staff and offsite agency responders for each type of unit or plant
- Effectively responding to and coordinating response efforts for events occurring simultaneously at more than one site for a consolidated EOF

Each of these criteria, as applicable to the proposed change, is discussed above.

## **5.0 NO SIGNIFICANT HAZARDS CONSIDERATION**

Dominion Energy Virginia has evaluated whether or not a significant hazards consideration (SHC) is warranted for the proposed amendments by addressing the three criteria set forth in 10 CFR 50.92(c) as discussed below.

### **Criterion 1:**

Do the proposed amendments involve a significant increase in the probability or consequences of an accident previously evaluated?

Response: No.

The proposed amendments affect the NAPS and SPS emergency plans, including relocation of CERP content, but do not alter any of the requirements of the Operating Licenses or the Technical Specifications. The proposed amendments do not modify any plant equipment and does not impact any failure modes that could lead to an accident. Additionally, the proposed amendments have no effect on the consequences of any analyzed accident since the amendments do not affect any equipment related to accident mitigation. Therefore, the proposed amendments do not involve a significant increase the probability or consequences of an accident previously evaluated.

### **Criterion 2:**

Do the proposed amendments create the possibility of a new or different kind of accident from any accident previously evaluated?



Response: No.

The proposed amendments affect the NAPS and SPS emergency plans, including relocation of CERP content, but does not alter any of the requirements of the Operating Licenses or the Technical Specifications. It does not modify any plant equipment and there are no impacts on the capability of existing equipment to perform its intended functions. No system setpoints are being modified and no new failure modes are introduced. The proposed amendments do not introduce new accident initiator or malfunctions that would cause a new or different kind of accident. Therefore, the proposed amendments do not create the possibility of a new or different kind of accident from any accident previously evaluated.

**Criterion 3:**

Do the proposed amendments involve a significant reduction in a margin of safety?

Response: No.

The proposed amendments affect the NAPS and SPS emergency plans, including relocation of CERP content, but do not alter any of the requirements of the Operating Licenses or the Technical Specifications. The proposed amendments do not affect any of the assumptions used in the accident analyses, or any operability requirements for equipment important to plant safety. Therefore, the proposed amendments do not involve a significant reduction in the margin of safety.

In summary, Dominion Energy Virginia concludes that the proposed amendments do not represent a significant hazards consideration under the standards set forth in 10 CFR 50.92(c).

**6.0 ENVIRONMENTAL CONSIDERATION**

Dominion Energy Virginia has determined that the proposed change would not change requirements with respect to use of a facility component located within the restricted area, as defined by 10 CFR 20, nor would it change inspection or surveillance requirements. Dominion Energy Virginia has evaluated the proposed change and has determined that the change does not involve:

- A Significant Hazards Consideration,
- A significant change in the types or significant increase in the amounts of an effluent that may be released offsite, or
- A significant increase in individual or cumulative occupational radiation exposure.

Accordingly, the proposed amendments meet the eligibility criterion for categorical exclusion set forth in 10 CFR 51.22(c)(9) and (10)(ii). Therefore, pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the proposed change.



## 7.0 REFERENCES

- 7.1 10 CFR 20 - Standards for Protection Against Radiation.
- 7.2 10 CFR 50 - Domestic Licensing of Production and Utilization Facilities sub-parts 47 Emergency plans, 54 Conditions of licenses, 72 Immediate notification requirements for operating nuclear power reactors and 92 Issuance of amendment, and Appendix E Emergency Planning and Preparedness for Production and Utilization Facilities.
- 7.3 10 CFR 51 - Environmental Protection Regulations for Domestic Licensing and Related Regulatory Functions sub-part 22 Criterion for categorical exclusion; identification of licensing and regulatory actions eligible for categorical exclusion or otherwise not requiring environmental review.
- 7.4 NUREG-0696, Functional Criteria for Emergency Response Facilities (February 1981).
- 7.5 NUREG-0737, Supplement 1, Clarification of TMI Action Plan Requirements: Requirements for Emergency Response Capability (January 1983).
- 7.6 NSIR/DPR-ISG-01, Emergency Planning for Nuclear Power Plants (November 2011).
- 7.7 Generic Letter 80-73, Functional Criteria for Emergency Response Facilities, NUREG-0696, dated August 1, 1980.
- 7.8 Generic Letter 80-90, Post-TMI [Three Mile Island] Requirements, NUREG-0737, dated October 31, 1980.
- 7.9 Generic Letter 81-10, Post-TMI Requirements for the Emergency Operations Facility, dated February 18, 1981.
- 7.10 Generic Letter 82-33, Supplement 1 to NUREG-0737 - Emergency Response Capability, dated December 17, 1982.
- 7.11 Safety Evaluation by the Division of Reactor Licensing, U. S. Atomic Energy Commission, in the matter of Virginia Electric and Power Company, Surry Power Station Units 1 and 2, Surry County, Virginia, Docket Nos. 50-280 and 50-281, February 23, 1972.
- 7.12 Safety Evaluation Report related to the operation of North Anna Power Station Units 1 and 2 (NUREG-0053, June 1976), including NUREG-0053, Supplement 11 (August 1980) for Unit 2.
- 7.13 Nuclear Reactor Regulation Letter, untitled (advised that conceptual design provided in December 18 1980 and June 1, 1981 letters not sufficiently detailed), dated November 23, 1981.



- 7.14 NRC Region II Letter, NRC Region II Emergency Response, dated January 29, 1982.
- 7.15 NRC Region II Letter, NRC Region II Emergency Response, dated February 12, 1982.
- 7.16 NRC Region II Letter, untitled (provided results of March 15-26, 1982 emergency preparedness program appraisal, including as appendices Confirmation of Action Letter dated April 6, 1982, Preparedness Improvement Items, Emergency Plan Deficiencies, and Inspection Report Nos. 50-280, 281/82-05), dated May 25, 1982.
- 7.17 NRC Region II Letter, untitled (provided results of February 16-26, 1982 emergency preparedness program appraisal, including as appendices Confirmation of Action Letter dated March 10, 1982, Preparedness Improvement Items, and Inspection Report Nos. 50-338, -339/82-05, with list of Emergency Plan Deficiencies attached), dated July 1, 1982.
- 7.18 Nuclear Reactor Regulation Letter, NUREG-0737 Item III.A.2.1 Emergency Plan Upgrade to Meet Rule [Re: North Anna Power Station, Unit No. 1 and No. 2 (NA-1&2)], dated May 10, 1983.
- 7.19 Nuclear Reactor Regulation Letter, NUREG-0737 Item III.A.2.1 - Emergency Plan Upgrade to Meet Rule (Surry Power Station Unit Nos. 1 and 2), dated May 13, 1983.
- 7.20 Nuclear Reactor Regulation Letter, untitled (advised that the Commission found the location of the back-up and primary EOFs for NAPS and SPS acceptable), dated January 13, 1984.
- 7.21 Nuclear Reactor Regulation Letter, Emergency Response Capability, North Anna Power Station, Units No. 1 and No. 2 (NA-1&2), dated May 25, 1987.
- 7.22 Nuclear Reactor Regulation Letter, NUREG-0737, TMI Action Item III.A.1.2, "Emergency Response Facilities" and Item III.A.2.2, "Meteorological Data Upgrade," Surry Power Station Units 1 and 2, dated June 12, 1987.
- 7.23 Surry Power Station Updated Final Safety Analysis Report (UFSAR) (Revision 48.03 dated February 28, 2017).
- 7.24 North Anna Power Station Updated Final Safety Analysis Report (UFSAR) (Revision 52.06 dated June 15, 2017).
- 7.25 Corporate Emergency Response Plan (CERP) (Revision 15 dated November 22, 2016).



- 7.26 North Anna Power Station Emergency Plan (Revision 0 dated July 22, 1982, Revision 8 dated September 27, 1984, Revision 12 dated October 2, 1989, Revision 18 dated January 3, 1996, Revision 38 dated December 21, 2012, and Revision 44 dated February 2, 2017).
- 7.27 Surry Power Station Emergency Plan (Revision 0 dated July 29, 1982, Revision 15 dated June 28, 1984, Revision 32 dated April 27, 1989, Revision 40 dated January 1, 1996, Revision 58 dated December 21, 2012, and Revision 63 dated March 16, 2017 (Revisions 0-32 were not numbered, but these revision numbers correspond to the sequence by date)).
- 7.28 Outgoing Letter Serial No. 1008, Draft NUREG 0696 Implementation Plan for Surry Power Station [and] North Anna Power Station, dated December 18, 1980.
- 7.29 Outgoing Letter Serial No. 312, untitled (updates Outgoing Letter Serial No. 1008 dated December 18, 1980), dated June 1, 1981.
- 7.30 Outgoing Letter Serial No. 102, NUREG-0696, Emergency Response Facilities, North Anna and Surry Power Stations, dated April 8, 1982.
- 7.31 Outgoing Letter Serial No. 676, Supplemental Information, re: NUREG-0696 Response, dated December 6, 1982.
- 7.32 Outgoing Letter Serial No. 237, Generic Letter 82-33, Emergency Operations Facilities, North Anna and Surry Power Stations, dated April 14, 1983.
- 7.33 Outgoing Letter Serial No. 259, Generic Letter 82-33, Emergency Operations Facilities, North Anna and Surry Power Stations, dated May 6, 1983.
- 7.34 Outgoing Letter Serial No. 88-617, Corporate Emergency Operations Facility Relocation, dated September 14, 1988.
- 7.35 Building Officials and Code Administrators (BOCA) National Building Code/1981.
- 7.36 Nuclear Energy Institute (NEI) 99-02, Revision 7, Regulatory Assessment Performance Indicator Guideline, dated August 31, 2013.
- 7.37 North Anna NEI-10-05, "Assessment of On-Shift Emergency Response Organization Staffing and Capabilities," December 2012.
- 7.38 Surry NEI-10-05, "Assessment of On-Shift Emergency Response Organization Staffing and Capabilities," December 2012.



**Serial No. 17-325**  
**Docket Nos.: 50-338/339**  
**50-280/281**  
**52-017**  
**72-2/16/55/56**

## **Attachment 2**

### **Disposition of Corporate Emergency Response Plan Contents**



**Table 2.0-1 Disposition of Emergency Response Plan Contents**

Section	Existing CERP Wording	Disposition
Introduction	The Corporate Emergency Response Plan (CERP) establishes guidelines for contending with emergencies that may occur at North Anna or Surry Power Station. Company policy mandates an Emergency Preparedness Program designed to support our nuclear power stations in such a manner as to ensure effective control and coordination of response efforts should the need arise. The CERP complies with standards set forth by the Nuclear Regulatory Commission, and is formulated for compatibility with governmental, vendor and volunteer support organizations that may render emergency assistance. Pre-planned response efforts with support organizations sustain our mutual goal of protecting public health and safety. Compliance with this Plan is required.	The format of the North Anna Emergency Plan (NAEP) and Surry Emergency Plan (SEP) do not include an "Introduction" section. NAEP & SEP Sections 2.1 provide the necessary information.
Table of Contents	Self-explanatory	The format of the NAEP & SEP includes a table of contents which will be revised as necessary.
1.0	Definitions	NAEP & SEP Sections 1.0 will be updated to include CERP-defined terms as appropriate.
1.1	Acronyms and Abbreviations	NAEP & SEP Sections 1.1 will be updated to include unique acronyms and abbreviations as appropriate.



2.0	<p>Scope and Applicability</p> <p>The Corporate Emergency Response Plan (CERP) establishes the fundamental guidelines necessary for the Corporate Emergency Response Organization to respond to emergency events that may occur at the North Anna or Surry Power Station. Included are provisions to commit Company resources to the response effort, to allow deviation from standard policy and to provide long term recovery support. The CERP is also designed to ensure compatibility with the planning efforts of offsite organizations which may provide assistance in the event of an emergency.</p> <p>The basic purpose of the Plan is to establish a corporate emergency response organization which will support the affected station with respect to emergency management and resources, and to provide facilities, equipment, and services necessary for recovery.</p> <p>The ultimate goal is to ensure the protection of the health and safety of the general public during unusual or emergency conditions.</p> <p>The organizational framework of the CERP dictates that the Corporate Response Manager is responsible for implementation of this plan.</p>	NAEP & SEP Sections 2 describe scope and applicability sufficiently.
3.0	<p>Summary of Corporate Emergency Response Plan (CERP)</p> <p>The types of emergencies at the nuclear stations are divided into four classifications covering a broad spectrum of potential occurrences. These classifications range from "Notification of Unusual Event" in which offsite officials are notified of an unusual condition, through "General Emergency" in which onsite and offsite evacuation may be required and a major state of emergency exists. These classifications are compatible with the applicable state and local government emergency plans.</p> <p>The CERP, which is implemented at an "Alert" or higher classification, provides a mechanism for supporting the station response effort,</p>	The content of the first and second paragraphs of NAEP & SEP Sections 3 address the content of the corresponding paragraphs in CERP Section 3.0 sufficiently. The detail in the subsequent paragraphs is beyond the scope of a summary. However, a summary of public information



	<p>including determination of offsite radiological conditions and establishing recovery operations. The CERP also provides additional support if the emergency is of such a magnitude that Company resources are overextended. Such support may be additional manpower to augment the station's operating staff, manpower in specialized disciplines, and specialized emergency response equipment and services.</p> <p>Upon activation of the CERP, the Corporate Response Manager directs operation of the Corporate Emergency Response Center (CERC), while the Recovery Manager directs Local Emergency Operations Facility operations and serves as a liaison between the station and CERC.</p> <p>Upon activation of the CERC, the Nuclear News Manager will coordinate public information activities and, after it is activated by the Commonwealth of Virginia, interface with the Joint Information Center (JIC) (Virginia State Police Administrative Headquarters in Chesterfield, Virginia).</p> <p>Official press releases to the media, including briefings by the Chief Technical Spokesperson, are made from the JIC. Following approval by the Corporate Response Manager, press releases are distributed to the media and, when it is activated, to the Local Media Center for distribution to news personnel assembled at that facility. Questions from the general public concerning the event are addressed from the JIC.</p>	<p>activities will be added to NAEP &amp; SEP Sections 3.</p>
4.0	<p>Emergency Conditions</p> <p>The following guidelines describe the criteria used by station personnel in classifying or determining the type of emergency. The types of potential accidents or emergencies can be numerous and vary in magnitude. The classification system is wide-ranged and flexible to respond to this diversity. There are a total of four classifications.</p> <p>The classification system is not intended to include permissible deviations</p>	<p>Content corresponds with NAEP &amp; SEP Sections 4.0.</p>

	during normal operation.	
4.1	Classification System	Content corresponds with NAEP & SEP Sections 4.2.
4.1.1	<p>Notification of Unusual Event</p> <p>This is the first or lowest classification of an emergency. Events are in process or have occurred which indicate a potential degradation of the level of safety of the plant or indicate a security threat to facility protection. No releases of radioactive material requiring offsite response or monitoring are expected unless further degradation of safety systems occurs. Corrective and assessment actions are required. Local and state agency notification occurs to assure that the first step in any response has been carried out. Notification also provides information to public officials and assists in ensuring that offsite communications are effective.</p>	Content corresponds with NAEP & SEP Sections 4.2.
4.1.2	<p>Alert</p> <p>Events are in process or have occurred which involve an actual or potential substantial degradation of the level of safety of the plant or a security event that involves probable life threatening risk to site personnel or damage to site equipment because of intentional malicious dedicated efforts of a hostile act. Any releases are expected to be limited to small fractions of the Environmental Protection Agency Protective Action Guideline exposure levels. The Alert classification assures that emergency response personnel are available if the situation deteriorates or if confirmatory radiation monitoring is required. Information concerning current station conditions is provided to public officials to assist in ensuring that offsite communications are functional.</p>	Content corresponds with NAEP & SEP Sections 4.2.
4.1.3	<p>Site Area Emergency</p> <p>Events are in process or have occurred which involve an actual or likely major failures of plant functions needed for protection of the public or</p>	Content corresponds with NAEP & SEP Sections 4.2.



	security events that result in intentional damage or malicious acts; (1) toward site personnel or equipment that could lead to the likely failure of or; (2) prevents effective access to equipment needed for the protection of the public. Any releases are not expected to result in exposure levels which exceed Environmental Protection Agency Protective Action Guideline exposure levels beyond the site boundary. The Site Area Emergency classification assures that response centers are manned and information for those personnel required for nearsite evacuation assistance is available. Current station conditions are provided to public officials with consultation occurring promptly. The communications system and offsite agency response capabilities are activated.	
4.1.4	<p>General Emergency</p> <p>Events are in process or have occurred which involve actual or imminent substantial core degradation or melting with potential for loss of containment integrity or security events that result in an actual loss of physical control of the facility. Releases can be reasonably expected to exceed Environmental Protection Agency Protective Action Guideline exposure levels offsite for more than the immediate site area. The General Emergency warning initiates predetermined protective actions for the public and provides continuous assessment of information with appropriate radiation monitoring. Current information is provided to officials with appropriate notification to the news media.</p>	Content corresponds with NAEP & SEP Sections 4.2.
4.2	<p>State and Local Government Classification System</p> <p>The Commonwealth of Virginia Emergency Operations Plan (COVEOP), Hazard-Specific Annex #1 – Radiological Emergency Response addresses response to the release of radioactive materials from a fixed nuclear facility. The COVEOP provides protective action decision-making guidance for protecting the health and safety of the public in the affected emergency planning zone, notification and evacuation, if deemed</p>	Content corresponds with NAEP & SEP Sections 4.3.

	<p>necessary. Provisions are in COVEOP for dose assessments within 50 miles of the station for the ingestion of radioactive material via the food pathway.</p> <p>COVEOP's protective actions are based on guidelines appearing in Table 2-1 of EPA-400-R-92-001, Manual of Protective Action Guides and Protective Actions for Nuclear Incidents, for projected doses to the population-at-risk.</p>	
5.0	<p><b>Corporate Emergency Response Structure</b></p> <p>The Corporate Emergency Response Organization (CERO) operates under direction of the Corporate Response Manager. Upon declaration of an Alert, Site Area Emergency or General Emergency at either Surry or North Anna Power Stations, the Corporate Emergency Response Plan (CERP) is activated. In response, the Recovery Manager reports to the Local Emergency Operations Facility (LEOF) and acts as the liaison between the Station Emergency Manager, Corporate Response Manager, and federal, state, and local agencies.</p> <p>The Joint Information Center (JIC) is activated in accordance with the Commonwealth of Virginia Radiological Emergency Response Plan.</p> <p>Other members in the CERP will assist the Corporate Response Manager in responding to the emergency and recovery in their respective areas. Members of each support area have procedures to assemble and provide direction to their staff.</p> <p>If the LEOF is unavailable, the Central Emergency Operations Facility (CEOF) is activated. CEOF staffing is achieved using a transitional organization (composed of corporate emergency response personnel) who may be augmented with other ERO members as necessary. The process for staffing and activating the CEOF is specifically outlined in Corporate Plan Implementing Procedures (CPIPs) designed to provide for</p>	<p>Added NAEP Section 5.2.2 to complement NAEP Section 5.2.1, excluding obsolete references to the back-up central EOF which will be replaced by the consolidated EOF.</p> <p>Replaced SEP Section 5.2.2, which had referenced the CERP, with new content to complement SEP Section 5.2.1, excluding obsolete references to the back-up central EOF which will be replaced by the consolidated EOF.</p>



	re-assignment of LEOF functions, including: protective action recommendations, state/local notifications, and Health Physics functions (dose assessment, control of Offsite Monitoring Teams, and Health Physics Network (HPN) communications).	
5.1	Corporate Emergency Response Center Functional Descriptions	
5.1.1	<p>Corporate Response Manager</p> <p>The Corporate Response Manager assumes overall control and operation of the CERC, and is responsible for allocating the use of company resources to aid the affected station in the mitigation of and recovery from an accident, activating the CERC, ensuring CERC functional positions are adequately staffed to support the affected station, ensuring requests are dispatched efficiently and in a timely manner, directing transition of CERP personnel functions from response to recovery operations upon event termination, and providing management direction to the CERC Executive Liaison.</p>	A Corporate Response Manager position description will be added as NAEP & SEP Sections 5.2.2.1.
5.1.2	<p>Chief Technical Spokesperson</p> <p>The Chief Technical Spokesperson reports to the Corporate Response Manager and is responsible for serving as the official company spokesperson during CERP activation, responding to technical inquiries from the news media, ensuring that statements issued to the media are technically correct and factual, conducting press briefings, reporting changes in emergency status to the media (i.e., classification changes), and providing management direction to the following positions:</p> <p>JIC Dominion Liaison</p> <p>JIC Dominion Technical Advisor</p>	A Chief Technical Spokesperson position description will be added as NAEP & SEP Sections 5.2.2.5 and a Joint Information Center Support Team as NAEP & SEP Sections 5.2.2.14.
5.1.3	<p>Nuclear News Manager</p> <p>The Nuclear News Manager assumes overall control for all media and public information functions. The Nuclear News Manager is responsible</p>	A Nuclear News Manager position description will be added as NAEP & SEP

	<p>for operation of media response activities; ensuring all press releases have been approved by the Corporate Response Manager prior to release; ensuring that all public information representatives from local, state and federal agencies have been notified of impending press releases; providing for the prompt distribution of written statements to the news media; providing non-technical information to the news media; identifying those persons authorized to make official company statements about station status during an emergency; notifying corporate employee communications, government relations and investor relations about the event; ensuring that media monitoring and rumor control personnel are provided updates and that proper information is being disseminated; and providing management direction to the following positions:</p> <p>News Writer  News Room Administrative Support  Information Center Coordinator  LEOF Public Information Technical Advisor</p>	<p>Sections 5.2.2.4, a News Team description as NAEP &amp; SEP Sections 5.2.2.13, and a Joint Information Center Support Team as NAEP &amp; SEP Sections 5.2.2.14. LEOF Public Information Technical Advisor functions will be assumed by the [CERC] Nuclear News Manager.</p>
5.1.4	<p>Plan/Design/Construction Manager</p> <p>The Plan/Design/Construction Manager reports to the Corporate Response Manager and is responsible for providing the direct contact between the company, the Architect/Engineer, the Nuclear Steam Supply System supplier and other equipment suppliers for all design changes and/or needed assistance; directing, coordinating and approving engineering, design and construction activities onsite as needed; coordinating in-house engineering reviews and design efforts; determining the need for construction of new facilities onsite in order to mitigate and/or recover from an accident; establishing which engineering design and construction activities, if any, shall conform to utility formal requirements or be documented by the utility quality assurance program;</p>	<p>The duties of the headquarters support organization position of Plan/Design/Construction Manager will be assigned to the Resource Manager. Its position description will be added as NAEP &amp; SEP Sections 5.2.2.3 and a Resource Team description will be added as NAEP &amp; SEP Sections 5.2.2.12.</p>



	<p>providing administrative and logistical support, including making provisions for establishing a 24-hour shift schedule (as necessary), coordinating additional company support personnel to support needs in the areas of planning, design, engineering, construction, recovery, supply chain, document retrieval, information technology, telecommunications and access control; and providing management direction to the following positions:</p> <p>Facility Coordinator  Logistics Coordinator  Administrative Support</p>	
5.1.5	<p>Technical Support Manager</p> <p>The Technical Support Manager reports to the Corporate Response Manager and is responsible for ensuring station conditions are analyzed and guidance developed (if necessary) for core and system protection, supporting the station by developing procedures to support operations (if necessary), reviewing and assessing radiological controls in effect at the stations, analyzing and coordinating waste management controls and plans, performing dose assessment calculations as back-up to the stations, resolving questions concerning operating license requirements, and providing management direction to the following positions (includes CEOF-specific positions):</p> <p>Reactor Core Analysis (including core damage assessment)  Radiological Support  (CEOF Health Physics Network Communicator)  (CEOF Field Team Radio Operator)  (CEOF State &amp; Local Communicator)  Plant Information/Communications</p>	<p>A Technical Support Manager position description will be added as NAEP &amp; SEP Sections 5.2.2.2, an Operations Support Team added as NAEP &amp; SEP Sections 5.2.2.9 and an Accident Assessment Team description as NAEP &amp; SEP Sections 5.2.2.11.</p>

	<p>Meteorology  Safety Analysis  Operations Support  (CEOF Dose Assessment)</p>	
Figure (Page 5–5)	<p>CORPORATE EMERGENCY RESPONSE CENTER  Minimum Organization For Activation</p>	<p>Added NAEP &amp; SEP Figures 5.5d. (Also added Figures 5.5a-c for TSC, OSC and on-site HP.)</p>
Figure (Page 5–6)	<p>CORPORATE EMERGENCY RESPONSE CENTER  Fully Staffed Organization</p>	<p>Added NAEP &amp; SEP Figures 5.5d.</p>
5.2	Local Emergency Operations Facility Functional Descriptions	
5.2.1	<p>Recovery Manager  The Recovery Manager assumes overall control of LEOF operations and functions. The Recovery Manager is responsible for ensuring that necessary personnel are available to staff functional positions within the LEOF; directing, supervising, and coordinating LEOF activities; assessing and providing protective action recommendations to offsite authorities; notifying state and local governments of the emergency status and any changes in a timely manner; providing prompt and accurate information to the CERC; working with state and federal agency representatives located in the LEOF; ensuring that prompt and accurate dose assessments are performed; working with the Station Emergency Manager to determine the need to escalate or de-escalate the emergency classification; and arranging for special assistance or services requested by the affected station.</p>	<p>The role of the Recovery Manager will be distributed to the Corporate Response Manager and Technical Support Manager. These positions will be described in NAEP &amp; SEP Sections 5.2.2.1 and 5.2.2.2.</p>
5.2.2	<p>Radiological Assessment Coordinator  The Radiological Assessment Coordinator (RAC) reports to the Recovery</p>	<p>A Radiological Assessment Coordinator position</p>



	<p>Manager and is responsible for dose assessment staffing and operations; directing performance of emergency dose calculations using available computer equipment; directing field team radio operator activities; dispatching Offsite Field Team members, as necessary; tracking the dose of Offsite Field Team members; projecting offsite doses; obtaining weather forecasts, as necessary; comparing offsite survey data with offsite dose projections; formulating protective action recommendations (PARs); briefing Recovery Manager on radiological conditions and PARs; tracking the plume; ensuring LEOF habitability; ensuring LEOF heating, ventilation and air conditioning is functioning properly and is in the correct mode of operation; and identifying any supplemental resources needed.</p>	<p>description will be added as NAEP &amp; SEP Sections 5.2.2.10 as appropriate (e.g., excluding responsibility for ensuring LEOF habitability due to the location of the proposed CERC).</p>
5.2.3	<p><b>Field Team Radio Operator</b>  The Field Team Radio Operator reports to the RAC and is responsible for ensuring the plant radio is properly used, maintaining communications with the offsite field teams, transmitting and receiving information to and from the offsite field teams, ensuring that information which is transmitted and/or received is correct, providing direction to the offsite field teams, conveying the RAC's instructions to the field teams, providing plume direction information to the field teams(s), and assisting in correlation of field measured doses to calculated projected doses.</p>	<p>The role of the Field Team Radio Operator will be fulfilled by the Accident Assessment Team in the proposed CERC (see NAEP &amp; SEP Sections 5.2.2.11).</p>
5.2.4	<p><b>Offsite Field Teams</b>  The responsibilities of the Offsite Field Teams are delineated at section 5.2.1.18 of the North Anna and Surry Emergency Plans.</p>	<p>The reference to NAEP &amp; SEP Sections 5.2.1.18 will be incorporated into the Accident Assessment Team description in NAEP &amp; SEP Sections 5.2.2.11.</p>
5.2.5	<p><b>Dose Assessment Staff</b>  The Dose Assessment Staff reports to the RAC and is responsible for</p>	<p>The role of the LEOF Dose Assessment Staff will be</p>

	<p>setting up the dose assessment computer and checking proper operation, contacting the Radiological Assessment Director in the Technical Support Center (TSC) (as necessary), entering radiological and meteorological information into the computer and running dose projections, providing continuous dose projections and utilizing actual field measurement numbers and comparing to dose projections.</p>	<p>fulfilled by the Accident Assessment Team in the proposed CERC (see NAEP &amp; SEP Sections 5.2.2.11).</p>
5.2.6	<p><b>HPN Communicator</b>  The HPN Communicator reports to the RAC and is responsible for establishing and maintaining contact with the Nuclear Regulatory Commission (NRC) on the HPN, transmitting correct and accurate information regarding dose projections and offsite field measurements to the NRC, and staying updated on radiological conditions in the plant, dose projections and offsite field measurements.</p>	<p>The role of the LEOF HPN Communicator will be fulfilled by the Accident Assessment Team in the proposed CERC (see NAEP &amp; SEP Sections 5.2.2.11).</p>
5.2.7	<p><b>Emergency Plan Advisor</b>  The Emergency Plan Advisor reports to the Recovery Manager and is responsible for advising the Recovery Manager on emergency action levels, emergency classifications, protective action recommendations and any questions regarding the Emergency Plan; and coordinating with the Operations Support Coordinator on emergency action levels.</p>	<p>An Emergency Plan Advisor position description will be added as NAEP &amp; SEP Sections 5.2.2.7.</p>
5.2.8	<p><b>Operations Support Coordinator</b>  The Operations Support Coordinator reports to the Recovery Manager and is responsible for advising the Recovery Manager on unit conditions and methods being implemented to mitigate the incident and progress, coordinating with the Emergency Plan Advisor on present and potential emergency action levels and protective action recommendations, assisting in the development of the Recovery Plan after incident mitigation, coordinating with the Recovery Manager in interfacing with the NRC representative in the LEOF (if applicable), monitoring plant</p>	<p>An Operations Support Coordinator position description will be added as NAEP &amp; SEP Sections 5.2.2.8.</p>



	conditions using the Plant Computer System (PCS) and ensuring the staffing of and providing direction to LEOF Communicator and State/Local Communicator.	
5.2.9	<p><b>LEOF Services Coordinator</b></p> <p>The LEOF Services Coordinator reports to the Recovery Manager and is responsible for tracking and staffing of LEOF personnel, providing scheduling of relief shifts (as necessary), controlling procurement and ordering supplies, obtaining procedures from library or document control (as necessary), checking telecopiers functional, coordinating any necessary travel arrangements with CERC administrative personnel, ensuring food and sanitation facilities are available for LEOF personnel, distributing information/instructional packets in the LEOF (if necessary) and managing activities performed by the LEOF Administrative Coordinators.</p>	<p>The role of the LEOF Services Coordinator is subsumed by the Resource Manager and Resource Team which will be described in NAEP &amp; SEP Sections 5.2.2.3 and 5.2.2.12.</p>
5.2.10	<p><b>LEOF Telecommunications Coordinator</b></p> <p>The LEOF Telecommunications Coordinator reports to the Recovery Manager and is responsible for maintaining the functionality of the Communication systems within the emergency response facilities (ERFs), coordinating the installation of additional communications as necessary, implementing system repairs as necessary, and monitoring siren control system status.</p>	<p>The role of the LEOF Telecommunications Coordinator is addressed by NAEP &amp; SEP Sections 5.2.1.12 except for the monitoring of siren control system status which will be addressed by the Emergency Plan Advisor position which will be described in NAEP &amp; SEP Sections 5.2.2.7.</p>

5.2.11	<p><b>LEOF Public Information Technical Advisor</b></p> <p>The LEOF Public Information Technical Advisor reports to the CERC Nuclear News Manager and is responsible for reporting directly to the appropriate LEOF, ensuring the Nuclear News Manager receives the latest technical information regarding the incident, functioning as liaison between the LEOF and Nuclear News Manager with regard to accuracy/approval of press releases, ensuring that the Recovery Manager documents (by initialing) the technical review of potential news, and ensuring that Federal, State and local personnel in the LEOF understand technical aspects of information (press releases) being transmitted to the Nuclear News Manager if deemed necessary.</p>	<p>The role of the LEOF Public Information Technical Advisor will not be needed because the Nuclear News Manager and News Team can interact directly with the CERC staff.</p>
5.2.12	<p><b>LEOF Plant Information Coordinator</b></p> <p>The LEOF Plant Information Coordinator reports to the Recovery Manager and is responsible for providing assistance to LEOF personnel regarding use of the PCS and coordinating corrective actions should problems with the PCS arise.</p>	<p>The role of the LEOF Plant Information Coordinator will not be needed because the Operations Support Team will fulfill this role in the proposed CERC (see NAEP &amp; SEP Sections 5.2.2.9).</p>
Figure (Page 5–10)	<p><b>LOCAL EMERGENCY OPERATIONS FACILITY</b></p> <p>Minimum Organization For Activation</p>	<p>Added NAEP &amp; SEP Figures 5.5d.</p>
Figure (Page 5–11)	<p><b>LOCAL EMERGENCY OPERATIONS FACILITY</b></p> <p>Fully Staffed Organization</p>	<p>Added NAEP &amp; SEP Figures 5.5d.</p>
5.3	<p><b>Augmentation of Station Organization</b></p> <p>The Station Emergency Manager has the authority to request additional support at the Station, Technical Support Center or Operational Support Center. These requirements will be coordinated through the Recovery</p>	<p>Provisions for additional support are addressed in NAEP &amp; SEP Sections 5.3.</p>



	Manager and the LEOF staff.	
5.4	<p><b>Coordination With Participating Government Agencies</b></p> <p>CERC personnel coordinate support activities with federal and state agencies responding to the emergency and/or recovery. The Corporate Response Manager may also assemble NRC, state, vendor, and/or consultant support at the CERC. Assistance may be sought from other nuclear utilities, if needed. If requested by the State EOC, a Company technical representative will be dispatched to provide technical interpretation or clarification of data transmitted to that office. (This individual's responsibilities do not include making statements to the media)</p>	Added paragraph to NAEP & SEP Sections 5.4.
6.0	<p><b>Emergency Response Facilities (ERFs)</b></p> <p>Special emergency facilities are staffed upon declaration of an Alert, Site Area Emergency, or General Emergency classification. They include the Control Room, Technical Support Center, Operational Support Center, Local Emergency Operations Facility, Corporate Emergency Response Center, and Central Emergency Operations Facility. A Joint Information Center is activated in accordance with the Commonwealth of Virginia Radiological Emergency Response Plan. A Local Media Center may be activated when conditions warrant. The inter-relationship between the various ERFs is outlined in this section of the Plan. These facilities are designed to be a cohesive structure, each providing a role in the emergency.</p>	Content corresponds with NAEP & SEP Sections 7.0.
6.1	<p><b>Control Room (CR)</b></p> <p>This is the main control center at the station and any emergency situation is immediately dealt within the CR (classification, assessment, etc.)</p>	Content corresponds with NAEP & SEP Sections 7.1.1.

6.2	<p><b>Technical Support Center (TSC)</b></p> <p>The TSC is staffed at an Alert or greater emergency classification to assist the CR Staff and to be the focal point of the onsite emergency organization. The TSC is in direct contact with the LEOF and CR. It serves to support in-station functions and has the necessary instrumentation and documents to permit emergency response personnel to make recommendations and advise the Station Emergency Manager.</p>	Content corresponds with NAEP & SEP Sections 7.1.3.
6.3	<p><b>Operational Support Center (OSC)</b></p> <p>This is an onsite ERF that is a staging area for emergency response personnel and is a resource for use by the TSC management.</p>	Content corresponds with NAEP & SEP Sections 7.1.2.
6.4	<p><b>Local Emergency Operation Facility (LEOF)</b></p> <p>The North Anna LEOF Building and the Surry LEOF Building serve as the LEOF and Recovery Center. The Recovery Manager and the LEOF staff will coordinate with federal and state and local officials at this center. Field data will be gathered for analysis and provided to the LEOF. The State Mobile Lab may also support this facility. This data will be evaluated to provide protective action recommendations to the state and locals. In addition, the LEOF will provide periodic updates of emergency information to the state and local government officials. Upon event termination, the Recovery Manager and staff will develop a recovery plan to deal with the post emergency situation.</p>	Proposed NAEP & SEP Sections 7.1.4 describe the consolidated EOF (proposed CERC).
6.5	<p><b>Corporate Emergency Response Center (CERC)</b></p> <p>This support facility is located on the third floor of the Innsbrook Technical Center. The function of the CERC is to serve as the focal point of the inter-company effort to support the affected station, to manage the recovery operations, and to disseminate all information concerning the emergency.</p>	Proposed NAEP & SEP Sections 7.1.4 describe the consolidated EOF (proposed CERC).

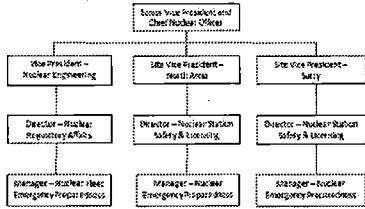


6.6	<p><b>Central Emergency Operations Facility (CEOF)</b></p> <p>The CEOF is collocated with the CERC on the third floor of the Innsbrook Technical Center. If the LEOF is not functional or has to be evacuated, the CEOF will be activated using a transitional staff comprised of corporate emergency response personnel. Other emergency response organization members may be called upon to augment the transitional staff that initially activates the CEOF.</p>	<p>Proposed NAEP &amp; SEP</p> <p>Sections 7.1.4 describe the consolidated EOF (proposed CERC).</p>
6.7	<p><b>Joint Information Center (JIC)</b></p> <p>The Joint Information Center (JIC) is located at the Virginia State Police Administrative Headquarters in Chesterfield, Virginia. Official company statements to the media will be made from this facility, by the Chief Technical Spokesperson.</p>	<p>Renumbered NAEP &amp; SEP</p> <p>Sections 7.1.5 describe the Joint Information Center.</p>
6.8	<p><b>Local Media Center (LMC)</b></p> <p>A Local Media Center will be activated at the Station Nuclear Information Center when conditions warrant. When activated, members of the media can be briefed at this facility by federal, state and/or company representatives in-person or via telephone.</p>	<p>Renumbered NAEP &amp; SEP</p> <p>Sections 7.1.5 describes the Local Media Center in its Joint Information Center description.</p>
Figure (Page 6–4)	<p><b>CORPORATE EMERGENCY RESPONSE CENTER</b></p> <p><b>INNSBROOK TECHNICAL CENTER, THIRD FLOOR - NORTHEAST</b></p>	<p>NAEP and SEP do not contain images of station emergency response facility floorplans and no requirement for relocating this image has been identified.</p>
Figure (Page 6–5)	<p><b>NORTH ANNA AND SURRY POWER STATION</b></p> <p><b>LOCAL EMERGENCY OPERATIONS FACILITY</b></p>	<p>LEOF figure no longer needed because the facility will be replaced by the consolidated EOF.</p>

Figure (Page 6–6)	NORTH ANNA AND SURRY POWER STATION LOCAL MEDIA CENTER (NUCLEAR INFORMATION CENTER)	NAEP and SEP do not contain images of station emergency response facility floorplans and no requirement for relocating this image has been identified.
Figure (Page 6–7)	MAP TO SURRY POWER STATION	SEP Figure 6.6, Remote Assembly Areas, provides a similar image.
Figure (Page 6–8)	MAP TO NORTH ANNA POWER STATION	NAEP Figure 6.6, Remote Assembly Areas provides a similar image.
7.0	<p>Recovery</p> <p>A recovery plan is formulated upon event termination, and a recovery organization is established to accommodate the specific objectives outlined in the plan. The Recovery Manager, who is responsible for implementation and administration of the recovery plan and organization, may direct recovery operations from the Local Emergency Operations Facility, or relocate to another facility better suited to manage the recovery effort.</p>	Added CERP-specific content to NAEP & SEP Sections 9.0.
7.1	<p>Recovery Plan</p> <p>The recovery plan is designed to expedite station damage assessment, accommodate requests for assistance in offsite recovery activities by state and local agencies (as resources allow), and initiate efforts to return the station to an operational status.</p> <p>Normal practices will be followed to the furthest extent possible with regard to maintenance, repair, modification, decontamination, and radiation exposure control activities. Recovery plan objectives and</p>	Added CERP-specific content to NAEP & SEP Sections 9.1.



	<p>associated schedules will be periodically evaluated and modified, if necessary, to accommodate changing circumstances. Provisions to review, prioritize, coordinate and proceduralize recovery activities (e.g., repair, maintenance, modification, and decontamination) will also be addressed.</p> <p>Specific instructions related to development of recovery plans and procedures are maintained in an Emergency Plan Implementing Procedure (EPIP) designed for this purpose.</p>	
7.2	<p><b>Recovery Organization</b></p> <p>Figure 7.1, Example Recovery Organization, is representative of a typical organization that may be designated by the Recovery Manager. Responsibilities of the recovery organization include defining recovery objectives, developing a plan to accomplish these objectives, establishing controls and anticipating potential complications, monitoring the recovery effort and adjusting the plan accordingly, and evaluating accomplishments against the designated objectives.</p> <p>Under the direction of the Recovery Manager, the recovery organization addresses planning and coordination of the recovery effort (in cooperation with governmental officials, when required). Federal and state agencies may augment the recovery organization and participate in establishing recovery objectives.</p>	Added CERP-specific content to NAEP & SEP Sections 9.0 and 9.1.
Figure (Page 7–3)	<p><b>FIGURE 7.1</b></p> <p><b>EXAMPLE RECOVERY ORGANIZATION</b></p>	Relocated figure to NAEP & SEP Sections 9 as Figure 9.1.
8.0	<p><b>Maintaining Emergency Preparedness</b></p> <p>The organizational structure for maintaining emergency preparedness is shown in the figure below:</p>	The normal organization for maintaining emergency preparedness is described in NAEP & SEP Sections 8.1

	 <p>The Manager Nuclear Fleet Emergency Preparedness (NFEP) is responsible for maintaining this plan and its implementing procedures, and implementing provisions of this plan at locations other than the Local Emergency Operations Facility (LEOF) and Local Media Center (LMC). The Managers Nuclear Emergency Preparedness (NEP) are responsible for implementing provisions of this plan at the LEOF and LMC.</p> <p>The Corporate Emergency Response Plan (CERP) and the Corporate Plan Implementing Procedures (CPIPs) are reviewed annually. The results of this review are evaluated by the Manager NFEP. Proposed revisions to the CERP and/or CPIPs are submitted to the Manager NFEP for review and implementation. Revisions, when implemented, are distributed in accordance with a "Controlled Distribution" list in order to maintain copies up-to-date.</p>	<p>NAEP &amp; SEP Sections 8.2 address annual review of emergency plans and their implementing procedures, and revisions thereof.</p>
8.1	<p>Dissemination of Public Information</p> <p>The Company will disseminate emergency preparedness information to the public within a ten-mile radius of North Anna and Surry Power Stations. The information, distributed on an annual basis, will include:</p> <ul style="list-style-type: none"> <li>Information regarding how the public will be notified as well as expected actions during an emergency;</li> <li>Educational information on radiation;</li> <li>Contact for additional information;</li> <li>Protective measures;</li> </ul>	<p>NAEP &amp; SEP Sections 8.8 address informing the public.</p>



	<p>Needs of the handicapped.</p> <p>The Company will coordinate efforts with state and local authorities to ensure the public (permanent, transient and handicapped residents) is informed by publications which may include telephone books, calendars, newspaper advertisements, postings and public information brochures.</p> <p>The Company will conduct programs on an annual basis to inform and acquaint the media with the emergency plans, the effects of radiation and the points of contact for release of public information in an emergency.</p>	
8.2	Organizational Preparedness	The normal organization for maintaining emergency preparedness is described in NAEP & SEP Sections 8.1.
8.2.1	<p>Training Requirements</p> <p>Annual training for Corporate Emergency Response Organization members regarding implementation of the CERP and functional responsibilities is conducted.</p>	NAEP & SEP Sections 8.3 will be revised to address station and corporate ERO training.
8.2.2	<p>Program Maintenance</p> <p>The Manager NFEP coordinates shared NEP program elements for North Anna and Surry. This includes: Corporate/Station liaison, outside agency interface, and public information and education. The North Anna and Surry Managers NEP are responsible for the development and conduct of emergency drills and exercises, and station early warning systems. The Manager NFEP and Managers NEP are responsible for regulatory adherence, NEP staff administration, communications, and training at their respective locations.</p> <p>Corporate/Station liaison activities include development and coordination of activities, as outlined in the CERP, which establish the supporting mechanism for corporate and station emergency preparedness; providing</p>	The normal organization for maintaining emergency preparedness is described in NAEP & SEP Sections 8.1.

	<p>guidance and assistance to corporate and station management and staff on matters relating to emergency preparedness; and providing assistance in conducting annual emergency exercises.</p> <p>Regulatory adherence ensures that the emergency preparedness program meets current regulatory requirements and that Company efforts to meet these requirements are compatible with planning bases established by federal, state and local government organizations. Liaison is maintained with federal, state, and local government agencies, (Nuclear Regulatory Commission (NRC), Federal Emergency Management Agency, Virginia Department of Emergency Management and local county and city jurisdictions) concerning matters which mutually relate to emergency planning and preparedness for nuclear power stations. Letters of agreement between the company and supporting government agencies and volunteer organizations are reviewed and negotiated on a biennial frequency.</p> <p>The NEP staff develops and maintains the CERP to ensure that provisions for corporate support during a nuclear power station emergency are kept up-to-date. Staff members plan, coordinate and conduct emergency exercises, and ensure that the exercise program conforms to standards as prescribed by the NRC. Staff members serve as liaison to other corporate departments which provide support for emergency response functions; develop and maintaining procedures for alerting, notifying and activating corporate emergency response personnel; and review proposed station emergency plan and implementing procedure revisions for consistency, regulatory adherence and CERP interface prior to implementation.</p> <p>Responsibilities in the area of communications include establishing and maintaining reliable primary and back-up means of communications for licensee, state and local response organizations; evaluating functionality</p>	
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	<p>of emergency communication systems; coordinating modifications to CERP related communications systems and equipment, as necessary, for emergency response facilities at the Innsbrook Technical Center; and ensuring functionality of the Early Warning System (EWS).</p> <p>Public information and education responsibilities include coordinating the development and review of publications which provide information to the public in the plume exposure pathway emergency planning zone as prescribed by NUREG-0654, and establishing means for the dissemination of public information by use of periodic mailings, specific press releases, and/or telephone directory advertisements.</p> <p>Training responsibilities range from identifying training needs which support emergency preparedness to ensuring emergency response training meets the guidance of NUREG-0654. Further details concerning emergency response training are contained in Section 9 of the CERP.</p>	
8.2.3	<p><b>Equipment and Supplies</b></p> <p>Inventory, inspection and functionality checks of emergency equipment/instruments in the CERC and Joint Information Center is required once each calendar quarter and after each use. These checks are performed in accordance with governing administrative procedures.</p>	<p>References to required LEOF communications equipment checks detailed in NAEP &amp; SEP Sections 8.7.d will be revised to address the CERC in lieu of the LEOF.</p>
9.0	<p><b>Maintaining Emergency Preparedness Policy Statement</b></p> <p>It is the company's policy to vigorously support an emergency preparedness program for our nuclear power stations. This goal is achieved, in part, through the selection, retention and training of qualified individuals to staff emergency response positions. Emergency Response Organization (ERO) personnel are assigned positions (i.e., added, moved and deleted, as necessary) in accordance with criteria specified the governing administrative procedures.</p>	<p>The format of the NAEP &amp; SEP does not include a "Policy Statement" section. NAEP &amp; SEP Sections 8.0 provide the necessary information.</p>

9.1	<p><b>Training Program</b></p> <p>Personnel assigned to the ERO are provided initial and continuing training in accordance with the applicable training program guide (i.e., Innsbrook, North Anna and Surry Nuclear Emergency Responder Training Program Guides (TR-IN-TPG-2400, TR-NA-TPG-2400 and TR-SU-TPG-2400, respectively) or TR-AA-TPG-2400, Emergency Response Organization (ERO) Training Program (when issued)). The training programs are designed to achieve the following purposes:</p> <p>Ensure qualified individuals are selected to participate as ERO members;</p> <p>Maintain an appropriate level of individual qualification and experience;</p> <p>Provide responders with the skills and knowledge necessary to perform assigned duties in a competent manner.</p> <p>Table 9.1 provides a listing of select emergency response positions along with an overview of the training provided.</p>	<p>References to TR-NA-TPG-2400 in the NAEP Section 8.3 and TR-SU-TPG-2400 in the SEP Section 8.3 will be updated to reference TR-AA-TPG-2400 in intermediate revisions unrelated to the proposed license amendment. The reference to CERP Table 9.1 will be superseded by the NAEP &amp; SEP Sections 8.3.3 reference to NAEP &amp; SEP Tables 8.1.</p>
9.1.1	<p><b>Maintaining Emergency Preparedness Training Program</b></p> <p>The Manager Nuclear Fleet Emergency Preparedness (NFEP) and Managers Nuclear Emergency Preparedness (NEP) are responsible for developing and maintaining training programs that meet the requirements of this plan. Program requirements for initial training of newly assigned personnel and for continuing training are specified in the program guide. Nuclear Training is responsible for developing and scheduling training that meets Emergency Plan requirements for those departments receiving annual Emergency Preparedness training through other continuing training programs.</p>	<p>NAEP &amp; SEP Sections 8.3 will be revised to address station and corporate ERO training.</p>
9.1.2	<p><b>Training Records</b></p> <p>Records documenting ERO training will be maintained by Records Management. Training records are subject to examination by company representatives assigned auditing and oversight responsibilities, and by</p>	<p>NAEP &amp; SEP Sections 8.3.6 address training records.</p>



	the Nuclear Regulatory Commission.	
Table 9.1		NAEP & SEP Tables 8.1 will be expanded to describe the scope of training for CERP positions.

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**50-280/281**  
**52-017**  
**72-2/16/55/56**

**Attachment 3**

**Additional NAPS and SPS Emergency Plan Changes Requiring NRC Approval**

## 1.0 INTRODUCTION

Dominion Energy Virginia proposes additional changes to the North Anna Power Station (NAPS) and Surry Power Station (SPS) emergency plans. It has been determined prior Nuclear Regulatory Commission (NRC) approval is required in accordance with 10 CFR 50.54(q)(4) because the proposed changes are considered a reduction in effectiveness. The approved emergency plans are the plans referenced in letters dated May 10, 1983 and May 13, 1983, which documented that NUREG-0737 Item III.A.2.1, Emergency Preparedness, Upgrade Emergency Plans to Appendix E, 10 CFR 50, was complete for NAPS and SPS, respectively. These emergency plans were dated July 22, 1982 and July 29, 1982, respectively. The current emergency plans, NAPS Emergency Plan Revision 44 and SPS Emergency Plan Revision 63, are dated February 2, 2017 and March 16, 2017, respectively. Dominion Energy Virginia has concluded that following implementation of the proposed changes, the NAPS and SPS emergency plans will continue to meet the requirements of Appendix E and the planning standards of 10 CFR 50.47(b), and will continue to provide reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency.

The proposed changes consist of the following six areas of the NAPS and SPS emergency plans:

- Clarification of references to emergency response organization (ERO) augmentation and emergency response facility (ERF) activation goals.
- Elimination of ringdown phones between the EOF and risk jurisdictions capable of activating the site-specific Early Warning System (EWS) siren systems.
- Replacement of references to "equivalency credit" for required training sessions with reference to administrative processes for training exemptions and equivalent qualifications.
- Establishment of the station Facility Safety Review Committee (FSRC) as the approval authority for emergency plan revisions and the station Manager Nuclear Emergency Preparedness (NEP) as the approval authority for emergency plan implementing procedure (EPIP) revisions.
- Replacement of reference to letters of agreement being maintained in an emergency plan appendix with references to these letters being maintained separately.
- Expansion of the time period for, at least once in every eight-year exercise cycle, initiating a drill or exercise from between 6:00 p.m. and 4:00 a.m. to starting between 6:00 p.m. and 4:00 a.m. on a weekday or during a weekend.

Details regarding each of the above proposed changes are provided in Sections 2.1 through 2.6 below.



## 2.0 DESCRIPTION

### 2.1 EMERGENCY RESPONSE ORGANIZATION AUGMENTATION AND EMERGENCY RESPONSE FACILITY ACTIVATION GOALS

Dominion Energy Virginia proposes to clarify references to emergency response organization (ERO) augmentation and emergency response facility (ERF) activation goals. The NAPS and SPS emergency plans state these goals as approximations, do not define the time from which achieving these goals is measured, and do not define ERF activation. In addition, there is an inconsistency between the NAPS and SPS emergency plan activation goals for the existing local emergency operations facilities (EOFs), and augmentation goals for select EOF and headquarters support positions.

Generic Letter 80-22, Transmittal of NUREG-0654, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," dated March 10, 1980, provided interim guidance and updated acceptance criteria to applicants and licensees. Table B-1, Minimum Staffing Requirements for NRC Licensees for Nuclear Power Plant Emergencies, listed major functional areas, major tasks, and position titles or expertise, with numbers in columns headed "On Shift" and "Additions Within 30 Minutes." The associated evaluation criteria referred to availability of capabilities and staffing within one-half hour following the declaration of the emergency class. When NUREG-0654/FEMA-REP-1, Revision 1 was issued in October 1980, "one-half hour following" was replaced by "a short period after" and referenced capability as indicated in Table B-1. This table contained a column headed "Capability for Additions" with "30 min" and "60 min" sub-columns within that column.

Proposed NAPS Emergency Plan dated May 1, 1980, Table 5.1, Minimum Shift Manning Requirements, provided a table listing major functional areas, major tasks, and position titles or expertise, with numbers in columns headed "On Shift" and "Additions Within 60 Minutes." Headings in proposed page changes dated June 25, 1980 and July 24, 1980 were identical.

Proposed SPS Emergency Plan dated May 1, 1980, Table 5.1, Minimum Shift Manning Requirements, provided a table listing major functional areas, major tasks, and position titles or expertise, with numbers in columns headed "On Shift" and "Additions Within 60 Minutes After Notification."

The post-EP Appraisal NAPS Emergency Plan dated July 22, 1982 (Revision 0), Table 5.1 listed major functional areas, location, major tasks, and emergency titles, with numbers in columns headed "On Shift" and "Additional Within Approx." over "30 Min." and "60 Min." columns.

Section 5, Organizational Control of Emergencies, of the post-EP Appraisal SPS Emergency Plan dated July 29, 1982 (Revision 0), was revised on August 2, 1982 (Revision 1). This table listed major functional areas, major tasks, and position titles,

with numbers in columns headed "On Shift" and "Additions Within 60 Minutes After Notification." SPS Emergency Plan dated September 17, 1982 (Revision 3) replaced the column "Additions Within 60 Minutes After Notification" with a "Capability For Additions" heading over "≈30 Min." and "≈60 Min." columns.

Although NRC's January 13, 1984 letter that responded to letters dated April 8, 1982, December 6, 1982, April 14, 1983 and May 6, 1983 regarding the design of the EOFs for NAPS and SPS accepted "1 1/2 hours" as the EOF activation goal, the times stated in NAPS Emergency Plan Table 5.2, Emergency and Recovery Corporate Response Required for Nuclear Station Emergencies, for the local EOF Recovery Manager and Radiological Assessment Coordinator positions was 1 hour. The corresponding table in the SPS Emergency Plan listed "1 1/2 hours" for these positions.

By letter dated November 30, 1988, a request for approval was submitted to revise NAPS Emergency Plan, Table 5.1 to align response times for other positions with the "approximately one hour after activation" TSC activation goal described in NUREG-0737, Supplement 1, and Table 5.2 to align position-specific local EOF response times with the EOF activation goal NRC accepted in its January 13, 1984 letter. A similar request for prior approval to revise SPS Emergency Plan, Table 5.1 was submitted on June 30, 1989. NRC letter dated September 8, 1989 indicated that the requested change did not provide an equivalent alternative to recommended augmentation times. Consequently, the previous requests were superseded by letter dated January 17, 1990, which proposed adjusting the TSC Core/Thermal Hydraulic Engineer augmentation time from approximately 30 minutes to approximately 60 minutes, primarily due to the capabilities of the on-shift Shift Technical Advisor. Letter dated May 18, 1990, provided NRC's review and conclusion that the proposed changes were consistent with the provisions of 10 CFR 50.47(b), Appendix E, and Supplement 1 to NUREG-0737.

By letter dated February 18, 1994, a request for approval was submitted to revise the NAPS and SPS Emergency Plan, Table 5.1 to address on-shift staffing and delete Table 5.2. The proposed alternative to position-specific augmentation was facility / function-activation including the positions listed in Tables 5.1 and 5.2, and other positions considered necessary for emergency response facility functionality. The proposed facility activation goals were within approximately 60 minutes, except for the Surry local EOF with a proposed facility activation goal of within approximately 90 minutes. By letter dated July 6, 1995, NRC indicated that the requested change would be considered a decrease in effectiveness. A July 18, 1995 NRC summary of a July 11, 1995 meeting on this subject documented a new package would be submitted and that commitments for emergency response facility activation goals would be added to the respective site emergency plan. The revised emergency plan submittal, which included adding facility activation goals of approximately 60 minutes (approximately 90 minutes for the Surry local EOF) and changing the Table 5.1 column headings from "Additional Within Approximately 30 Min." to "Additional Within Approximately 45 Min." was

submitted by letter dated September 6, 1995. NRC letters, with associated safety evaluation reports, dated December 12, 1995 for NAPS and December 13, 1995 for SPS, provided NRC's approval of the proposed change and concluded that the extension of response times for selected positions was reasonable and that the NAPS and SPS emergency plans continued to meet the standard required by 10 CFR 50.47(b). NAPS Emergency Plan Revision 18 (January 3, 1996) and SPS Emergency Plan Revision 40 (January 1, 1996) implemented the approved changes.

The proposed change is to specify that the start time for augmentation is the declaration of an Alert or higher emergency class (unless special circumstances apply), clarify references to approximate times by rounding-up approximations to the next quarter hour (e.g., approximately 60 minutes becomes 75 minutes), align NAPS and SPS ERFs activation goals with the proposed Corporate Emergency Response Center (CERC) activation goal, and define ERF activation as the assembly of required positions in or under the operational control of the designated ERF lead and their declaring the facility activated. Special circumstances include those where the movement of emergency responders could place them at risk, e.g., security conditions, severe weather, hazardous environments.

The NAPS and SPS on-shift staffing analyses (OSAs) showed that, for the event sequences analyzed, on-shift responders can appropriately respond to an emergency without an augmented staff for a time period of up to 90 minutes. Thus, the on-shift staff can analyze the conditions and declare the appropriate emergency class within the 15 minutes required by 10 CFR 50, Appendix E, Section IV.C.2, notify the Commonwealth of Virginia Emergency Operations Center (EOC) and site-specific risk-jurisdiction 911 Centers, and respond to the event for 75 minutes after event declaration.

## 2.2 ELIMINATION OF COUNTY RINGDOWN PHONES

Dominion Energy Virginia proposes to eliminate automatic ringdown (ARD) phones between the EOF and risk jurisdictions capable of activating the site-specific Early Warning System (EWS) siren systems.

The following are excerpts from a letter, subject: NUREG-0696, Emergency Response Facilities, North Anna and Surry Power Stations, dated April 8, 1982:

"At the Surry Local EOF, communications will also include ringdown phones to James City County and Surry County."

"At the North Anna Local EOF, communications will also include ringdown phones to Louisa and Spotsylvania Counties."

A revised submittal, subject: Generic Letter 82-33, Emergency Operations Facilities, North Anna and Surry Power Stations, dated May 6, 1983, replying to Generic Letter 82-33 (Supplement 1 to NUREG-0737 - Emergency Response Capability) Section



8.4.1.f reaffirmed that the communications links described above would be provided. NRC letter dated January 13, 1984 replied to these submittals and indicated that a post-implementation appraisal would be conducted after the emergency response facilities were completed.

SPS Emergency Plan dated February 18, 1988 (unnumbered, Revision 31) Section 7.2.1, Communications Systems Within the Station, and Figure 7.4, Communications Links, identified that the local EOF had ARDs to several locations, including Surry County and James City County. The NAPS Emergency Plan dated October 2, 1989 (Revision 12) added Table 7.1, ERF [Emergency Response Facility] Communications, which identified that the local EOF had ARDs to several locations, including Louisa County and Spotsylvania County. SPS Emergency Plan Revision 33 (effective February 21, 1991) relocated the contents of Section 7.2.1 to a new Table 7.1, ERF Communications. The current NAPS and SPS emergency plans (NAPS Emergency Plan Revision 44, effective February 2, 2017, and SPS Emergency Plan (Revision 63, effective March 16, 2017) continue to identify that there are ARDs from the respective site's local EOF to their associated counties in Table 7.1. Figure 7.3, Communications Links, in SPS Emergency Plan Revision 63 also identifies this ARD capability for SPS.

The difference between these counties and other risk jurisdictions is that they are capable of activating their site-specific EWS siren systems (the Commonwealth of Virginia Emergency Operations Center is capable of activating both the Surry EWS sirens and the North Anna EWS sirens). As described in SPS and NAPS Emergency Plan, Sections 6.2, Protective Actions, recommendations for offsite protective actions are made to the State [Commonwealth of Virginia]. Commonwealth of Virginia protocols provide for consultation with risk jurisdictions prior to the issuance of protective action decisions by the Governor. No records have been found indicating that these county ARDs have ever been used during any drill, exercise or actual event, although functionality has been checked each quarter for more than 30 years.

## 2.3 TRAINING EXEMPTION/EQUIVALENT QUALIFICATION

Dominion Energy Virginia proposes to replace references to "equivalency credit" for required training sessions with reference to administrative processes for training exemptions and equivalent qualifications. The NAPS and SPS emergency plans identify the approval authority for awarding equivalency credit as the Director Nuclear Emergency Preparedness and the Site Vice President.

These provisions were not described in the approved emergency plans (NAPS Revision 0, July 22, 1982 and unnumbered SPS Revision 0, July 29, 1982). These provisions were added to the NAPS and SPS emergency plans in Revision 12 (October 2, 1989) and Revision 34 (March 10, 1992), respectively. When added, the approval authority was vested in the Superintendent of Nuclear Training and the Station Manager. These approval authorities were selected at that time because emergency planning management was assigned to the Corporate Emergency Planning department which

interfaced with on-site coordinators in the station organizations. These positions were identified as appropriate because the ERO was populated by employees across multiple departments.

The Superintendent of Nuclear Training was changed to the Director Nuclear Emergency Preparedness when the Corporate Emergency Preparedness Department assumed line-management responsibility for on-site coordination activities, including responsibility for training in 1996. This change was reflected in NAPS Emergency Plan Revision 19 (December 11, 1996) and SPS Emergency Plan Revision 41 (December 17, 1996). The Station Manager was changed to the Site Vice President in NAPS Emergency Plan Revision 22 (July 17, 1998) and SPS Emergency Plan Revision 43 (August 12, 1998) pursuant to Technical Specification Amendment No. 212 to Facility Operating License No. NPF-4 and Amendment No. 193 to Facility Operating License No. NPF-7 for NAPS Unit Nos. 1 and 2, respectively (issued on June 23, 1998), and Amendment No. 215 to Facility Operating License No. DPR-32 and Amendment No. 215 to Facility Operating License No. DPR-37 for SPS Unit Nos. 1 and 2, respectively (issued on June 19, 1998). As described in Topical Report DOM-QA-1, Nuclear Facility Quality Assurance Program Description (Revision 22, effective July 1, 2016), an emergency preparedness management position now exists within the station organization. Thus, there is now a separate facility emergency preparedness group responsible for development and maintenance of the Company radiological emergency plan for NAPS and a separate facility emergency preparedness group for SPS. Accordingly, the Director Nuclear Emergency Preparedness was changed to the location-specific emergency preparedness manager in NAPS Emergency Plan Revision 44 (effective February 2, 2017) and SPS Emergency Plan Revision 63 (effective March 16, 2017).

The administrative process for training exemptions and equivalent qualifications requires approval by the training program owner. The location-specific emergency preparedness training program owner for station ERO positions is the NAPS or SPS Manager Nuclear Emergency Preparedness, as appropriate, and for corporate positions the Manager Nuclear Fleet Emergency Preparedness. The proposed change will align the emergency preparedness training exemption and equivalent qualification processes with the process employed by other nuclear training programs.

#### 2.4 APPROVAL AUTHORITY FOR CHANGES TO EMERGENCY PLANS AND IMPLEMENTING PROCEDURES

Dominion Energy Virginia proposes to establish the station Facility Safety Review Committee (FSRC) as the approval authority for changes to the Emergency Plan and establish the respective site Manager Nuclear Emergency Preparedness (NEP) as the approval authority for emergency plan implementing procedure (EPIP) revisions.

Appendix "A" to License No. NPF-4, NAPS Unit 1 Technical Specifications, dated November 26, 1977, included Administrative Control 6.5.1.6.j, which indicates: "[T]he

SNSOC (Station Nuclear Safety and Operating Committee) shall be responsible for ... Review of the Emergency Plan and implementing procedures and shall submit recommended changes to the Chairman of the Station Nuclear Safety and Operating Committee."

By letter dated February 23, 1981, which supplemented requests to modify SPS Technical Specifications dated March 31, 1980 (supplemented by letter dated August 4, 1980), August 28, 1980 and November 14, 1980, it was requested that Administrative Control 6.1.C.1.f.10 be added to indicate the SNSOC shall be responsible for: "Review of the Emergency Plan and its implementing procedures and shall submit recommended changes to the Chairman of the Station Nuclear Safety and Operating Committee." This addition was not explicitly described in the accompanying Safety Evaluation Report, which described other changes. The SER stated: "[T]he proposed changes to the Administrative Controls Section of Technical Specifications formalizes the licensee's new corporate and plant organization." Associated Amendment No. 69 to Facility Operating License No. DPR-32 and Amendment No. 69 to Facility Operating License No. DPR-37 for the Surry Power Station, Unit Nos. 1 and 2, respectively, were issued on May 22, 1981.

Sections 8.5.1 and 8.5.2 of the approved Emergency Plan (July 22, 1982 for NAPS and July 29, 1982 for SPS, Revisions 0) stated that revisions to the emergency plan and EIPs shall be reviewed and approved by the Station Nuclear Safety and Operating Committee (SNSOC). These provisions aligned with the administrative controls in NAPS and SPS Technical Specifications described above. These provisions were relocated to Sections 8.2.1 and 8.2.1 of NAPS Emergency Plan Revision 8, effective September 27, 1984, and combined into Section 8.2.1 of NAPS Emergency Plan, Revision 12, effective October 2, 1989. These provisions were relocated to Sections 8.2.1 and 8.2.1 of SPS Emergency Plan, Revision 15, effective June 28, 1984, and combined into Section 8.2.1 of SPS Emergency Plan, Revision 30, effective July 30, 1987.

The proposed revision is to split the existing Section 8.2.1 into three separate sections addressing the annual review of the emergency plan and EIPs (Section 8.2.1), revision of the emergency plan (Section 8.2.3), and maintenance of the EIPs (Section 8.2.4). Also, the reference to 10CFR50.54(q) in the existing Section 8.2.1 will specify sub-sections (3) and (4) with respect to emergency plan revisions, and sub-section (2) with respect to maintenance of EIPs.

By letters dated November 2, 1984, modifications to NAPS and SPS Technical Specifications were proposed with respect to the approval authority for changes to the Emergency Plan and its implementing procedures. Previously, following review by the SNSOC, recommended Emergency Plan and EIP changes were submitted to the SNSOC Chairman, a role assigned to the Station Manager. The proposed change was to assign the new Assistant Station Manager (Nuclear Safety and Licensing) position as the SNSOC Chairman and for the SNSOC to review Emergency Plan and EIP



changes and submit recommended changes to the Station Manager. The NRC Safety Evaluation Report dated December 11, 1985, documented that the proposed changes, which included but were not limited to the approval of emergency plan and implementing procedure changes, were acceptable as they meet the acceptance criteria of Sections 13.1.1, 13.1.2, and 13.4 of NUREG-0800, the Standard Review Plan. Associated Amendment No. 104 to Facility Operating License Nos. DPR-32 and DPR-37 for SPS Unit Nos. 1 and 2, were issued on December 11, 1985. Associated Amendment No. 78 to Facility Operating License No. NPF-4 and Amendment No. 67 to Facility Operating License No. NPF-7 for NAPS Unit Nos. 1 and 2, respectively, were issued on May 6, 1986. These provisions were incorporated into Section 8.2.1 of SPS Emergency Plan Revision 30, effective July 30, 1987. These provisions were incorporated into Section 8.2.1 of NAPS Emergency Plan Revision 12, effective October 2, 1989.

By letter dated July 20, 1993, modifications to NAPS and SPS Technical Specifications were proposed to remove NAPS Administrative Control 6.5.1.6.j and SPS Administrative Control 6.1.C.1.f.10. These requests were made pursuant to a proposed generic communication published in Federal Register Volume 58 (17293), which allowed re-locating these requirements to the Emergency Plan. Guidance was subsequently issued as NRC Generic Letter 93-07, Modification of the Technical Specification Administrative Control Requirements for Emergency and Security Plans, dated December 28, 1993. NRC Safety Evaluation Report dated March 1, 1994, documented that the proposed changes were acceptable as they met the acceptance criteria of Section 5.5.1 of the Improved Standard Technical Specifications. Associated Amendment No. 180 to Facility Operating License No. NPF-4 and Amendment No. 161 to Facility Operating License No. NPF-7 for NAPS Unit Nos. 1 and 2, respectively, and Amendment No. 188 to Facility Operating License Nos. DPR-32 DPR-37 for SPS Unit Nos. 1 and 2, were issued on March 1, 1995.

Technical Specification Amendment No. 212 to Facility Operating License No. NPF-4 and Amendment No. 193 to Facility Operating License No. NPF-7 for NAPS Unit Nos. 1 and 2, respectively (issued on June 23, 1998), and Amendment No. 215 to Facility Operating License Nos. DPR-32 and DPR-37 for SPS Unit Nos. 1 and 2, respectively (issued on June 19, 1998), replaced references to the Station Manager with Site Vice President with respect to Emergency Plan and implementing procedure approval. Subsequently, NAPS and SPS Emergency Plan Section 8.2.1 references to the Station Manager were revised to reference the Site Vice President as the approval authority for Emergency Plan and implementing procedure changes (NAPS Emergency Plan, Revision 22 (July 17, 1998) and SPS Emergency Plan, Revision 43 (August 12, 1998)).

Prior to 1982, emergency planning was one of multiple functions assigned to a series of corporate departments (e.g., Technical Services, Corporate Licensing and Quality Assurance, and Corporate Quality Assurance). In January 1982, a Corporate Emergency Planning department was established for NAPS and SPS, interfacing with

on-site coordinators in the station organizations. In August 1996, the Corporate Emergency Preparedness Department assumed line-management responsibility for on-site coordination activities. As described in Topical Report DOM-QA-1, Nuclear Facility Quality Assurance Program Description (Revision 22, effective July 1, 2016), an emergency preparedness management position now exists within the station organization. Thus, there is now a facility Emergency Preparedness group responsible for development and maintenance of the Company radiological emergency plans for NAPS and a separate group for SPS.

Benchmarking has revealed that approval of proposed revisions to the Emergency Plan by multi-disciplinary plant operating review committees (PORCs), which Dominion Energy Virginia refers to as FSRCs, is typical in the industry. Approval by a site executive (or corporate executive for fleet emergency plans) is not universal. For example, at the Dominion Nuclear Connecticut, Inc.'s Millstone Power Station, the approval authority is vested in the FSRC. With respect to EIPs, benchmarking did not identify any other stations where EIP revisions required PORC review (there were examples where specific EIPs received a PORC review). In most cases, EP manager(s) maintain the authority to approve EIP revisions.

Designating the FSRC as the approval authority for revisions to the Emergency Plan will align the content of the NAPS Emergency Plan for Units 1 and 2 with Section II.P.4 of the North Anna Unit 3 Combined License Emergency Plan. This will preclude having to reconcile approval of these documents in the future.

Consistent with the proposed change, Topical Report DOM-QA-1 Section 6.3, Document Review and Approval, specifies, "[D]ocuments, including procedures, programs and changes thereto are approved by responsible management or the facility safety review committee, as applicable."

## 2.5 MAINTENANCE OF EMERGENCY PLAN LETTERS OF AGREEMENT

Dominion Energy Virginia proposes to replace references to letters of agreement being maintained in an appendix to the Emergency Plan with references to these letters being maintained separately.

Section 5.3.3 of the approved NAPS and SPS Emergency Plans (July 22, 1982 for NAPS and July 29, 1982 for SPS, Revisions 0) documents that letters of agreement in support of the NAPS and SPS Emergency Plans would be re-negotiated once every 2 years. The letters of agreement were included in an appendix to the Emergency Plans. Section 5.3.3 of the current NAPS and SPS Emergency Plan contains a similar statement and the current letters of agreement also appear in an appendix to NAPS Emergency Plan Revision 44 (effective February 2, 2017) and SPS Emergency Plan Revision 63 (effective March 16, 2017). NUREG-0053 Supplement 11, Safety Evaluation Report related to the operation of North Anna Power Station, Unit 2 for

NAPS Unit 2 (August 1980), Appendix B, Emergency Preparedness Evaluation Report, Section P indicates: "[R]e-negotiated letters will be distributed as revisions to the Plan."

NUREG-0654/FEMA-REP-1, Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants, Section II.B.9 indicates copies of agreements are to be appended to the licensee's Emergency Plan. NRC Region II EP Inspectors have recommended that the letters of agreement be removed from the Emergency Plans and be maintained on-file where they are easily assessable for review during inspections. Benchmarking has revealed that a large number of licensees have Emergency Plans that contain a list of agencies with which letters of agreement are maintained without having the letters of agreement in the Emergency Plan.

## 2.6 EXPANDING THE TIME PERIOD FOR STARTING A DRILL OR EXERCISE OUTSIDE NORMAL WORKING HOURS

Dominion Energy Virginia proposes to expand the time period for starting a drill or exercise outside normal working hours. Currently, at least once in every eight-year exercise cycle, a drill or exercise is required to be initiated "between 6:00 p.m. and 4:00 a.m." It is proposed to change the initiation time to "between 6:00 p.m. and 4:00 a.m. on a weekday or during a weekend."

NUREG-0654/FEMA-REP-1, Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants (November 1980), Section II.N.1.b, provided evaluation criteria for meeting the 10 CFR 50.47(b)(14) emergency planning standard, which concerns drills and exercises. As originally presented, this criteria called for each organization to make provisions to start an exercise between 6:00 p.m. and midnight, and another between midnight and 6:00 a.m. At the time the criteria were developed, exercise frequency was annual and there was a five year period during which major elements of the plans and preparedness organizations were to be tested.

Subsequently, on September 28, 1983, FEMA published the "Review and Approval of State and Local Radiological Emergency Plans and Preparedness" final rule, 44 CFR 350 in the Federal Register (48 FR 44332). 44 CFR 350 changed the exercise frequency for state and local governments to a biennial requirement [see 44 CFR 350.9(c)(1)-(4)]. The final rule became effective October 28, 1983.

FEMA Guidance Memorandum (GM) PR-1, Policy on NUREG-0654/FEMA-REP-1 and 44 CFR 350 Periodic Requirements (October 1, 1985) was issued to interpret and clarify the subject requirements. In part, this guidance modified the NUREG-0654/FEMA-REP-1 Section II.N.1.b criteria (i.e., annual exercise, testing of major elements over a five-year period, and starting an exercise between 6:00 p.m. and midnight, and another between midnight and 6:00 a.m.) to correspond with 44 CFR 350.9(c)(1)-(3) (i.e., a biennial exercise frequency). The revised guidance referred to a



biennial exercise, testing of major elements over a six-year period, and starting an exercise between 6:00 p.m. and 4:00 a.m. on a weekday or during a weekend.

NUREG-0654/FEMA-REP-1 Supplement 1, Criteria for Utility Offsite Planning and Preparedness (September 1988), Section II.N.1.b, carried forward provisions for a biennial exercise, testing of major elements over a six-year period, and starting an exercise between 6:00 p.m. and 4:00 a.m., but not include the, "on a weekday or during a weekend" clause.

NSIR/DPR-ISG-01, Emergency Planning for Nuclear Power Plants (November 2011), Section IV.G, Challenging Drills and Exercises, revised Evaluation Criterion II.N.1.b to recognize that scenarios may be based on non-accidental events, remove criteria for the conduct of post-exercise critiques for onsite and offsite emergency response organizations, and replace out-of-date references to an annual exercise and five-year period. In addition, criteria for conducting off-hour and unannounced exercises were relocated to new Evaluation Criterion II.N.1.c, which appears below:

"Provisions must be made to start a drill or exercise between 6:00 p.m. and 4:00 a.m. at least once in every eight-year exercise cycle. Some drills or exercises should be unannounced."

The current emergency plans (NAPS Emergency Plan Revision 44 (effective February 2, 2017) and SPS Emergency Plan Revision 63 (effective March 16, 2017)) reflect this criterion at Sections 8.6.1, Scheduling of Emergency Exercises.

The underlying objective of the criteria is to demonstrate response at times when the majority of licensee staff is away from their normal work location. It recognizes that commercial nuclear power plant emergencies may take place at any time, and response organizations should have the capability to respond at any time of the day or night, and on weekends. This involves augmentation by personnel who are at off-duty locations prior to the start of the exercise or drill. Starting a drill or exercise between 4:00 a.m. and 6:00 p.m. on a weekend supports the underlying objective.

Expanding this time period will align the content of the NAPS Emergency Plan for Units 1 and 2 with Section II.N.1.c of the North Anna Unit 3 Combined License Emergency Plan. This will preclude having to reconcile these documents in the future.

### **3.0 CONCLUSION**

The proposed change to the NAPS and SPS Emergency Plans are as follows: 1) clarify ERO augmentation and ERF activation goals, 2) eliminate ringdown phones between the EOF and risk jurisdictions capable of activating the site-specific EWS siren systems, 3) replace references to "equivalency credit" for required training sessions with reference to administrative processes for training exemptions and equivalent qualifications, 4) establish the station's FSRCs as the approval authority for emergency plan revisions and the station's Manager NEP as the approval authority for EPIP

revisions, 5) replace reference to letters of agreement being maintained in an emergency plan appendix with references to these letters being maintained separately, and 6) expand the time period for crediting a drill or exercise initiated between 4:00 a.m. and 6:00 p.m. on a weekend as satisfying off-hours criteria. The changes constitute reductions in the effectiveness of the emergency plan. Therefore, NRC approval is required to implement these changes to satisfy the requirements of 10 CFR 50.54(q)(4).

#### **4.0 JUSTIFICATION**

The proposed changes affect the NAPS and SPS emergency plan, but do not alter any of the requirements of the Operating Licenses or the Technical Specifications. The changes do not alter any of the assumptions used in the safety analyses, nor do they cause any safety system parameters to exceed its acceptance limit. Therefore, the proposed changes have no adverse effect on plant safety. Additionally, the changes would not have an adverse impact to plant operations or to the health and safety of the public. Based on the technical analysis performed by Dominion Energy Virginia, the proposed changes are acceptable.

##### **4.1 REQUIREMENTS AND GUIDANCE – CLARIFICATION OF ERO AUGMENTATION AND ERF ACTIVATION GOALS**

The 10 CFR 50.47(b)(2) emergency planning standard for establishing and maintaining the process for timely augmentation of the on shift staff and associated program elements related to availability of timely augmentation of response capabilities will continue to be met as discussed above. The composition of the ERO and the functions of the ERFs remain the same. The proposed ERO augmentation and ERF activation goals replace the approximate times contained in the emergency plans with equivalent, specific goals.

##### **4.2 ELIMINATION OF COUNTY RINGDOWN PHONES**

The 10 CFR 50.47(b)(6) emergency planning standard for providing prompt communications among principal response organizations and the 10 CFR 50.47(b)(8) emergency planning standard for maintaining adequate emergency facilities and equipment will continue to be met because reliable primary and back-up means of communications continue to exist. The 10 CFR 50.47(b)(5) emergency planning standard for notification methods and procedures, and the 10 CFR 50 Appendix E, Part IV.D.3 requirements for having the capability to notify responsible state and local governmental agencies within 15 minutes after declaring an emergency are not reduced because reliable primary and back-up means of communications continue to exist.

#### 4.3 REQUIREMENTS AND GUIDANCE – USE OF ADMINISTRATIVE PROCESSES FOR TRAINING EXEMPTIONS AND EQUIVALENT QUALIFICATIONS

The 10 CFR 50.47(b)(15) emergency planning standard for providing radiological emergency response training to those who may be called on to assist in an emergency, and the 10 CFR 50 Appendix E, Part IV.F.1 requirements regarding licensee employees being familiar with their specific emergency response duties and that the emergency plans contain a description of specialized and initial and periodic retraining be provided for various categories of emergency personnel will continue to be met as discussed above. The existing requirement was self-imposed, and based on the station organization and assignment of emergency preparedness training responsibilities that existed at the time. Assigning responsibility for making these decisions to the training program owner will bring ERO training processes into alignment with other nuclear training programs. This constitutes a change to the licensing basis requiring prior NRC review because this individual is lower in the organization's hierarchy.

#### 4.4 REQUIREMENTS AND GUIDANCE – APPROVAL AUTHORITY FOR EMERGENCY PLAN AND IMPLEMENTING PROCEDURE REVISIONS

10 CFR 50 Appendix E, Part IV addresses the content of emergency plans, but does not prescribe licensee processes for making changes thereto. The 10 CFR 50.47(b)(16) emergency planning standard concerning plan development and review will continue to be met because the responsibility for development and updating of emergency plans continues to be assigned. The designation of approval authority will conform with Topical Report DOM-QA-1, Nuclear Facility Quality Assurance Program Description.

#### 4.5 REQUIREMENTS AND GUIDANCE – MAINTENANCE OF EMERGENCY PLAN LETTERS OF AGREEMENT

The 10 CFR 50.47(b)(2) and (3) emergency planning standards for identifying offsite support services will continue to be met because the agreements will continue to be maintained and will be available for inspection. The 10 CFR 50.47(b)(16) emergency planning standard concerning plan development and review will continue to be met because the responsibility for development and updating of emergency plans continues to be assigned.

#### 4.6 EXPANDING THE TIME PERIOD FOR STARTING A DRILL OR EXERCISE OUTSIDE NORMAL WORKING HOURS

The 10 CFR 50.47(b)(14) emergency planning standard for conducting drills and exercises will continue to be met because a drill or exercise will continue to be started outside normal working hours during the eight-year exercise cycle. Starting a drill or exercise between "4:00 a.m. and 6:00 p.m. on a weekend" is equivalent to starting a drill



or exercise between "6:00 p.m. and 4 a.m." because the majority of licensee staff will be away from their normal work location when augmentation processes are initiated.

## **5.0 NO SIGNIFICANT HAZARDS CONSIDERATION**

Dominion Energy Virginia has evaluated whether or not a significant hazards consideration (SHC) is warranted with the proposed changes addressing the three criteria set forth in 10 CFR 50.92(c) as discussed below.

### **Criterion 1:**

Does the proposed amendment involve a significant increase in the probability or consequences of an accident previously evaluated?

Response: No.

The proposed changes affect the NAPS and SPS emergency plans, but do not alter any of the requirements of the Operating Licenses or the Technical Specifications. The proposed changes do not modify any plant equipment and do not impact any failure modes that could lead to an accident. Additionally, the proposed changes have no effects on the consequences of any analyzed accident since the changes do not affect any equipment related to accident mitigation. Based on this discussion, the proposed amendment does not increase the probability or consequences of an accident previously evaluated.

### **Criterion 2:**

Does the proposed amendment create the possibility of a new or different kind of accident from any accident previously evaluated?

Response: No.

The proposed changes affect the NAPS and SPS emergency plans, but do not alter any of the requirements of the Operating Licenses or the Technical Specifications. The proposed changes do not modify any plant equipment and do not impact the capability of existing equipment to perform its intended functions. No system setpoints are being modified. No new failure modes are introduced by the proposed changes. The proposed changes do not introduce any accident initiators or malfunctions that would cause a new or different kind of accident. Therefore, the proposed amendment does not create the possibility of a new or different kind of accident from any accident previously evaluated.

### **Criterion 3:**

Does the proposed amendment involve a significant reduction in a margin of safety?

Response: No.

The proposed changes affect the NAPS and SPS emergency plans, but do not alter any of the requirements of the Operating Licenses or the Technical Specifications. The proposed changes do not affect any of the assumptions used in the accident analyses and does not affect any operability requirements for equipment important to plant safety. Therefore, the proposed amendment does not involve a significant reduction in the margin of safety.

In summary, Dominion Energy Virginia concludes that the proposed change does not represent a significant hazards consideration under the standards set forth in 10 CFR 50.92(c).

## **6.0 ENVIRONMENTAL CONSIDERATION**

Dominion Energy Virginia has determined that the proposed changes would not change requirements with respect to use of a facility component located within the restricted area, as defined by 10 CFR 20, nor would it change inspection or surveillance requirements. Dominion Energy Virginia has evaluated the proposed changes and has determined that the changes do not involve:

- A Significant Hazards Consideration,
- A significant change in the types or significant increase in the amounts of an effluent that may be released offsite, or
- A significant increase in individual or cumulative occupational radiation exposure.

Accordingly, the proposed changes meet the eligibility criterion for categorical exclusion set forth in 10 CFR 51.22(c)(9) and (10)(ii). Therefore, pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the proposed changes.

## **7.0 REFERENCES**

- 7.1 10 CFR 20 - Standards for Protection Against Radiation.
- 7.2 10 CFR 50 - Domestic Licensing of Production and Utilization Facilities sub-parts 47 Emergency plans, 54 Conditions of licenses and 92 Issuance of amendment, and Appendix E Emergency Planning and Preparedness for Production and Utilization Facilities.
- 7.3 10 CFR 51 - Environmental Protection Regulations for Domestic Licensing and Related Regulatory Functions sub-part 22 Criterion for categorical exclusion; identification of licensing and regulatory actions eligible for categorical exclusion or otherwise not requiring environmental review.
- 7.4 44 CFR 350 - Review and Approval of State and Local Radiological Emergency Plans and Preparedness sub-part 9 Exercises.

- 7.5 Federal Register, Volume 48, Number 189, Wednesday, September 28, 1983 (Pages 44332-44341), Review and Approval of State and Local Radiological Emergency Plans and Preparedness: Final Rule.
- 7.6 FEMA Guidance Memorandum (GM) PR-1, Policy on NUREG-0654/FEMA-REP-1 and 44 CFR 350 Periodic Requirements, dated October 1, 1985.
- 7.7 NUREG-0654/FEMA-REP-1, Revision 1, Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants (November 1980).
- 7.8 NUREG-0654/FEMA-REP-1, Revision 1, Supplement 1, Criteria for Utility Offsite Planning and Preparedness (September 1988).
- 7.9 NSIR/DPR-ISG-01, Emergency Planning for Nuclear Power Plants (November 2011).
- 7.10 Generic Letter 80-22, Transmittal of NUREG-0654, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," dated March 10, 1980.
- 7.11 Generic Letter 82-33, Supplement 1 to NUREG-0737 - Emergency Response Capability, dated December 17, 1982.
- 7.12 Generic Letter 93-07, Modification of the Technical Specification Administrative Control Requirements for Emergency and Security Plans, dated December 28, 1993.
- 7.13 Safety Evaluation Report related to the operation of North Anna Power Station Unit 2 (NUREG-0053 Supplement 11) (August 1980).
- 7.14 Nuclear Reactor Regulation Letter, Issuance of Facility Operating License No. NPF-4 – North Anna Power Station Unit 1, dated November 26, 1977.
- 7.15 Nuclear Reactor Regulation Letter, untitled (transmitted Amendment No. 69 to Facility Operating License No. DPR-32 and Amendment No. 69 to Facility Operating License No. DPR-37 for the Surry Power Station, Unit Nos. 1 and 2, respectively), dated May 22, 1981.
- 7.16 Nuclear Reactor Regulation Letter, NUREG-0737 Item III.A.2.1 Emergency Plan Upgrade to Meet Rule [Re: North Anna Power Station, Unit No. 1 and No. 2 (NA-1&2)], dated May 10, 1983.
- 7.17 Nuclear Reactor Regulation Letter, NUREG-0737 Item III.A.2.1 - Emergency Plan Upgrade to Meet Rule (Surry Power Station Unit Nos. 1 and 2), dated May 13, 1983.



- 7.18 Nuclear Reactor Regulation Letter, untitled (advised that the Commission found the location of the back-up and primary EOFs for NAPS and SPS acceptable), dated January 13, 1984.
- 7.19 Nuclear Reactor Regulation Letter, untitled (transmitted Amendment No. 104 to Facility Operating License No. DPR-32 and Amendment No. 104 to Facility Operating License No. DPR-37 for the Surry Power Station, Unit Nos. 1 and 2, respectively), dated December 11, 1985.
- 7.20 Nuclear Reactor Regulation Letter, untitled (transmitted Amendment No. 78 to Facility Operating License No. NPF-4 and Amendment No. 67 to Facility Operating License No. NPF-7 for the North Anna Power Station, Unit Nos. 1 and 2, respectively), dated May 8, 1986.
- 7.21 NRC Region II Letter, North Anna Power Station Emergency Plan Review, dated September 8, 1989.
- 7.22 NRC Region II Letter, Surry and North Anna Proposed Emergency Plan Changes, dated May 18, 1990.
- 7.23 Nuclear Reactor Regulation Letter, Surry Power Station Units 1 and 2 and North Anna Power Station Units 1 and 2 – Issuance of Amendments Re: Review and Audit Frequencies (No. 188 to Facility Operating License Nos. DPR-32 and DPR-37, No. 180 to Facility Operating License No. NPF-4, and Amendment No. 161 to Facility Operating License No. NPF-7), dated March 1, 1994.
- 7.24 NRC Region II Letter, Review of Proposed Plan Change Request for Emergency Plan Changes for Surry, dated July 6, 1995.
- 7.25 NRC Region II Letter, Review of Proposed Plan Change Request for Emergency Plan Changes for North Anna, dated July 6, 1995.
- 7.26 Nuclear Reactor Regulation summary, July 11, 1995 Meeting with VEPCO Representatives, dated July 18, 1995.
- 7.27 Nuclear Reactor Regulation Letter, Review of Proposed Cost Beneficial Licensing Action Request for Emergency Plan Changes for North Anna Power Station, dated December 12, 1995.
- 7.28 Nuclear Reactor Regulation Letter, Surry Power Station, Units 1 and 2 Emergency Plan Revisions, dated December 13, 1995.
- 7.29 Nuclear Reactor Regulation Letter, Surry Unit 1 and 2 – Issuance of Amendments Re: Station Management Title Changes (No. 215 to Facility Operating License No. DPR-32 and Amendment No. 215 to Facility Operating License No. DPR-37), dated June 19, 1998.

- 7.30 Nuclear Reactor Regulation Letter, North Anna Power Station, Unit 1 and 2 – Issuance of Amendments Regarding a Proposed Technical Specification Change on Station Management Title Changes (No. 212 to Facility Operating License No. NPF-4 and Amendment No. 193 to Facility Operating License No. NPF-7), dated June 23, 1998.
- 7.31 Topical Report DOM-QA-1, Nuclear Facility Quality Assurance Program Description (Revision 22, effective July 1, 2016).
- 7.32 North Anna Power Station Emergency Plan (Proposed version dated May 1, 1980, Revision 0 dated July 22, 1982, Revision 8, effective September 27, 1984, Revision 12 dated October 2, 1989, Revision 18 dated January 3, 1996, Revision 19 dated December 11, 1996, Revision 22 dated July 17, 1998, and Revision 44 dated February 2, 2017).
- 7.33 Surry Power Station Emergency Plan (Proposed version dated May 1, 1980, Revision 0 dated July 29, 1982, Revision 3 dated September 17, 1982, Revision 15 dated June 28, 1984, Revision 30 dated July 30, 1987, Revision 31 dated February 18, 1988, Revision 33 dated February 21, 1991, Revision 34 dated March 10, 1992, Revision 40 dated January 1, 1996, Revision 41 dated December 11, 1996, Revision 43 dated August 12, 1998, and Revision 63 dated March 16, 2017 (Revisions 0-32 were not numbered, but these revision numbers correspond to the sequence by date)).
- 7.34 North Anna Unit 3 Emergency Plan (Combined Operating License Application Part 5 Revision 5) (December 2013).
- 7.35 Outgoing Letter Serial No. 079, Amendment to Operating Licenses DPR-32 and DRP-37, Surry Power Station Units No. 1 and No. 2, Supplement to Proposed Technical Specification Change (supplemented requests to modify SPS Technical Specifications dated March 31, 1980 (supplemented by letter dated August 4, 1980), August 28, 1980 and November 14, 1980), dated February 23, 1981.
- 7.36 Outgoing Letter Serial No. 038, Organization for Emergency Planning, dated February 2, 1982.
- 7.37 Outgoing Letter Serial No. 102, NUREG-0696, Emergency Response Facilities, North Anna and Surry Power Stations, dated April 8, 1982.
- 7.38 Outgoing Letter Serial No. 676, Supplemental Information, re: NUREG-0696 Response, dated December 6, 1982.
- 7.39 Outgoing Letter Serial No. 237, Generic Letter 82-33, Emergency Operations Facilities, North Anna and Surry Power Stations, dated April 14, 1983.

- 7.40 Outgoing Letter Serial No. 259, Generic Letter 82-33, Emergency Operations Facilities, North Anna and Surry Power Stations, dated May 6, 1983.
- 7.41 Outgoing Letter Serial No. 577, Proposed Technical Specification Change, Surry Power Station, dated November 2, 1984.
- 7.42 Outgoing Letter Serial No. 578, Proposed Technical Specification Change, Review and Audit Frequencies, North Anna Power Station, dated November 2, 1984.
- 7.43 Outgoing Letter Serial No. 88-662A, Proposed Emergency Plan Revisions (North Anna), dated February 18, 1988.
- 7.44 Outgoing Letter Serial No. 89-341, Proposed Emergency Plan Revisions (Surry), dated June 30, 1989.
- 7.45 Outgoing Letter Serial No. 89-856, Proposed Emergency Plan Revisions (North Anna and Surry), dated January 17, 1990.
- 7.46 Outgoing Letter Serial No. 93-356, Proposed Technical Specification Change, Review and Audit Frequencies, North Anna and Surry Power Stations, dated July 20, 1993.
- 7.47 Outgoing Letter Serial No. 93-767, Proposed Emergency Plan Revisions, dated February 18, 1994.
- 7.48 Outgoing Letter Serial No. 95-425, Emergency Plan Revision (North Anna and Surry), dated September 6, 1995.
- 7.49 North Anna NEI-10-05, "Assessment of On-Shift Emergency Response Organization Staffing and Capabilities," December 2012.
- 7.50 Surry NEI-10-05, "Assessment of On-Shift Emergency Response Organization Staffing and Capabilities," December 2012.



Serial No. 17-325  
Docket Nos.: 50-338/339  
50-280/281  
52-017  
72-2/16/55/56

**Attachment 4**

**Marked-Up NAPS Emergency Plan Page Changes**



**Dominion®**

# Emergency Plan

**Title: North Anna Power Station Emergency Plan**

**Revision Number:**

# TBD

**Effective Date:**

Revision # TBD updates this entire document. Revised material includes, but is not limited to:

1. Establishment of a consolidated emergency operations facility known as the Corporate Emergency Response Center (CERC) in Glen Allen, Virginia. This CERC replaces the former on-site Local Emergency Operations Facility (local EOF, LEOF), the former backup Central EOF, and the headquarters support organization assembly location formerly known as the CERC. A near-site location is identified for Nuclear Regulatory Commission (NRC) and offsite responders to interact face-to-face with emergency response personnel entering and leaving the nuclear power reactor site.
2. Incorporation of the applicable content previously contained in the Corporate Emergency Response Plan.
3. Clarification of emergency response organization (ERO) augmentation and emergency response facility (ERF) activation goals.
4. Elimination of automatic ringdown phones between the EOF and Louisa County, and between the EOF and Spotsylvania County.
5. Replacement of references to "equivalency credit" for required training sessions with reference to administrative processes for training exemptions and equivalent qualifications.
6. Designation of the Facility Safety Review Committee (FSRC) as the approval authority for emergency plan revisions and the Manager Nuclear Emergency Preparedness as the approval authority for emergency plan implementing procedure revisions.
7. Addition of reference to availability of current letters of agreement (LOAs) and removal of LOAs from Appendix 10.1.
8. Expand the start time for other-than-normal working hours drill or exercise to include between 4:00 am and 6:00 pm on a weekend.

Items 1-8 authorized by License Amendment ##### and associated NRC SER (Reference Incoming Serial ##-###, dated #/##/####).

This information is to be added following receipt of NRC Safety Evaluation Report.

**Approvals on File**

**NORTH ANNA POWER STATION**  
**EMERGENCY PLAN**

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**NORTH ANNA POWER STATION**  
**EMERGENCY PLAN**

**SECTION 1**

**DEFINITIONS**

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1.0	Definitions	1.2
1.1	Acronyms and Abbreviations	1.5

## 1.0 DEFINITIONS

- Alert - Events are in process or have occurred which involve an actual or potential substantial degradation of the level of safety of the plant or a security event that involves probable life threatening risk to site personnel or damage to site equipment because of HOSTILE ACTION. Any releases are expected to be limited to small fractions of the Environmental Protection Agency Protective Action Guideline exposure levels.
- Annually – 12 months +/- 3 months.
- Biennial – Occurring every two years.
- Buffer Sectors – Two 22 1/2° sectors flanking each side of the 22 1/2° primary sector.
- Commonwealth of Virginia Emergency Operations Plan (COVEOP), Hazard-Specific Annex #1 – Radiological Emergency Response.
- Control Room - Station main control center serving as the initial location for command and control of the emergency response effort.
- Corporate Emergency Response Center (CERC) – Consolidated emergency operations facility for North Anna Power Station and Surry Power Station. Designated facility serving as the focal point for inter-company efforts implemented to support station emergency response actions and for dissemination of emergency information. The CERC is located at the Innsbrook Technical Center in Glen Allen, Virginia.
- Deep Dose Equivalent (DDE) – Direct external radiation exposure to the body (e.g., cloud shine, contamination, or direct radiation). DDE is assumed equivalent to Effective (external) Dose Equivalent (EDE) with respect to uniform exposure.
- Drill – A supervised instruction period aimed at testing, developing and maintaining skills.
- Effective Date – Date of change; implementation date assigned by approval authority; date from which 30-day NRC submittals are required in accordance with 10 CFR 50, Appendix E.V.
- Emergency – Any situation that may result in undue risk to the health and safety of the public and/or site personnel, or significant damage to property or equipment.
- Emergency Action Levels (EALs) – Events, such as equipment malfunctions, natural phenomena, radiological dose rates, etc., that may be used as thresholds for initiating such specific emergency measures as designating a particular class of emergency, initiating a notification procedure, or initiating a particular protective action.
- Emergency Classifications:
  - Notification of Unusual Event
  - Alert
  - Site Area Emergency
  - General Emergency



- Emergency Plan Implementing Procedures (EPIPs) – Emergency response procedures that implement the Emergency Plan.
- Emergency Planning Zones (EPZ):
- Plume Exposure Pathway EPZ – An area delineated by an approximate ten-mile radius circle around the North Anna Power Station.
- Ingestion Exposure Pathway EPZ – An area delineated by an approximate fifty-mile radius circle around the North Anna Power Station with the potential of internal exposure from the ingestion of radioactive material through the food pathway.
- Emergency Response Facility (ERF) - Emergency facilities include the Control Room, Technical Support Center, Operational Support Center, Corporate Emergency Response Center, and Joint Information Center.
- Exclusion Area – The area within a 5000 feet radius of the now abandoned North Anna Unit 3 containment.
- Exercise – A test of the response capabilities of the Emergency Organization that permits the evaluation of training and response to a given situation. Exercises are conducted in accordance with pre-planned scenarios with defined objectives.
- 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 or security events that result in an actual loss of physical control of the facility. Releases can be reasonably expected to exceed Environmental Protection Agency Protective Action Guideline exposure levels offsite for more than the immediate site area.
- Hostile Action – An act toward a nuclear power plant or its personnel that includes the use of violent force to destroy equipment, takes hostages, and/or intimidates the licensee to achieve an end. This includes attack by air, land, or water using guns, explosives, projectiles, vehicles, or other devices used to deliver destructive force. Other acts that satisfy the overall intent may be included. Hostile Action should not be construed to include acts of civil disobedience or felonious acts that are not part of a concerted attack on the nuclear power plant. Non-terrorism-based EALs should be used to address such activities, (e.g., violent acts between individuals in the owner controlled area.)
- Hostile Force – One or more individuals who are engaged in a determined assault, overtly or by stealth and deception, equipped with suitable weapons capable of killing, maiming, or causing destruction.
- Interim – A temporary or provisional emergency response position or facility which is augmented or transferred as resources become available.

- Joint Information Center (JIC) - Designated facility from which official information concerning an emergency is provided to the media. The JIC is located at the Virginia State Police Administrative Headquarters in Chesterfield, Virginia.
- Local Counties – This term shall be used to denote the Counties of Louisa, Spotsylvania, Caroline, Orange, and Hanover in the approximate ten (10) mile emergency planning zone.
- ~~Local Emergency Operations Facility (LEOF) – A near site facility where the Recovery Manager controls the overall emergency response.~~
- Local Media Center (LMC) – This facility provides a near site location for official media releases. The Local Media Center is in the North Anna Nuclear Information Center.
- Nearsite – Within the Exclusion Area, but beyond Protected Area.
- Notification of Unusual Event - Events are in process or have occurred which indicate a potential degradation of the level of safety of the plant or indicate a security threat to facility protection has been initiated. No releases of radioactive material requiring offsite response or monitoring are expected unless further degradation of safety systems occurs.
- Offsite – Beyond the Exclusion Area.
- Onsite – Within the Protected Area, (surrounded by security fence).
- Operational Support Center (OSC) – An assembly area that serves as the staging location for Damage Control Teams, the Fire Brigade, the First Aid Team, and the Search and Rescue Team.
- Primary Sector – The 22 1/2° sector which bounds the existing wind direction.
- Projected Dose – An estimated radioactive dose which affected population groups could potentially receive if no protective actions are taken.
- Protected Area (PA) – An area encompassed by physical barriers and to which access is controlled. For the purposes of this plan, the Protected Area refers to the designated security area around the reactor and turbine buildings.
- Protective Action Guides (PAGs) – The projected dose to individuals in the general population or the dose rate which warrants taking protective actions.
- Protective Actions – Those emergency measures taken before or after an uncontrolled release of radioactive material has occurred for the purpose of preventing or minimizing radiological exposure.
- Recovery Actions – Those actions taken after the emergency to restore the station as nearly as possible to its pre-emergency condition.
- Rem (Roentgen Equivalent Man) – A unit of radiation dose that relates exposure to the biological effects of the exposure (absorbed exposure or dose). A unit related to the rem is the millirem (mrem). 1 mrem = 1/1000 rem.
- Restricted Area – Any area where access is controlled for the purpose of radiation protection.
- Semi-annual – Occurring once during each of the first and last six months of the calendar year.



- Site – The Power Station proper and the 5000 foot radius exclusion area around the Power Station.
- Site Area Emergency - Events are in process or have occurred which involve an actual or likely major failures of plant functions needed for protection of the public or HOSTILE ACTION that results in intentional damage or malicious acts; (1) toward site personnel or equipment that could lead to the likely failure of or; (2) that prevents effective access to equipment needed for the protection of the public. Any releases are not expected to result in exposure levels which exceed Environmental Protection Agency Protective Action Guideline exposure levels beyond the site boundary.
- Station Emergency Manager (SEM) – Designated onsite individual having the responsibility and authority for implementing the North Anna Emergency Plan.
- Technical Support Center – A facility located adjacent to Unit 1 Control Room which will be the central control center for the onsite emergency response organization after the on shift staff has been augmented.
- Thyroid Committed Dose Equivalent (CDE) – Radiation exposure to the thyroid through inhalation or ingestion of radioactive material assuming a 50 year exposure period from uptake.
- Total Effective Dose Equivalent (TEDE) – The sum of external and internal dose.



## 1.1 **ACRONYMS AND ABBREVIATIONS**

AC	-	Alternating Current
ARD	-	Automatic Ringdown Line
Asst.	-	Assistant
cc	-	Cubic Centimeter
Ce	-	Cerium
CDE	-	Committed Dose Equivalent
CEDE	-	Committed Effective Dose Equivalent
<del>CEOF</del>	-	<del>Central Emergency Operations Facility</del>
CERC	-	Corporate Emergency Response Center
<del>CERP</del>	-	<del>Corporate Emergency Response Plan</del>
<del>CERT</del>	-	<del>Corporate Emergency Response Team</del>
CFR	-	Code of Federal Regulations
CH	-	Charging System
COVEOP	-	Commonwealth of Virginia Emergency Operations Plan
cpm	-	Counts per minute
CR	-	Control Room
Cs	-	Cesium
CSD	-	Cold Shutdown
CTS	-	Current Technical Specifications
CVCS	-	Chemical Volume Control System
DBE	-	Design Basis Earthquake
DC	-	Direct Current
DDE	-	Deep Dose Equivalent
DECON	-	Decontaminate
DEPT.	-	Department
DOE	-	Department of Energy
EAD	-	Emergency Administrative Director
EALs	-	Emergency Action Levels
EAS	-	Emergency Alert System
ECCS	-	Emergency Core Cooling System
EDE	-	Effective Dose Equivalent
e.g.	-	For example [From Latin exempli gratia]
EMD	-	Emergency Maintenance Director
ENS	-	NRC Emergency Notification System
EOC	-	Emergency Operations Center

EOD	- Emergency Operations Director
EOF	- Emergency Operations Facility
EPA	- Environmental Protection Agency
EPC	- Emergency Procedures Coordinator
EIPs	- Emergency Plan Implementing Procedures
EPZs	- Emergency Planning Zones
ERDS	- Emergency Response Data System
ERF	- Emergency Response Facility
ERGs	- Emergency Response Guidelines
<u>ERO</u>	- <u>Emergency Response Organization</u>
etc.	- et cetera
ETD	- Emergency Technical Director
EWS	- Early Warning System
F	- Fahrenheit
FEMA	- Federal Emergency Management Agency
FRMAC	- Federal Radiological Monitoring and Assessment Center
FRMAP	- Federal Radiological Monitoring and Assessment Plan
FSRC	- Facility Safety Review Committee
ft	- Feet
GOV'T.	- Government
gpm	- Gallons per minute
HP	- Health Physics
HPN	- Health Physics Network (Communications System)
HRSS	- High Radiation Sampling System
HSD	- Hot Shutdown
I	- Iodine
IAW	- In accordance with
i.e.	- That is [From Latin id est]
IEIN	- Inspection and Enforcement Information Notice (NRC)
I/O	- Input/Output
ISFSI	- Independent Spent Fuel Storage Installation
ITS	- Improved Technical Specifications
JDG	- Job Demonstration Guide
JIC	- Joint Information Center
KI	- Potassium Iodide
Kr	- Krypton

KW	-	Kilowatt
LAN	-	Local Area Network
LCO	-	License Condition of Operation
<del>LEOF</del>	-	<del>Local Emergency Operations Facility</del>
LMC	-	Local Media Center
LOCA	-	Loss of Coolant Accident
LW	-	Liquid Waste System
MCL	-	Management Counterpart Link
MCVH	-	Medical College of Virginia Hospital
MIDAS	-	Meteorological Information and Dose Assessment System
mph	-	Miles per hour
mR/hr	-	Millirem per hour
MSL	-	Mean Sea Level
Mwe	-	Megawatt electric
MWt	-	Megawatt thermal
N/A	-	Not applicable
NAEP	-	North Anna Emergency Plan
NANIC	-	North Anna Nuclear Information Center
NAPS	-	North Anna Power Station
NDT	-	Nil Ductility Transition
NEP	-	Nuclear Emergency Preparedness
NRC	-	Nuclear Regulatory Commission
NSSS	-	Nuclear Steam Supply System
<u>NUREG</u>	-	<u>NRC Report</u>
OBE	-	Operating Basis Earthquake
ODCM	-	Offsite Dose Calculation Manual
OPX	-	Off-Premises exchange (Communications System)
OSC	-	Operational Support Center (Onsite Operations Assembly Area)
PAGs	-	Protective Action Guides
<u>PAR</u>	-	<u>Protective Action Recommendation</u>
PBX	-	Private Branch exchange (Communications System)
PCS	-	Plant Computer System
Pk.	-	Package
PLS	-	Plus Local Support
PMCL	-	Protective Measures Counterpart Link
PORV	-	Power Operated Relief Valve



psi, psia, psig	- Pounds per square inch, psi absolute, psi guage
RAA	- Remote Assembly Area
RAC	- Radiological Assessment Coordinator
RAD, Rad, rad	- Radiological Assessment Director, radiation or radiological depending on context
RCP	- Reactor Coolant Pump
RCS	- Reactor Coolant System
Rem	- Roentgen Equivalent Man
RERP	- Radiological Emergency Response Plan
R/hr	- Roentgen per hour
RHR	- Residual Heat Removal
RIC	- Richmond International Concourse (Airport)
RM, RMS	- Radiation monitor or Radiation Monitoring System depending on context
RO	- Reactor Operator
RPS	- Radiation Protection Supervisor
RSCL	- Reactor Safety Counterpart Link
Ru	- Ruthenium
RVLIS	- Reactor Vessel Level Indication System
Rx	- Reactor
SCBA	- Self contained breathing apparatus
SEM	- Station Emergency Manager
SI	- Safety Injection
SN	- Serial number
SONET	- Synchronous Optical Network
SPDS	- Safety Parameter Display System
SRO	- Senior Reactor Operator
SSSC	- Sealed Surface Storage Cask
STA	- Shift Technical Advisor
SW	- Service Water system
Te	- Tellurium
TR	- Technical Requirement (from Technical Requirements Manual)

T.S.,	
Tech Specs	- Technical Specification(s)
TEDE	- Total Effective Dose Equivalent
THY	- Thyroid
TLD	- Thermoluminescent Dosimeter
TSC	- Technical Support Center
μCi	- Micro (μ) Curie
UFSAR	- Updated Final Safety Analysis Report
UHF	- Ultrahigh frequency (radio)
U.S.	- United States
V	- Volts
VCU	- Virginia Commonwealth University
VCUMC	- Virginia Commonwealth University Medical Center
VDEM	- Virginia Department of Emergency Management
VG	- Vents – Gaseous
VPAP	- Virginia Power Administrative Procedure
WAN	- Wide Area Network
Xe	- Xenon
X/Q	- Chi/Q; Dilution and dispersion factor, seconds per cubic meter

**NORTH ANNA POWER STATION**  
**EMERGENCY PLAN**

**SECTION 2**

**SCOPE AND APPLICABILITY**

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2.2	Emergency Plan	2.2
2.3	North Anna Hydroelectric Unit	2.3



## **2.0 SCOPE AND APPLICABILITY**

### **2.1 SITE SPECIFICS**

The North Anna Power Station consists of two units, each of which includes a three loop pressurized light water reactor, nuclear steam supply system (NSSS) and turbine generator furnished by Westinghouse Electric Corporation. The balance of the station was designed and constructed by the Company with the assistance of its Architect/Engineer, the Stone and Webster Engineering Corporation. Each reactor unit design output is limited to maximum power level stated in the current Operating License.

The units are located on a peninsula on the southern shore of Lake Anna in Louisa County approximately 40 miles North Northwest of Richmond, Virginia; 38 miles East of Charlottesville, Virginia; and 24 miles Southwest of Fredericksburg, Virginia. Cooling water, contained by an earthen dam structure, is obtained from the 17 mile long North Anna Reservoir. An Independent Spent Fuel Storage Installation (ISFSI) is located on the plant site.

### **2.2 EMERGENCY PLAN**

The North Anna Power Station Emergency Plan (the Plan) describes the organization, facilities, emergency response measures, and functional interfaces with offsite agencies which can be used to respond to a broad range of defined emergencies. The organization has well defined responsibilities and specific authorities which provide for effective control and coordination of the emergency response, both onsite and offsite. The organization is augmented, as required, to address situations with the most serious potential consequences.

The Plan is formulated for compatibility with existing local, State, and Federal response organizations which may render emergency assistance. A coordinated response effort between the company and other agencies supports the mutual goals of protecting public health and safety and of minimizing damage to both public and private properties.

The basic purposes of the Plan are as follows:

- 1) To define potential types of emergencies;
- 2) To establish an organization for managing an emergency;
- 3) To provide measures for coping with an emergency;
- 4) To provide facilities from which to perform selected measures;
- 5) To provide for a recovery program following an emergency; and,
- 6) To provide methods for maintaining the Plan active and current.

Emergency Plan Implementing Procedures (EPIPs) provide instructions for accomplishing the provisions established in the Plan. The procedures guide the classification of the emergency, provide for offsite notifications, and activation of the full response organization. They also provide techniques for estimating the consequences of offsite releases and making recommended Protective Action Recommendations.

The Plan satisfies the emergency plan requirements for the North Anna ISFSI under provisions of Title 10 of the Code of Federal Regulations, Part 72, Subpart B, Section 32, Subsection (c).

### **2.3 NORTH ANNA HYDROELECTRIC UNIT**

In addition to the North Anna Emergency Plan, an Emergency Action Plan has been prepared for the North Anna Hydroelectric Plant. The North Anna Hydroelectric Plant, a small hydroelectric generating unit of 855KW capacity, is operated by Dominion and located on the North Anna River at the Lake Anna Dam (approximately 5.5 miles Southeast of the North Anna Power Station).

The North Anna Hydroelectric Plant Emergency Action Plan was prepared to conform with the provisions of Title 18 of the Code of Federal Regulations, Part 12, Subpart C, and was developed in consultation and cooperation with Federal, State, and local agencies responsible for public health and safety.

The action Plan includes provisions for notifying State and downstream counties that may be affected by a classified project (dam) emergency. It also sets forth procedures to be followed by station personnel to control the emergency and to notify the appropriate authorities.

In order to meet the requirements of 18 CFR Part 12, Subpart C, provisions for operation of spillway equipment concurrent with an incident at North Anna Power Station is addressed as part of this plan. Should a (nuclear) station emergency occur, the Auxiliary Operator(s) shall remain at the dam to ensure proper operation of spillway gates, unless contacted by Security or Operations to evacuate because of safety reasons.

**NORTH ANNA POWER STATION**  
**EMERGENCY PLAN**

**SECTION 3**

**SUMMARY OF EMERGENCY PLAN**

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3.0	Summary of Emergency Plan	3.2



### **3.0 SUMMARY OF EMERGENCY PLAN**

Types of emergencies are divided into four classifications which cover a broad spectrum of potential occurrences. The classifications range from a "Notification of Unusual Event", in which offsite officials are notified of an unusual condition, through "General Emergency," in which onsite and offsite evacuation may be required and a major state of emergency exists. This classification scheme is compatible with existing State and local plans.

An emergency response organization is established with specific duties and responsibilities defined, and points of contact between onsite and offsite supporting agencies are designated. Augmentation of the emergency organization will occur at "Alert" and higher levels, ~~and includes activation of both station and corporate emergency response teams.~~ Provisions for prompt notification of State, Local and Federal agencies are established and include pre-planned information which may be required for offsite agency response.

Methods and procedures provide corrective and protective actions including evaluation of the operability of the unaffected unit. The use of protective equipment, protective action guides and exposure limits are also pre-specified. The facilities available for assessment and management of the emergency consist of onsite and offsite response facilities, communication systems, and portable or fixed equipment and systems for detection and measurement of those parameters causing or resulting from the emergency. Medical facilities are also available. Provisions are provided for public information activities, including development and issuance of press releases, media briefings, and responding to public inquiries.

A recovery program describes the organization and procedural approach required to re-start the affected unit. The recovery program provides guidance for relaxing protective measures that have been instituted and requires the periodic estimation of total population exposure.

The Emergency Plan and Emergency Plan Implementing Procedures are reviewed annually. The Facility Safety Review Committee (FSRC) shall evaluate the review and may provide additional recommendations as necessary. Periodic drills and exercises involving communications, fire-fighting, radiological monitoring and Health Physics activities are routinely conducted. A joint exercise involving participation by State and local response agencies will be held on even-numbered years at North Anna (on odd-numbered years, the State participates at Surry) to ensure all major elements of the Plan are tested within an eight year period. Federal response agencies may also participate in these joint exercises. Critiques of each implementation of the Plan allow for critical reviews of technique, methods, and shortcomings. Improvements will be factored into the Plan and/or Implementing Procedures through revisions.

**NORTH ANNA POWER STATION**  
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**SECTION 4**

**EMERGENCY CONDITIONS**

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#### **4.0 EMERGENCY CONDITIONS**

The following guidelines describe the criteria used by station personnel in classifying or determining the type of an emergency. The types of potential accidents or emergencies can be numerous and vary in magnitude. Accordingly, the classification system is wide-ranged, although flexible and straight forward. The four classifications are defined in accordance with Appendix 1 of NUREG 0654, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants." The classification system is not intended to include minor deviations during normal operation. Furthermore, it may be discovered that an event or condition, which met the classification criteria, had existed, but that the basis for the emergency class no longer exists at the time of discovery. For example, the event may have rapidly concluded or been discovered during a post-event review. As discussed in NUREG-1022, "Event Reporting Guidelines: 10 CFR 50.72 and 50.73" (Revision 1), actual declaration of an emergency class is not necessary in these circumstances, although notification to the Nuclear Regulatory Commission and Virginia Department of Emergency Management (VDEM) is warranted.

#### **4.1 SPECTRUM OF POSTULATED ACCIDENTS**

The spectrum of emergencies peculiar to nuclear power stations range from accidents with minor implications on health and safety to the postulation of major occurrences resulting in the release of significant quantities of radioactive material. Examples of minor accidents include unplanned or uncontrolled releases of small amounts of radioactive material in excess of allowable limits as well as equipment malfunctions.

Major occurrences, though not expected to take place, have been postulated for planning and design purposes because their consequences could include the potential for release of significant amounts of radioactive material. The range of conditions in Appendix 1 to NUREG-0654 and Section 15 of the North Anna Updated Final Safety Analysis Report (UFSAR) have been included in the classification system of this Plan.

Of the Condition IV - Limiting Faults analyzed in the UFSAR, three are considered to have the potential for releasing significant amounts of radioactivity. These are the loss of coolant accident, the steam generator tube rupture accident and the fuel handling accident. The nature of these three accidents is such that a safety analysis can produce results which vary considerably in the radiological consequences. The analysis results depend on assumptions used concerning such items as the status of primary coolant radioactivity content, meteorological conditions, or performance of station safety systems. The UFSAR makes very conservative estimates of the consequences. The Emergency Plan Implementing Procedures are written in anticipation of having to contend with these worst case consequences.



#### **4.2 EMERGENCY CLASSIFICATION SYSTEM**

Emergency conditions which may develop will be categorized as one of the following emergency classifications (defined in Section 1 of this plan):

1. Notification of Unusual Event.
2. Alert.
3. Site Area Emergency.
4. General Emergency.

The Notification of Unusual Event classification requires notification of appropriate offsite support groups and station management personnel that an abnormal condition exists at the station. The purpose of this notification is to increase the awareness of key offsite support organizations and station management of a condition which can currently be managed by the onsite resources, but which could escalate to a more serious condition. The on-shift operations personnel are assigned response tasks in accordance with the pre-augmentation organization responsibilities defined in Section 5 of this plan.

The Alert classification is indicative of a more serious condition which has the potential for radioactive release. As a result, the emergency response organization is notified to augment onsite resources and activate ~~corporate~~ emergency response facilities.

The Site Area Emergency classification reflects conditions where some significant radiation releases are likely or are occurring, but where a core melt situation is not currently indicated. In this situation, there would be full mobilization in the nearsite environs of monitoring teams and associated communications. A Site Area Emergency can be declared for reasons other than radiological releases.

The General Emergency classification is indicative of actual or imminent substantial core degradation or melting with the potential for loss of containment, or non-radiological events which could endanger public health and/or safety. Within fifteen minutes of declaring a General Emergency, predetermined protective action recommendations will be made to the State based on plant and meteorological conditions.

Tables 4.1 - 4.4 list the initiating conditions for each emergency classification. The Emergency Action Level Matrix groups these conditions by event category for easy reference and identification. For each condition, specific indications available from instruments and unit operating response are defined in the matrix to confirm that the proper thresholds have been met for declaring a given classification. Once indications are available to plant operators that an emergency action level has been exceeded, the event is promptly assessed and classified, and the corresponding emergency classification level is declared. This declaration occurs as soon as possible and within 15 minutes of when these indications become available.

**TABLE 4.1**

**INITIATING CONDITIONS: NOTIFICATION OF UNUSUAL EVENT**

**NOTE:** The alpha-numeric designator, [AAN], preceding each initiating condition below, indicates the Emergency Action Level Identifier category, emergency classification and subcategory number; respectively.

**Recognition Category C – Cold Shutdown/Refueling System Malfunction**  
(Cold Conditions ( $RCS \leq 200^{\circ}F$ ) only))

- CU1a AC power capability to emergency busses reduced to a single power source for greater than 15 minutes such that any additional single failure would result in loss of all AC power to emergency busses
- CU1b Unplanned loss of required DC power for greater than 15 minutes
- CU2 Unplanned loss of RCS inventory with irradiated fuel in the Reactor Vessel
- CU3 Unplanned loss of decay heat removal capability with irradiated fuel in the Reactor Vessel
- CU4 Unplanned loss of all onsite or offsite communications capabilities
- CU5 RCS leakage
- CU6 Inadvertent criticality

**Recognition Category E – Independent Spent Fuel Storage Installation (ISFSI)**

- EU1 Damage to a loaded cask confinement boundary

**Recognition Category F – Fission Product Barriers (Hot Conditions ( $RCS > 200^{\circ}F$ ) only))**

- FU1 Any loss or any potential loss of Containment

**Recognition Category H – Hazards**

- HU1 Natural or destructive phenomena affecting the Protected Area or Main Dam
- HU2 Fire or explosion within the Protected Area boundary
- HU3 Release of toxic, corrosive, asphyxiant or flammable gases deemed detrimental to normal operation of the plant
- HU4 Confirmed security condition or threat which indicates a potential degradation in the level of safety of the plant
- HU5 None
- HU6 Other conditions existing which in the judgment of the SEM warrant declaration of a NOUE

**Recognition Category R – Abnormal Radiological Release / Radiological Effluent**

- RU1a Any unplanned release of liquid radioactivity to the environment that exceeds two times the radiological effluent Technical Specifications for 60 minutes or longer
- RU1b Any unplanned release of gaseous radioactivity to the environment that exceeds two times the allocated radiological effluent ODCM limits for 60 minutes or longer
- RU2 Unexpected increase in plant radiation

**Recognition Category S – System Malfunction (Hot Conditions ( $RCS > 200^{\circ}F$ ) only))**

- SU1 Loss of all offsite power to emergency busses for greater than 15 minutes
- SU2 None
- SU3 Inability to reach required shutdown within Technical Specification limits
- SU4a Unplanned loss of most or all safety-related structures, systems and components annunciation or indication in the Control Room for greater than 15 minutes
- SU4b Unplanned loss of all onsite or offsite communications capabilities
- SU5 Fuel clad degradation
- SU6 RCS leakage for 15 minutes or longer
- SU7 Inadvertent criticality



**TABLE 4.2**  
**INITIATING CONDITIONS: ALERT**

Recognition Category C – Cold Shutdown/Refueling System Malfunction  
(Cold Conditions (RCS  $\leq$  200°F) only))

- CA1 Loss of all offsite power and loss of all onsite AC power to emergency busses
- CA2 Loss of RCS inventory
- CA3 Inability to maintain plant in cold shutdown with irradiated fuel in the Reactor Vessel
- CA4 None
- CA5 None
- CA6 None

Recognition Category F – Fission Product Barriers (Hot Conditions (RCS > 200°F) only))  
FA1 Any loss or any potential loss of either Fuel Clad or RCS

Recognition Category H – Hazards

- HA1 Natural or destructive phenomena affecting a plant safe shutdown area
- HA2 Fire or explosion affecting the operability of plant safety-related structures, systems or components required to establish or maintain safe shutdown
- HA3 Access to a safe shutdown area is prohibited due to release of toxic, corrosive, asphyxiant or flammable gases which jeopardize operation of systems required to maintain safe operations or safely shutdown the reactor
- HA4 Hostile action within the Owner Controlled Area or airborne attack threat
- HA5 Control Room evacuation has been initiated
- HA6 Other conditions existing which in the judgment of the SEM warrant declaration of an Alert

Recognition Category R – Abnormal Radiological Release / Radiological Effluent

- RA1 Any unplanned release of gaseous or liquid radioactivity to the environment that exceeds 200 times the radiological effluent Technical Specifications for 15 minutes or longer
- RA2a Damage to irradiated fuel or loss of water level that has or will result in the uncovering of irradiated fuel outside the Reactor Vessel
- RA2b Release of radioactive material or increases in radiation levels within the facility that impedes operation of systems required to maintain safe operations or to establish or maintain cold shutdown

Recognition Category S – System Malfunction (Hot Conditions (RCS >200°F) only))

- SA1 AC power capability to emergency busses reduced to a single power source for greater than 15 minutes such that any additional single failure would result in loss of all AC power to emergency busses
- SA2 Automatic trip fails to shutdown the reactor and the manual actions taken from the reactor control console are successful in shutting down the reactor
- SA3 None
- SA4 Unplanned loss of most or all safety-related structures, systems and components annunciation or indication in Control Room with EITHER (1) a significant transient in progress, OR (2) compensatory non-alarming indicators are unavailable
- SA5 None
- SA6 None
- SA7 None



**TABLE 4.3**  
**INITIATING CONDITIONS: SITE AREA EMERGENCY**

Recognition Category C – Cold Shutdown/Refuel System Malfunction  
(Cold Conditions (RCS  $\leq$  200°F) only))

CS1	None
CS2	Loss of Reactor Vessel inventory affecting core decay heat removal capability
CS3	None
CS4	None
CS5	None
CS6	None

Recognition Category F – Fission Product Barriers (Hot Conditions (RCS > 200°F) only))  
FS1 Loss or potential loss of any two barriers

Recognition Category H – Hazards

HS1	None
HS2	None
HS3	None
HS4	Hostile action within the Protected Area
HS5	Control Room evacuation has been initiated and plant control cannot be established
HS6	Other conditions existing which in the judgment of the SEM warrant declaration of Site Area Emergency

Recognition Category R – Abnormal Radiological Release / Radiological Effluent

RS1	Offsite dose resulting from an actual or imminent release of gaseous radioactivity exceeds 100 mRem TEDE or 500 mRem thyroid CDE for the actual or projected duration of the release
RS2	None

Recognition Category S – System Malfunction (Hot Conditions (RCS >200°F))

SS1a	Loss of all offsite power and loss of all onsite AC power to emergency busses
SS1b	Loss of all vital DC power
SS2	Automatic trip fails to shutdown the reactor and manual actions taken from the reactor control console are <b>not</b> successful in shutting down the reactor
SS3	None
SS4	Inability to monitor a significant transient in progress
SS5	None
SS6	None
SS7	None

**TABLE 4.4**  
**INITIATING CONDITIONS: GENERAL EMERGENCY**

Recognition Category C – Cold Shutdown/Refuel System Malfunction  
(Cold Conditions (RCS  $\leq$  200°F) only))

CG1	None
CG2	Loss of Reactor Vessel inventory affecting fuel clad integrity with Containment challenged and irradiated fuel in the Reactor Vessel
CG3	None
CG4	None
CG5	None
CG6	None

Recognition Category F – Fission Product Barriers (Hot Conditions (RCS > 200°F) only))

FG1 Loss of any two barriers AND Loss or potential loss of third barrier

Recognition Category H – Hazards

HG1	None
HG2	None
HG3	None
HG4	Hostile action resulting in loss of physical control of the facility
HG5	None
HG6	Other conditions existing which in the judgment of the SEM warrant declaration of General Emergency

Recognition Category R – Abnormal Radiological Release / Radiological Effluent

RG1	Offsite dose resulting from an actual or imminent release of gaseous radioactivity exceeds 1000 mRem TEDE or 5000 mRem thyroid CDE for the actual or projected duration of the release using actual meteorology
RG2	None

Recognition Category S – System Malfunction (Hot Conditions (RCS >200°F))

SG1	Prolonged loss of all offsite power and prolonged loss of all onsite AC power to emergency busses
SG2	Automatic trip and all manual actions fail to shutdown the reactor and indication of an extreme challenge to the ability to cool the core exists
SG3	None
SG4	None
SG5	None
SG6	None
SG7	None

NOTE: The appropriate Protective Action Recommendations for the preceding conditions MUST BE provided to the State within 15 minutes following the declaration of a General Emergency.

#### **4.3 STATE AND LOCAL COUNTY EMERGENCY CLASSIFICATION SYSTEM**

The Commonwealth of Virginia Emergency Operations Plan (COVEOP) emergency classification system defines two levels based on projected radiological doses resulting from the release of radioactive materials from a fixed nuclear facility. The company will provide projected radiological doses based on plant parameters and meteorological conditions. Provisions are in the COVEOP for dose assessments within 50 miles of the station for the ingestion of radioactive material via the food pathway.

Thresholds used for protective action determination are based on projected doses recommended in Table 2.1 of EPA-400-R-92-001, "Manual of Protective Action Guides and Protective Actions for Nuclear Incidents", as implemented by the Commonwealth of Virginia.

#### **4.4 REQUIREMENTS FOR WRITTEN SUMMARIES OF EMERGENCY EVENTS**

NUREG-0654, Appendix 1 establishes the guidance for providing written summaries of emergency events to offsite authorities. A written summary is provided to VDEM following activation of the North Anna Emergency Plan. The schedule for submitting the written summary for a Notification of Unusual Event is within 72 hours following declaration. For any other classification, the schedule for submitting the written summary is within 8 hours following termination. This schedule was established with the concurrence of VDEM and subsequent notification to the NRC (reference Letter, Serial Number 84-302, dated 5-31-84).



**NORTH ANNA POWER STATION**  
**EMERGENCY PLAN**

**SECTION 5**

**ORGANIZATIONAL CONTROL OF EMERGENCIES**

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## 5.0 ORGANIZATIONAL CONTROL OF EMERGENCIES

An integral part of this Emergency plan is to assure that classifications of Notification of Unusual Event, Alert, Site Area Emergency, and General Emergency are consistently made in a timely manner. All employees are instructed to contact the Shift Manager to report any emergency. This notification and the information available to the Shift Manager in the Control Room enable a timely classification of the emergency and subsequent actions.

The Shift Manager or Unit Supervisor initially acts in the capacity of the Station Emergency Manager (SEM) and takes actions as outlined in the EIPs. If required by the emergency classification, or if deemed appropriate by the Station Emergency Manager, emergency response personnel will be notified and instructed to report to their emergency response locations. The Shift Manager is relieved as Station Emergency Manager when the Site Vice President or his designated alternate reports to the station (normally to the Control Room) and is updated as to the status of the unit, the emergency actions taken, and the current status of the emergency. Following this relief, the Station Emergency Manager may relocate to the onsite Technical Support Center (TSC).

The ~~Local Emergency Operations Facility~~ Corporate Emergency Response Center (LEOF-CERC) is activated concurrent with the TSC. The LEOF-CERC is staffed by ~~station and~~ corporate personnel, including the ~~Recovery Manager~~ Corporate Response Manager and Technical Support Manager, who directs the activities of this facility. ~~Once the LEOF is staffed, the Recovery Manager becomes the liaison between the in-plant emergency organization headed by the Station Emergency Manager and the Corporate Emergency Response Team (CERT).~~ The Recovery Technical Support Manager is responsible for ensuring the LEOF-CERC communicates emergency status to the State and local governments, directs the efforts of the offsite monitoring teams, makes radiological assessments, recommending offsite protective measures to the State, and arranging ~~through the CERT~~ for dispatch of any special assistance or services requested by the station. ~~Specific information relating to the staffing and reporting structure of the LEOF organization is provided in the Corporate Emergency Response Plan (CERP).~~

~~The Recovery Manager reports to the Corporate Response Manager who directs the activities of the CERT at the Corporate Emergency Response Center (CERC). The CERC will be activated at the ALERT or higher emergency classification. The Corporate Response Manager is a senior level company representative who is responsible to the President of the Company for the total execution of the company's emergency response effort. He has the ultimate authority to commit company resources and set policy as part of managing the long term recovery effort. More detailed information on the composition of the CERT and their responsibilities is provided in the CERP.~~

## 5.1 NORMAL STATION ORGANIZATION

The Site Vice President is ultimately responsible for the operation of the Station. The minimum staff required to conduct Station operation is maintained at the station at all times. For purposes of the Emergency Plan, the on-shift manning is assumed to be on back-shift because the normal station complement of personnel is only present during regular duty hours on scheduled work days.



The basic shift (back-shift) complement of personnel is comprised of Operations, Health Physics, Chemistry, and Security personnel with coverage by Maintenance on designated shifts. In addition, technical/engineering support is available on all shifts from the Shift Technical Advisor (STA). Station administrative procedures provide the details of the normal station organization including reporting relationships.

## **5.2 ONSITE EMERGENCY RESPONSE ORGANIZATION**

The first line of control in an emergency at North Anna Power Station lies with the on-shift personnel. The shift complement is staffed with personnel qualified to take the initial actions necessary to respond to an emergency. The organizational relationship of the on-shift emergency organization prior to augmentation is shown in Figure 5.1. Coverage by the Chemistry Team and the Damage Control Team would be provided on an as needed basis. However, augmentation of the onsite emergency organization will specifically provide such coverage. Also, personnel assigned to the Search and Rescue Team, the First Aid Team, and the Fire Brigade may be assigned other functions until their services are required. The capability of the on-shift personnel to effectively manage an emergency is assured by the timely call out of supplementary emergency response personnel. The capabilities of the assigned on-shift personnel are adequate to assess the condition of the affected unit(s) and take initial mitigative actions in accordance with emergency operating procedures including corrective actions necessary to implement procedures consistent with operations personnel training. Additionally, on-shift personnel make notifications to off-site authorities and initiate a call out of supplementary emergency response personnel as required. The EIPs are used to procedurally control these actions.

A detailed analysis of on-shift personnel assigned emergency plan implementation functions was performed under provisions of 10 CFR 50 Appendix E Part IV.A.9. This analysis determined the staff complement listed in the on-shift column of Table 5.1 can adequately perform required emergency response actions in a timely manner until augmenting ERO staff is required to arrive. This analysis considered a spectrum of events, including UFSAR Condition IV events requiring augmented ERO response, a probable aircraft threat, a design basis threat, a fire requiring Control Room evacuation and remote shutdown, a station black out, etc. This staffing analysis is incorporated by reference as a part of this emergency plan.

Should the Station Emergency Manager deem that additional emergency response personnel are needed or the emergency classification is upgraded to Alert or higher, he shall initiate the augmentation of the on shift Emergency Organization by instructing Station Security to commence callout of supplementary emergency response personnel. Table 5.1 represents the minimum number of personnel that are required to augment emergency operations and the estimated response times of these personnel.

The responsibilities of the emergency response personnel assigned on shift and those who make up the augmentation crews meet the staffing functions identified in Table B-1 of NUREG-0654. The numbers of emergency response personnel designated for both the on-shift and augmentation contingents meet or exceed the guidance. Sufficient training has been provided for the on-shift personnel to ensure that

the response actions needed to bring the affected unit(s) to a stable condition in preparation for the longer term recovery will be taken.

If an emergency occurs on one of the two units, the Shift Manager or Unit Supervisor assumes the operational responsibility for the unaffected unit. This allows the other to assume the position of Station Emergency Manager until relieved. Figure 5.2 shows the station emergency organization after full augmentation.

#### **5.2.1 Station Emergency Position and Team Descriptions**

The Station Emergency Organization, when fully implemented, will consist of at least the positions discussed below. Reporting relationships are as depicted in Figure 5.2. Additional personnel may be designated by Station Management as emergency responders providing special expertise deemed beneficial, but not mandatory, to the planned response. The individuals assigned as interim, primary and alternate responders for the emergency positions will be designated by Station Management based on the technical requirements of the position. Guidance for selection of emergency responders is provided in administrative procedures. Designated individuals will receive training in accordance with Section 8 of the North Anna Emergency Plan.

##### **5.2.1.1 Station Emergency Manager**

The Station Emergency Manager (SEM) has the responsibility of managing and directing emergency operations during the course of the emergency. The SEM initially operates from the Control Room and then transitions to the Technical Support Center. The SEM ultimately reports to the Recovery Corporate Response Manager, once augmented. SEM responsibilities shall include, but not be limited to:

- 1) Classifying the emergency,
- 2) Authorizing notification to the NRC, State and local agencies of the emergency status,
- 3) Recommending protective measures,
- 4) Authorizing emergency exposure limits,
- 5) Activating emergency personnel and facilities,
- 6) Reducing power or shutting down both reactors,
- 7) Committing company funds as necessary,
- 8) Acquiring emergency equipment or supplies,
- 9) Ordering site evacuation,
- 10) Restricting access to the site,
- 11) Notifying company management,
- 12) Implementing work schedules, and
- 13) Directing onsite emergency activities.

Items 1 through 4 above MAY NOT BE DELEGATED. The LEOF-RecoveryCERC Technical Support Manager will be responsible for assuming the non-delegatable responsibilities of notifying State and local governments of the emergency status, and for recommending offsite protective measures to the State.



#### **5.2.1.2 Emergency Communicator**

The Emergency Communicators report to the SEM in the Control Room prior to activation of the TSC, and to the TSC after its activation. The duties of the Emergency communicators are to initially notify and periodically update the Emergency Operations Centers of the counties within the 10-mile Emergency Planning Zone, the Virginia Emergency Operations Center (VEOC), and the NRC. The ~~LEOF-CERC~~ staff becomes responsible for notification of State and local governments.

#### **5.2.1.3 Emergency Procedures Coordinator**

The Emergency Procedures Coordinator (EPC) will report to the SEM in the Control Room and then relocates to the TSC as part of the augmentation of the on-shift emergency organization.

The responsibilities of the EPC include:

- 1) Assisting the SEM in assuring all appropriate procedures and responses are initiated,
- 2) Monitoring emergency action level entry conditions,
- 3) Assisting the SEM in maintaining a working document of the controlling EPIP procedures and other appropriate procedures,
- 4) Assisting the SEM in obtaining all procedures generated as a result of the emergency,
- 5) Reviewing procedures for accuracy and completeness, and
- 6) Assisting in the preparation of these documents for review by the Facility Safety Review Committee.

#### **5.2.1.4 Emergency Operations Director**

The Emergency Operations Director (EOD) reports to the SEM in the Technical Support Center as part of the augmentation of the on-shift emergency organization. His duties include directing the activities of Operations personnel, advising the SEM on emergency operations, and directing the development of procedures necessary for conducting emergency operations.

#### **5.2.1.5 Emergency Maintenance Director**

The Emergency Maintenance Director (EMD) reports to the SEM in the TSC as part of the augmentation of the on-shift emergency organization. The EMD is responsible for advising the SEM on emergency maintenance activities including prioritization, status and providing interface with the Operational Support Center (OSC) Director (when necessary).

#### **5.2.1.6 Emergency Technical Director**

The Emergency Technical Director (ETD) reports to the SEM in the TSC as part of the augmentation of the on-shift emergency organization. He directs the activities of the Technical Support Team. The Emergency Technical Director will analyze mechanical, electrical, instrumentation and control, hydraulic, thermodynamic, and reactor physics problems, and develop solutions to the problems. He shall provide technical support to the SEM and assist in developing procedures necessary for conducting emergency operations and maintenance.



#### **5.2.1.7 Shift Technical Advisor**

The Shift Technical Advisor (Control Room) will remain in the Control Room to advise the Shift Manager or Unit Supervisor on operations activities. He also provides engineering support until the Technical Support Team is staffed. Shift Technical Advisor (STA) coverage is provided on a 24-hour per day, 7-days per week on-shift basis to enable timely assistance in the Control Room.

#### **5.2.1.8 Emergency Administrative Director**

The Emergency Administrative Director (EAD) reports to the SEM in the TSC as part of the augmentation of the on-shift emergency organization. He directs activities of the Administrative Support Team and advises the Station Emergency Manager on emergency First Aid, Fire Protection, Security, Administrative and Logistical Support activities. He coordinates the acquisition of equipment, supplies, personnel, and other assistance needed to cope with the emergency. He also ensures that the TSC log keeper maintains a chronological record of key events.

#### **5.2.1.9 Radiological Assessment Director**

The Radiological Assessment Director (RAD) reports to the Station Emergency Manager in the Technical Support Center after relieving the interim director who was the Senior Radiological Protection representative on-site at the initiation of the emergency. He directs the activities of the Radiation Protection Supervisor in maintaining the Radiation Protection Program on-site during an emergency. He also directs the activities of the Dose Assessment Team and Offsite Monitoring Teams in determining offsite consequences of radiological releases until control is assumed by the Radiological Assessment Coordinator (RAC) at the [LEOFERC](#).

Other duties of the Radiological Assessment Director are to provide the status of offsite releases to the Station Emergency Manager, to direct the activities of the Chemistry Team (following augmentation), to evaluate radiological conditions and recommend onsite and offsite protective actions to the Station Emergency Manager, to provide recommendations and Health Physics coverage for onsite corrective actions, to direct decontamination efforts, and to provide advice and monitoring for evacuation of on-site personnel.

#### **5.2.1.10 Radiation Protection Supervisor**

The position of Radiation Protection Supervisor will be filled upon augmentation of the on-shift emergency organization. The Radiation Protection Supervisor normally operates from the Station Health Physics office and reports to the Radiological Assessment Director. The Radiation Protection Supervisor directs the activities of the In Plant Monitoring Team, the Sample Analysis Team, the Personnel Monitoring and Decontamination Team, the Onsite (Out of Plant) Monitoring Team, and the Evacuation Monitoring Team. He will also provide radiological support, as needed, to the Fire Brigade, First Aid Team, Search and Rescue Team, and the Damage Control Team. Additional duties include evaluating onsite radiological conditions, ensuring that appropriate monitoring and sampling is performed, checking that appropriate personnel monitoring is performed and personnel exposures are evaluated, and maintaining dose records.



He shall also recommend onsite protective measures to the Radiological Assessment Director and provide him with survey results and sample analysis results needed for offsite dose assessment.

**5.2.1.11 Operational Support Center Director (OSC Director)**

Upon augmentation of the on-site shift, the position of OSC Director will be manned. He will base his activities from the Operational Support Center and shall report to the Station Emergency Manager, normally through the EMD. The duties and responsibilities of the OSC Director include directing the activities of the Operational Support Team, planning, scheduling and material requisitioning in support of damage control tasks and development of procedures necessary for conducting emergency maintenance. The OSC Director is also responsible for dispatch and control of the Reserve Fire Brigade, the Reserve First Aid Team, the Damage Control Team, the Search and Rescue Team and standby operations personnel.

**5.2.1.12 OSC Support Team**

The OSC Support Team will operate out of the OSC under the direction of the OSC Director after augmentation of the on-shift emergency organization. The OSC Support Team plans required maintenance evolutions, develops emergency maintenance procedures, arranges for material acquisition, and can direct the efforts of the Damage Control Teams, if activated.

**5.2.1.13 Technical Support Team**

The Technical Support Team will operate out of the TSC under the direction of the ETD after augmentation of the on-shift emergency organization. The Team members include an Operational Advisor, a Reactor Engineer, a Mechanical and an Electrical Engineer. The on-duty Shift Technical Advisor has the required training to provide technical support until the Team is fully manned.

The Team shall assist the ETD in analyzing electrical, mechanical, instrumentation and control, chemistry, reactor physics, hydraulic and thermodynamic problems and in developing solutions to the problems. The Team shall also assist in developing procedures necessary to deal with the emergency condition.

**5.2.1.14 Chemistry Team**

The Chemistry Team, after augmentation, reports to the RAD/designee and operates out of the Chemistry area of the Station.

The Chemistry Team will conduct liquid and gaseous sampling, and sample analysis, as directed.

**5.2.1.15 Administrative Support Team**

The Administrative Support Team will assist the Emergency Administrative Director on emergency fire protection, security, administrative and logistical support activities. The Team will also provide clerical and records support.

If the emergency is Security related, the Administrative Support Team Leader may report directly to the Station Emergency Manager. In a fire or first aid emergency, the Safety/Loss Prevention representative may transfer from the Administrative Support team and report directly to the Station Emergency Manager.



#### **5.2.1.16 Security Team**

The Security Team reports to the EAD. The Team will maintain personnel accountability, provide site access control, and provide station security. The Team will also maintain liaison and communications with local law enforcement agencies in accordance with procedural guidelines or when directed to do so by the Station Emergency Manager.

#### **5.2.1.17 Dose Assessment Team**

This Team will operate out of the TSC under the direction of the RAD. The Dose Assessment Team maintains contact with and transmits instructions to Offsite Monitoring Teams, performs offsite dose assessment calculations, and provides the Radiological Assessment Director with offsite release calculations and dose projections. The Team will also assign an individual to transmit Health Physics and environmental information to the NRC using the Health Physics Network (HPN) phone.

The Dose Assessment Team Leader will report the results of the offsite releases and dose projections to date to the RAC. The Dose Assessment Team Leader will also inform the RAC of the locations of the Offsite Monitoring Teams and of the current data received from these teams.

Control of Offsite Monitoring Teams and responsibility for making HPN notifications will transfer to the LEOFCERC. The Dose Assessment Team will then provide support to the RAD regarding onsite response and interface with the LEOFCERC.

#### **5.2.1.18 Offsite Monitoring Teams**

These Teams will report to the Dose Assessment Team in the TSC or to the RAC-Accident Assessment Team in the LEOFCERC. These Teams will provide offsite monitoring and sample collection as directed by the Dose Assessment Team or the RAC.

#### **5.2.1.19 Evacuation Monitoring Team**

This Team is under the direction of Radiation Protection Supervisor and is activated at the Remote Assembly Area only if a site evacuation is ordered.

The duties of this Team include monitoring station personnel at the Remote Assembly Area following a site evacuation, collecting evacuated personnel dosimetry, and decontaminating personnel as necessary.

#### **5.2.1.20 In-Plant Monitoring Team**

The In-Plant Monitoring Team reports to the Radiation Protection Supervisor in the Station Health Physics Office. This Team will perform monitoring and sample collection inside the protected area. The team will also provide monitoring services to the Search and Rescue Team, the Damage Control Team, the Fire Brigade, and the First Aid Team, if required.

**5.2.1.21 Sample Analysis Team**

The Sample Analysis Team reports to the Radiation Protection Supervisor in the Station Health Physics Office. The team shall analyze samples collected offsite as well as post accident liquid and gaseous samples.

**5.2.1.22 Personnel Monitoring and Decontamination Team**

This Team reports to the RPS in the Station HP Office. The Team will monitor personnel, decontaminate personnel, and provide monitoring services to the Search and Rescue Team, the Damage Control Team, the Fire Brigade, and the First Aid Team, if required.

**5.2.1.23 Onsite (Out of Plant) Monitoring Team**

This Team reports to the RPS and operates out of the Station HP Office. The team will perform monitoring and sample collection within the site boundary but outside the protected area.

**5.2.1.24 Fire Brigade**

The Fire Brigade members arriving at the Station to augment the on-shift Fire Brigade will report to the Loss Prevention Coordinator in the OSC and remain there until their services are needed. Upon activation, the Team reports to the Loss Prevention Coordinator, Station Emergency Manager or responsible Emergency Director, as needed.

The Fire Brigade will combat fires in accordance with the Station Fire Protection Program. The on-shift Fire Brigade members with other duties will not report to the OSC, but will remain in their normal duties unless called out to combat a fire.

**5.2.1.25 First Aid Team**

The First Aid Team members reporting to the Station to augment the on-shift First Aid Team will report to the Loss Prevention Coordinator in the OSC and remain there until their services are needed. Upon activation, the Team reports to the Loss Prevention Coordinator, Station Emergency Manager or responsible Emergency Director, as needed.

The Team will respond to first aid emergencies in accordance with the Station Administrative Procedures and in accordance with standard first aid practices.

The on-shift First Aid Team members will remain in their normal duties unless activated to respond to a first aid emergency.

**5.2.1.26 Damage Control Team**

The Damage Control Team will report to the OSC Director. When their support is required, the team will report to the EMD or the responsible emergency director as needed.

The Damage Control Team will perform emergency assessment and repairs. The Team composition will be determined by the technical expertise required to address the specific problem. Personnel capable of dealing with mechanical, electrical, or instrumentation problems will be assigned to the Team.



#### **5.2.1.27 Search and Rescue Team**

This Team will report to the OSC Director in the OSC until circumstances require their function to be performed. Upon activation, the Team will report to the SEM, the Safety/Loss Prevention representative or the designated Emergency Director as needed.

Prior to arrival of augmentary personnel, an on-shift Fire Brigade Scene Leader will lead the Team. The Team members will be members of the Fire Brigade and the First Aid Team. The Search and Rescue Team will search for and rescue personnel following an explosion, a fire, or any other hazardous event. The Team can be used to locate personnel who are unaccounted for during an emergency.

#### **5.2.2 Corporate Emergency Position and Team Descriptions**

The CERC Emergency Organization, when fully implemented, will consist of at least the positions discussed below. Reporting relationships are as depicted in Figure 5.2. Additional personnel may be designated by corporate management as emergency responders providing special expertise deemed beneficial, but not mandatory, to the planned response. The individuals assigned as interim, primary and alternate responders for the emergency positions will be designated by corporate management based on the technical requirements of the position. Guidance for selection of emergency responders is provided in administrative procedures.

The Joint Information Center (JIC) is activated in accordance with the Commonwealth of Virginia Radiological Emergency Response Plan.

##### **5.2.2.1 Corporate Response Manager**

The Corporate Response Manager (CRM) assumes overall control and operation of the CERC, and is responsible for allocating the use of company resources to aid the affected station(s) in the mitigation of and recovery from an accident. The CRM works with state and federal agency representatives located in the CERC and approves press releases. The CRM supervises the Station Emergency Manager, the Technical Support Manager, the Resource Manager, the Nuclear News Manager, the Chief Technical Spokesperson, the Executive Liaison and Emergency Plan Advisor.

##### **5.2.2.2 Technical Support Manager**

The Technical Support Manager (TSM) reports to the CRM and is responsible for ensuring that prompt and accurate dose assessments are performed; notifying state and local governments of the emergency status and any changes in a timely manner; assessing and providing protective action recommendations to offsite authorities; ensuring that statements issued to the media are technically correct and factual; and working with the SEM to determine the need to escalate or de-escalate the emergency classification. The TSM supervises the Operations Support Team and Accident Assessment Team.

##### **5.2.2.3 Resource Manager**

The Resource Manager (RM) reports to the CRM and is responsible for logistical and administrative support for the CERC. The RM supervises the Resource Team.



#### **5.2.2.4 Nuclear News Manager**

The Nuclear News Manager (NNM) reports to the CRM and is responsible for overall control for all media and public information functions. The NNM supervises the News Team and coordinates with the JIC Support Team.

#### **5.2.2.5 Chief Technical Spokesperson**

The Chief Technical Spokesperson (CTS) reports to the CRM and is responsible for serving as the official company spokesperson, responding to technical inquiries from the news media, and conducting press briefings. The CTS supervises the JIC Support Team.

#### **5.2.2.6 Executive Liaison**

The Executive Liaison (EL) reports to the CRM and is responsible for interfacing with senior Dominion management with respect to event status.

#### **5.2.2.7 Emergency Plan Advisor**

The Emergency Plan Advisor (EPA) reports to the CRM and is responsible for providing assistance with facility operations and interpretation of the North Anna Emergency Plan, including emergency action levels, emergency classifications, protective action recommendations, monitoring siren control system status, and interface with offsite response organizations.

#### **5.2.2.8 Operations Support Coordinator**

The Operations Support Coordinator (OSC) reports to the TSM and is responsible for providing advice on unit conditions and methods being implemented to mitigate the incident, and assisting in the development of the Recovery Plan after incident mitigation. The OSC supervises the Operations Support Team.

#### **5.2.2.9 Operations Support Team**

The Operations Support Team monitors plant conditions using the Plant Computer System (PCS), transmits notifications to the VEOC and local governments, maintains communications with the TSC, and maintains a log of significant events.

#### **5.2.2.10 Radiological Assessment Coordinator**

The Radiological Assessment Coordinator (RAC) reports to the TSM and is responsible for directing performance of emergency dose calculations; directing field team radio operator activities; dispatching Offsite Field Team members, as necessary; tracking the dose of Offsite Field Team members; projecting offsite doses; obtaining weather forecasts, as necessary; comparing offsite survey data with offsite dose projections; formulating protective action recommendations (PARs); briefing the CERC staff and federal/state counterparts on radiological conditions and PARs; tracking the plume; and identifying any supplemental resources needed. The RAC supervises the Accident Assessment Team.

#### **5.2.2.11 Accident Assessment Team**

The Accident Assessment Team will analyze core conditions and accident progression, develop dose projections, direct the movement and activities of Offsite Field Teams described in Section 5.2.1.18, and establish the Health Physics Network (HPN) when requested by the NRC.



#### **5.2.2.12 Resource Team**

The Resource Team will provide logistical and administrative support, including development of long-term staffing plans and acquiring supplemental staff as appropriate (e.g., Telecommunications, Information Technology, Company Meteorologist, etc.).

#### **5.2.2.13 News Team**

The News Team will develop and coordinate review of press releases and other means of providing information to the public, and issue approved information.

#### **5.2.2.14 Joint Information Center Support Team**

The Joint Information Center Support Team will assist the CTS by providing technical advice and interface with offsite response organization public information staff at the JIC, when activated.

### **5.3 AUGMENTATION OF ~~ON~~SITE EMERGENCY RESPONSE ORGANIZATION**

The Station Emergency Manager has the authority to request assistance from any organization which he deems necessary to mitigate the conditions causing the emergency. In addition, the Station Emergency Manager may request offsite assistance in fire fighting, rescue services, law enforcement, and medical support prior to augmentation of the onsite emergency organization (see Figure 5.3). The participating agencies and support services with whom emergency support services have been negotiated are listed, ~~by letters of agreement,~~ in Appendix 10.1 of this Plan.

If conditions at the Station require an Alert or higher classification, the CERC, ~~LEOF,~~ TSC and OSC shall be activated (unless special circumstances apply). The facility activation goal for ~~the LEOF, TSC and OSC~~ these emergency response facilities is approximately 60/75 minutes following declaration of an Alert or higher emergency class. Special circumstances include those where the movement of emergency responders could place them at risk, e.g., security conditions, severe weather, hazardous environments. Facility activation requires the assembly of required positions in or under the operational control of the designated facility leader and their declaring the facility activated. The Station Emergency Manager would normally forward information or request additional support through the ~~Recovery-Corporate Response~~ Manager located in the ~~LEOF-CERC~~. (See Figure 5.4). ~~Upon completion of the notification, the Recovery Manager would notify the Corporate Response Manager and provide recommendations concerning additional manpower, equipment, services, and the overall participation of the Corporate Emergency Response Team (CERT).~~ Additional resources shall be obtained through personnel assigned to the ~~CERT~~ CERC. Those additional personnel directed to report to the site during the emergency shall report to ~~either the Station Emergency Manager or Recovery Manager for assignment, as appropriate.~~ Figures 5.5.a-d display minimum staff required for activation.

~~The Corporate Response Manager has the ultimate responsibility for directing the corporate emergency response. Corporate support would be coordinated between the Station Emergency Manager and the Recovery Manager at the LEOF. The Recovery Manager and his staff will serve as the point of contact between station personnel, the corporate emergency response staff, and governmental authorities.~~



~~In the event that the LEOF becomes uninhabitable, the functions of the LEOF will be transferred to the Central EOF (CEOF) located in Glen Allen, Virginia.~~

### **5.3.1 CERT Notification and Response**

~~The Corporate Emergency Response Team emergency response organization (ERO) is notified to augment in the event of an Alert, Site Area Emergency or General Emergency. This will also activate the Corporate Emergency Response Plan as the team members report to the Corporate Emergency Response Center (CERC) in Glen Allen, Virginia. The LEOF Recovery Manager will become the liaison between the Station and the CERC. He will provide recommendations concerning the corporate response based on the emergency classification. The Corporate Emergency Response Plan establishes the necessary guidelines for both the CERC and the LEOF to assist the station staff in managing the emergency. These include the~~The following functions ~~which~~ may be necessary for emergency mitigation and recovery:

#### **5.3.1.1 Environmental Monitoring**

Provisions for obtaining additional environmental monitoring personnel shall be the responsibility of the ~~CERT~~CERC.

#### **5.3.1.2 Logistics Support for Emergency Personnel**

~~CERT Administrative Services~~The CERC Resources Manager will be responsible for all administration and logistics including accommodations, Corporate communications, purchasing, finance, commissary, sanitary, transportation, and security services.

#### **5.3.1.3 Technical Support for Planning and Re-entry/Recovery Operations**

Technical support for recovery and subsequent re-entry would be directed by the ~~Recovery~~ Corporate Response Manager. Trained technical personnel are available in the areas of nuclear fuel management, water quality, air quality, engineering, health physics, and chemistry. Additional technical support would be obtained from Surry Power Station, A/E, and NSSS vendor. Consulting services would be obtained as necessary.

Technical support for recovery and subsequent re-entry would be directed by the Recovery Manager. Trained technical personnel are available in the areas of nuclear fuel management, water quality, air quality, engineering, health physics, and chemistry. Additional technical support would be obtained from Surry Power Station, A/E, and NSSS vendor. Consulting services would be obtained as necessary.

#### **5.3.1.4 Interface with Governmental Authorities**

~~CERT-CERC~~ management is responsible for contacting governmental agencies when coordinating mobilization of resources or requesting additional support. The ~~Local Emergency Operations Facility~~CERC, once activated, serves as principal point of interaction between Station and governmental authorities once they are mobilized.

#### **5.3.1.5 Release of Information to News Media**

News releases shall be coordinated with the External Affairs Department. The Chief Technical Spokesperson is responsible for meeting with the news media. Releases will be coordinated with the appropriate governmental authorities. Briefings will be conducted at the Joint Information Center at the



NOTE: Update of references to legacy vendors is beyond the scope of this license amendment request.

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Virginia State Police Administrative Headquarters in Chesterfield, Virginia and, when activated, at the Local Media Center in the North Anna Nuclear Information Center (NANIC). ~~The process for preparing, reviewing and distributing information to the public during emergencies is detailed in the CERP.~~

### **5.3.2 Vendor and Supplemental Personnel**

Support will be obtained from the A/E, the NSSS vendor, and other consultants and vendors as needed to respond to the emergency and recovery operations. Experienced personnel with in-depth expertise in Station design, engineering and construction will be obtained to aid in solving critical technical problems.

This support is normally solicited by the Corporate Response Manager or his representative. In the event of an emergency, **Westinghouse** (the NSSS vendor) will also be informed of the plant status. In addition, the Institute of Nuclear Power Operations can be contacted to provide sources of additional support, if necessary.

In addition, radiological count laboratory resources are available through the Commonwealth to respond to an emergency at the Station. These resources include those facilities listed below. Estimated travel times to the station are provided parenthetically:

1. University of Virginia, Charlottesville, VA (45 minutes)
2. Virginia Department of General Services, Division of Consolidated Laboratory Services, Richmond, VA (75 minutes)
3. Virginia Commonwealth University Medical Center, Richmond, VA (75 minutes)
4. Newport News Shipbuilding & Drydock, Newport News, VA (3 1/2 hours)
5. Virginia Department of Health, Office of Radiological Health Mobile Laboratory (1 hour)

If required at the time of the event, additional resources can be obtained through purchase agreements with private institutions. These agreements would not be prepared in advance, but would be negotiated on an as needed basis.

### **5.3.3 Local Services Support**

Agreements have been arranged to provide fire fighting, rescue squad, medical and hospital services. Responding rescue squads are trained in the handling, treatment, and transportation of injured personnel.

The Virginia Commonwealth University Medical Center (VCUMC) has developed an Emergency Plan designed to provide medical care in the case of a radiation emergency. The MCVH/VCU Radiation Emergency Plan supports the company's nuclear power stations in the case of occupational and/or major accidents, including contaminated personnel. In the event of a need for their support, a call ahead to VCUMC will be made to alert them to activate their Radiation Emergency Plan. A copy of the plan is maintained on file by Nuclear Emergency Preparedness Department and is incorporated into this plan by reference as Appendix 10.9.

Letters of Agreement in support of the North Anna Emergency Plan are re-negotiated once every 2 years. Copies of current agreements are maintained on file by the Nuclear Emergency Preparedness



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~~department. These agreements and new agreements will be included in Appendix 10.1 at the next plan revision.~~ Agreement letters are limited to Federal, State, Local, and volunteer organizations. Negotiation responsibility lies with the **Director Nuclear Emergency Preparedness**.

#### **5.4 COORDINATION WITH PARTICIPATING GOVERNMENT AGENCIES**

The State organization for response to radiological emergencies is based on normal governmental structures and channels of communication. The Governor, in his role as Director of Emergency Management, directs the emergency response through the State Coordinator of Emergency Management. The State Coordinator of Emergency Management coordinates the overall response, and the Department of Health provides technical advice and assistance on radiological accident assessment, protective action, radiological control, and radiological monitoring.

Responsibility for radiological emergency response rests primarily with the elected officials of local governments. As time is a major factor in realizing the benefits of protective action in the event of a radiological emergency, certain of these actions are predetermined and agreed upon by the local governing body and are implemented without delay upon notification of a radiological emergency. An Insta-phone (dedicated county and state ringdown loop), continuously monitored by the Operations Shift, with extensions available in the Control Room, TSC and **LEOFCERC**, is used for normal transmission of emergency notifications to these authorities (See Section 7.2.2.5). Procedures for authentication of an emergency, via the use of restricted, unpublished call-back telephone numbers, are maintained in State and local Radiological Emergency Response Plans. When notification is received, the Commonwealth of Virginia Emergency Operations Plan (COVEOP) is implemented and the Virginia Department of Health (VDH) initiates action to assess and evaluate the radiological situation in order to provide guidance and assistance to local governments. After the initial immediate actions, subsequent protective actions are made based on the results of the State evaluation of the radiological situation and the company's recommendations. State and Federal agencies provide assistance as required. Response operations at the State level are coordinated by the Virginia Department of Emergency Management (VDEM).

The State will also provide police support during activation of this plan. In the event of an emergency, the dispatcher at the State Police Headquarters in Richmond, Virginia would normally be called. The first response would most likely be from police units normally based in the local area. These resources would be supplemented by additional units dispatched from other parts of the state. The State Police would also provide traffic control and additional security.

The Virginia Department of Game and Inland Fisheries is also part of the response to this Plan. Their role would be to assist in monitoring Lake Anna and provide knowledge of local terrain. The local County Sheriffs of Louisa and Spotsylvania counties also respond to this Plan. They can perform essentially the same functions as the State Police and coordinate their efforts with that organization.

In the event of an emergency, the Station will be in communication with the Louisa, Spotsylvania, Orange, Hanover, and Caroline Directors of Emergency Services who have the capability of activating their Emergency Operations Centers. The Station relies upon these counties to provide assistance in the event



an evacuation from the site requires a remote assembly point or for any services the counties are capable of providing to mitigate the results of the emergency.

The Station relies upon Louisa and the Commonwealth of Virginia to coordinate response with other local, state, and federal agencies during a large scale incident, such as a hostile action against the station or a security event. Response agencies will use Incident Command Systems (ICS) guidelines in managing large scale incidents.

The Station will also maintain close contact with the NRC Operations Center and/or the NRC Region II offices in Atlanta, Georgia. This is an important function to ensure that accurate information and assessment of the emergency are available to the Federal Government. As a result of these communications, the NRC can best appraise their response to the emergency. In a like manner, the U.S. Department of Energy, Oak Ridge Operations, is available to provide radiological assistance to the Station.

The Station has the responsibility to provide to supporting agencies involved in the recovery of the facility or participating in controlling the emergency the necessary information to permit them to use their resources. In the case of the local counties, the Company provides communication and, when needed, training. This training takes the form of participation in drills and exercises by the county and radiological training for members of local volunteer rescue squads and fire departments. The Company and/or Station will arrange drills and exercises on a routine basis to ensure the plan is workable and to gain experience in its implementation.

The total effort of all parties involved shall be directed toward minimizing the results of an emergency and working toward the recovery of the facility with the least impact on the population at large.

CERC personnel coordinate support activities with federal and state agencies responding to the emergency and/or recovery. The Corporate Response Manager may also assemble NRC, state, vendor, and/or consultant support at the CERC. Assistance may be sought from other nuclear utilities, if needed. If requested by the State EOC, a Company technical representative will be dispatched to provide technical interpretation or clarification of data transmitted to that office. (This individual's responsibilities do not include making statements to the media.)

#### **5.4.1 Commonwealth of Virginia Department of Emergency Management (VDEM)**

The State Coordinator of Emergency Management coordinates the overall response operations at the State level and performs specific duties as defined in the COVEOP.

The VEOC is located in Richmond, Virginia. There are local Emergency Operations Centers in Louisa and Spotsylvania Counties. The VDEM will send appropriate liaison personnel to the ~~Local Emergency Operations Facility~~Corporate Emergency Response Center upon activation.

#### **5.4.2 Commonwealth of Virginia Department of Health (VDH)**

VDH personnel, in coordination with VDEM, provide technical advice and assistance on radiological accident assessment, protective actions, radiological exposure control, and radiological monitoring. (Reference COVEOP for more specific information.) Upon either an Alert or higher classification, VDEM will notify VDH's Office of Radiological Health which will then implement its response procedures. Included in



the planned response is a team sent to the ~~LEOC~~CERC, which provides a direct interface between VDH and their Radiological Emergency Response Team (RERT) operating from the VEOC. VDH also provides advice and assistance, as required, to Local Health Districts which provide primary health services to their respective areas.

#### **5.4.3 Additional State Agency Support**

Additional State organizations having possible responsibilities in a radiological emergency are listed in COVEOP. Requests for support services from these organizations will be coordinated through VDEM by the SEM or the ~~Recovery~~CERC Resource Manager.

#### **5.4.4 Louisa County**

The authority and responsibilities of Louisa County are presented in the Louisa County Radiological Emergency Response Plan (RERP). The Louisa County Radiological Emergency Response Plan applies to radiological emergencies within the county and:

- a. Assigns responsibilities to county offices and organizations for radiological emergency response and preparedness.
- b. Sets forth procedures for disseminating warning of radiological emergencies to the citizens of the county.
- c. Specifies response actions for specific emergency classifications.
- d. Delineates the policies and concepts under which the county government will operate in radiological emergency response.

Upon notification from the Station Emergency Manager, the Sheriff's Office will notify the County Coordinator of Emergency Services, or his designated representative, who shall:

- a. Check the notification from the Power Station.
- b. Initiate the key county official's alert system.
- c. Initiate public warning procedures, as authorized by the appropriate State authority.
- d. Prepare for evacuation of people for the affected area if authorized by the appropriate State authority.

The County Coordinator of Emergency Services or his representative will activate and ensure that the EOC is manned 24 hours per day.

Once initial notifications are complete, the Station Emergency Manager or ~~Recovery~~Technical Support Manager provides periodic status reports to the County Coordinator of Emergency Services. These reports will include any changes in status or emergency classification. The County Sheriff's Office will serve as the local point for official communications within and out of the county, prior to establishment of the County Emergency Operations Center (EOC). When the EOC is established, this responsibility will transfer to the EOC.

#### **5.4.5 Spotsylvania, Caroline, Hanover, and Orange Counties**

The authority and responsibilities of the above counties during a radiological emergency are presented in their respective RERP. The RERPs apply to the radiological emergencies within these localities caused by events at the North Anna Power Station. The Spotsylvania, Caroline, Hanover, and

Orange County RERPs are identical to the Louisa RERP, as described in Section 5.4.4 of this Plan, except for information that is specific to the respective counties.

In the event of an emergency of any classification, the SEM will notify all local jurisdictions (Louisa, Spotsylvania, Caroline, Hanover, and Orange and the State) by using the Insta-phone loop. If the Insta-phone is out of service, regular commercial telephone will be used to make the notifications and the above localities have a system to call back to the power station and check the message. All local jurisdictions provide 24 hour per day coverage.

#### **5.4.6 Counties and Cities Within the Fifty Mile Ingestion Emergency Planning Zone (EPZ)**

The counties that are directly involved in the emergency plan are Louisa and Spotsylvania. These counties are the major component of the 10 mile zone. They have emergency response functions as previously stated in this section. The counties and cities within the fifty mile EPZ are listed in Table 5.3.

In the event of an emergency, notification and coordination with these entities is the responsibility of the VEOC.

#### **5.4.7 Federal Radiological Monitoring and Assessment Center (FRMAC) Operations Plan**

The FRMAC Operations Plan provides for the coordinated management of Federal technical response activities related to a radiological emergency. Its primary goals include:

- Assisting the State and Federal Coordinating Agency with personnel, equipment, and technical resources, as needed;
- Collecting offsite environmental radiological data; and,
- Providing the data and related assessments to involved State agencies and to the Federal Coordinating Agency.

The Department of Energy (DOE), because of its history and capabilities in radiological monitoring and assessment, was assigned the responsibility to prepare for, establish, and manage the FRMAC. The FRMAC may be activated when a major radiological emergency exists, and the Federal government will respond when a State, other governmental entity with jurisdiction, or a regulated entity requests federal support.

The SEM, ~~Recovery Manager~~ or Corporate Response Manager may request FRMAC assistance directly or through the NRC (Federal Coordinating Agency). The Company will provide designated facilities (space and communications equipment) for the NRC (Federal Coordinating Agency) in the ~~LEOFCERC~~. It is estimated that a FRMAC Advance Party could be expected at the site within 6 to 14 hours following the order to deploy, based on the availability of airports near North Anna. Richmond International Airport (RIC) is a major commercial facility and is within about an 85 minute drive from the station. Smaller airports located within about an hour of the site may also be used.

Further information concerning objectives and organization is provided in the FRMAC Operations Plan (See Appendix 10.10).



**TABLE 5.1**  
**MINIMUM STAFFING REQUIREMENTS FOR EMERGENCIES**

**Bolded** titles indicate 10 CFR 50 Appendix E Part IV.A.9 minimum on-shift requirements.

Major Functional Area	Location	Major Tasks	Emergency Title	On Shift	Additional Within <del>Approx.</del>	
					<del>4560</del> Min.	<del>6075</del> Min.
Assessment of Operational Aspects	CR	Supervision of Station Operations and Assessment of Operational Aspects	<b>Shift Manager-(SRO)</b>	<b>1</b>	-	-
	CR	Plant Operations	<b>Unit Supervisor (SRO)</b>	<b>2</b>	-	-
			<b>Control Room Operator (RO)</b>	<b>4</b>	-	-
			<b>Control Room Operator (AO)</b>	<b>8</b>	-	-
Emergency Direction and Control	CR/TSC	Direction and Control of On-Site Emergency Activities	Station Emergency Manager	1 <sup>a</sup>	-	1
Notifications and Communications	CR/TSC	Notify Offsite Support Groups and Maintain Communications	Emergency Communicator	2 <sup>b</sup>	-	2
Support of Operational Accident Assessment	<del>EOF</del> <del>CERC</del>	Management of Emergency Response Resources and Recovery Operations	<del>Recovery</del> <del>Technical Support</del> Manager	(Refer to Table 5.2)		
Radiological Accident Assessment	<del>TSC/EOF</del> <del>CERC</del>	Radiological Dose Assessment/ <del>Accident</del> <del>Assessment</del>	<b>Radiological Assessment Director/</b> Radiological Assessment Coordinator	<b>1<sup>c</sup></b>	1	-
	Offsite	Offsite Surveys	Offsite Monitoring Team Leader	-	1	1
			Offsite Monitoring Team Member	-	1	1
	Onsite	Onsite (Out of Plant) Surveys	Onsite Monitoring Team Leader	-	1	-
			Onsite Monitoring Team Member	-	1	-



Major Functional Area	Location	Major Tasks	Emergency Title	On Shift	Additional Within <del>Approx.</del>	
					<del>4560</del> Min.	<del>6075</del> Min.
Radiological Accident Assessment [continued]	In-Plant	In-Plant Surveys and Radiochemistry	<b>In-Plant Monitoring Team Leader</b>	1	-	-
			In-Plant Monitoring Team Member	-	1	1
		In-Plant Chemistry	Chemistry Team Leader	-	-	1
			<b>Chemistry Team Member</b>	1	-	1
Plant Systems Engineering Repair and Corrective Actions	CR/TSC	Operational Technical Support (STA)	<b>Shift Technical Advisor</b>	1 <sup>d</sup>	-	-
			Technical Support Team Member (Operational Advisor)	-	-	1 <sup>e</sup>
	TSC	Core and Thermal Hydraulics	Technical Support Team Member	-	-	1 <sup>f</sup>
	TSC	Electrical	Technical Support Team Member	-	-	1
	TSC	Mechanical	Technical Support Team Member	-	-	1
		Repair and Corrective Actions				
	OSC	Mechanical Maintenance	Damage Control Team Member	1 <sup>g</sup>	-	2
	OSC	Electrical Maintenance	Damage Control Team Member	1 <sup>g</sup>	1	1
	OSC	Instrumentation and Control	Damage Control Team Member	-	1	1
In-Plant Protective Actions	In-Plant	Radiation Protection	Personnel Monitoring Team Leader	-	1	1
		Personnel Monitoring and H.P. Coverage, Dosimetry and Access Control	<b>Personnel Monitoring Team Member</b>	1 <sup>h</sup>	-	2

Major Functional Area	Location	Major Tasks	Emergency Title	On Shift	Additional Within <del>Approx.</del>	
					4560 Min.	6075 Min.
Firefighting	In-Plant	Firefighting	Fire Brigade Members (Operations)	3 <sup>i</sup>	local support	
			<b>Fire Brigade Members (Security)</b>	2 <sup>i</sup>		
First Aid & Rescue	In-Plant	First Aid	First Aid Team Member	2 <sup>j</sup>	local support	
	In-Plant	Search and Rescue	Search and Rescue Team Member	2 <sup>j</sup>	-	2 <sup>j</sup>
Site Access Control and Personnel Accountability	In-Plant	Security and Access Control	Security Team Members		(Proprietary)	
	In-Plant	Personnel Accountability	Security Team Leader		(Proprietary)	
				22	9	19

NOTES:

- a This coverage is provided by the Shift Manager until relieved.
- b Communicator taken from the complement of reactor operators/auxiliary operators on shift.
- c This coverage is provided by the Senior RP representative onsite until relieved.
- d Numbers shown are for 2 Unit Operation. With both units in cold shutdown condition, the minimum shift crew will be as defined in 10CFR50.54(m)(2)(i) and the Technical Specifications.
- e The candidates for this position are limited to qualified STAs, SROs, former STAs, or former SROs.
- f The on-duty Shift Technical Advisor performs the responsibilities of this position prior to augmentation.
- g Mechanical and electrical maintenance personnel are normally onsite on a 16 hour per day, 7 day per week basis. This coverage may be provided by personnel who are assigned to other functions during the period that mechanical and electrical maintenance personnel are not onsite (not counted in total).
- h This personnel monitoring team member is qualified to provide RP job coverage duties.
- i The Fire Brigade consists of auxiliary operators on shift and other qualified non-operations personnel.
- j This coverage is provided by personnel who may be assigned other functions (not counted in total).

**TABLE 5.2**

**EMERGENCY AND RECOVERY CORPORATE RESPONSE  
REQUIRED FOR NUCLEAR STATION EMERGENCIES**

(ALERT STATUS AND ABOVE)

<u>Major Functional Area (Emergency Position Title)</u>	<u>Major Tasks</u>	<u>Available In</u>
Management of <del>Local</del> <del>Emergency Operations</del> <del>Facility (Recovery</del> <del>Manager)Corporate</del> <del>Emergency Response</del> <del>Center (Corporate</del> <del>Response Manager)</del>	To coordinate the Company's response to emergency and recovery with Federal, State and local authorities.	<del>75 min.1 hr.</del>
Health Physics & Chemistry (Radiological Assessment Coordinator)	Report to the <del>Recovery</del> <del>Technical Support</del> Manager to conduct radiological assessment activities.	<del>75 min.1 hr.</del>
Technical Support (Technical Support Manager)	Reports to the Corporate Response Manager to provide technical and evaluation support.	<del>75 min.1 hr.</del>
Plan/Design/Construction ( <del>Plan/Design/Construction</del> <del>Resource</del> Manager)	Reports to the Corporate Response Manager to provide engineering technical and vendor support in areas dealing with construction or design changes.	<del>75 min.1 hr.</del>
News Center interface (Chief Technical Spokesperson)	Reports to the Corporate Response Manager to become the Company Spokesperson in any statements to the News Media.	<del>75 min.1 hr.</del>



TABLE 5.3

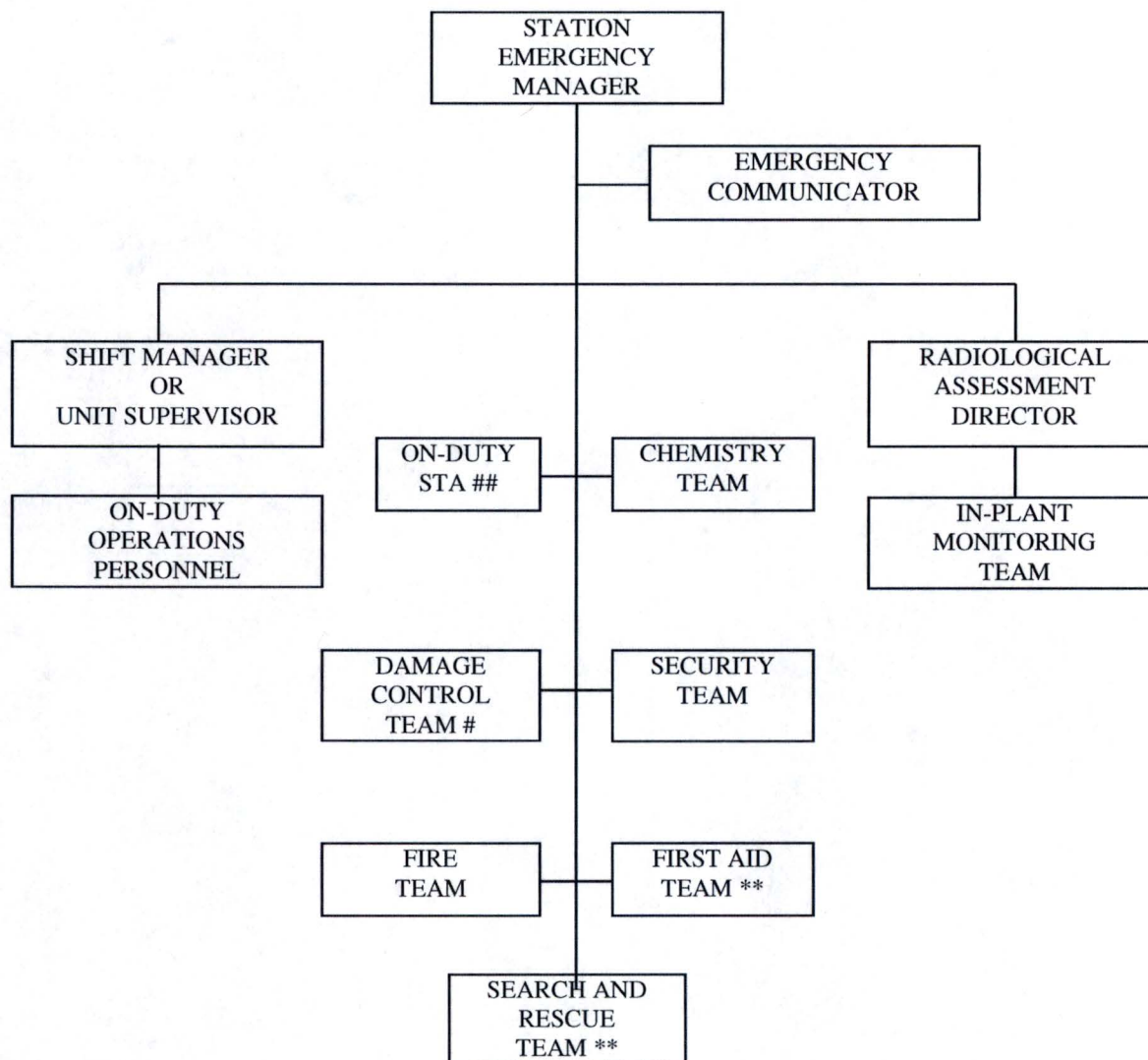
CITIES AND COUNTIES WITHIN THE NORTH ANNA 50 MILE EMERGENCY PLANNING ZONE \*\*

1.	City of Charlottesville	21.	Louisa County
2.	City of Fredericksburg	22.	Madison County
3.	City of Richmond *	23.	Nelson County
4.	Albemarle County	24.	Orange County
5.	Amelia County	25.	Page County
6.	Buckingham County	26.	Powhatan County
7.	Caroline County	27.	Prince William County
8.	Chesterfield County *	28.	Rappahannock County
9.	Culpeper County	29.	Rockingham County
10.	Cumberland County	30.	Spotsylvania County
11.	Essex County *	31.	Stafford County
12.	Fauquier County	32.	Westmoreland County
13.	Fluvanna County		
14.	Goochland County		
15.	Green County		
16.	Hanover County *		
17.	Henrico County *		
18.	King and Queen County *		
19.	King George County		
20.	King William County *		

\* Within 50 miles of both Surry and North Anna

\*\* That portion of the State of Maryland lying within the 50 mile zone has been excluded. (Reference NRC Letter of February 6, 1981, Serial Number 100).

STATION EMERGENCY ORGANIZATION PRIOR TO AUGMENTATION \*  
FIGURE 5.1



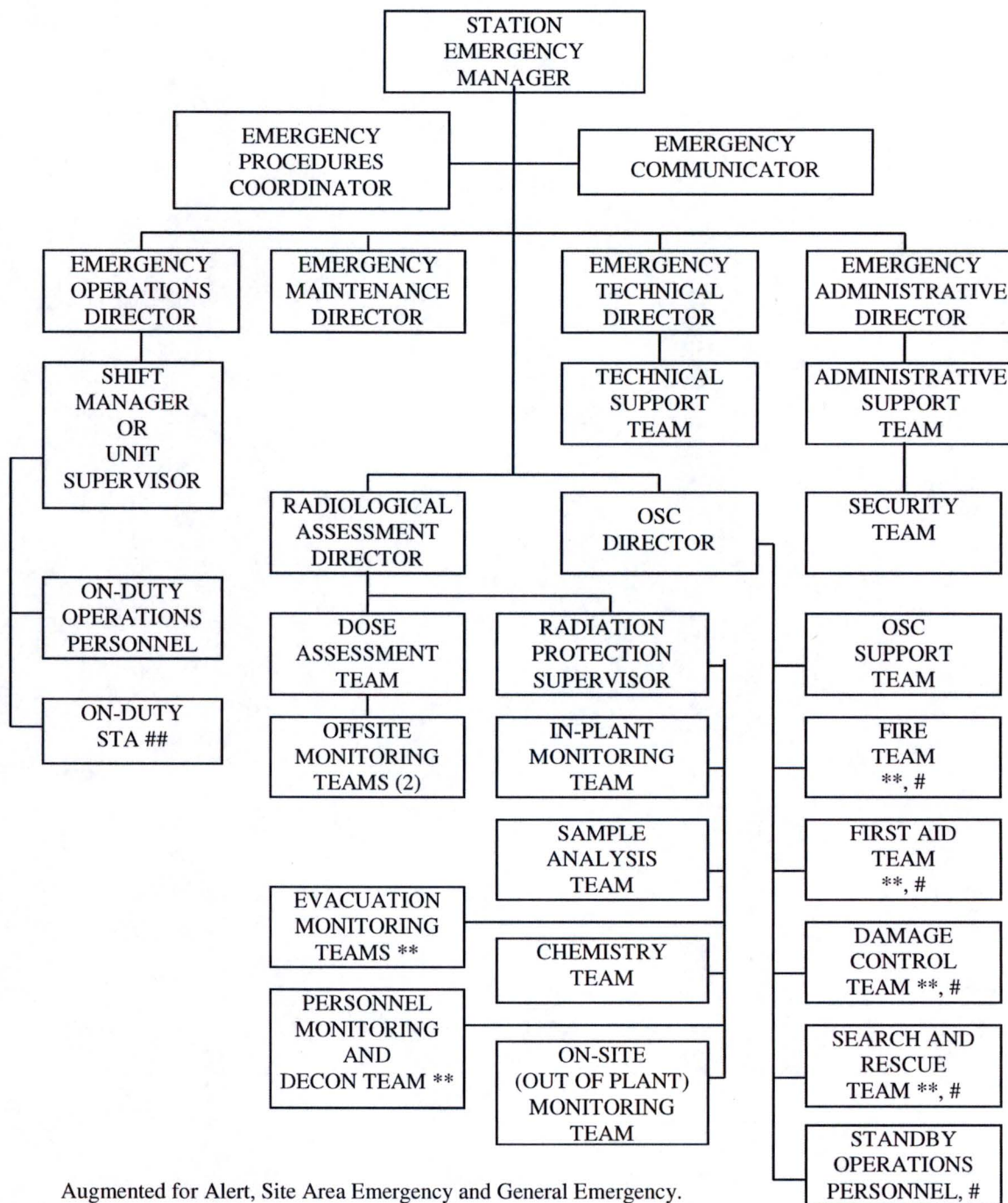
\* Augmented for Alert, Site Area Emergency and General Emergency.

\*\* This coverage is provided by personnel who may be assigned other functions.

# This coverage may not be provided on a full time basis.

## The on-duty STA provides technical support as well as operations support to the SEM until the Technical Support Team is activated.

STATION EMERGENCY ORGANIZATION FOLLOWING AUGMENTATION\*  
FIGURE 5.2



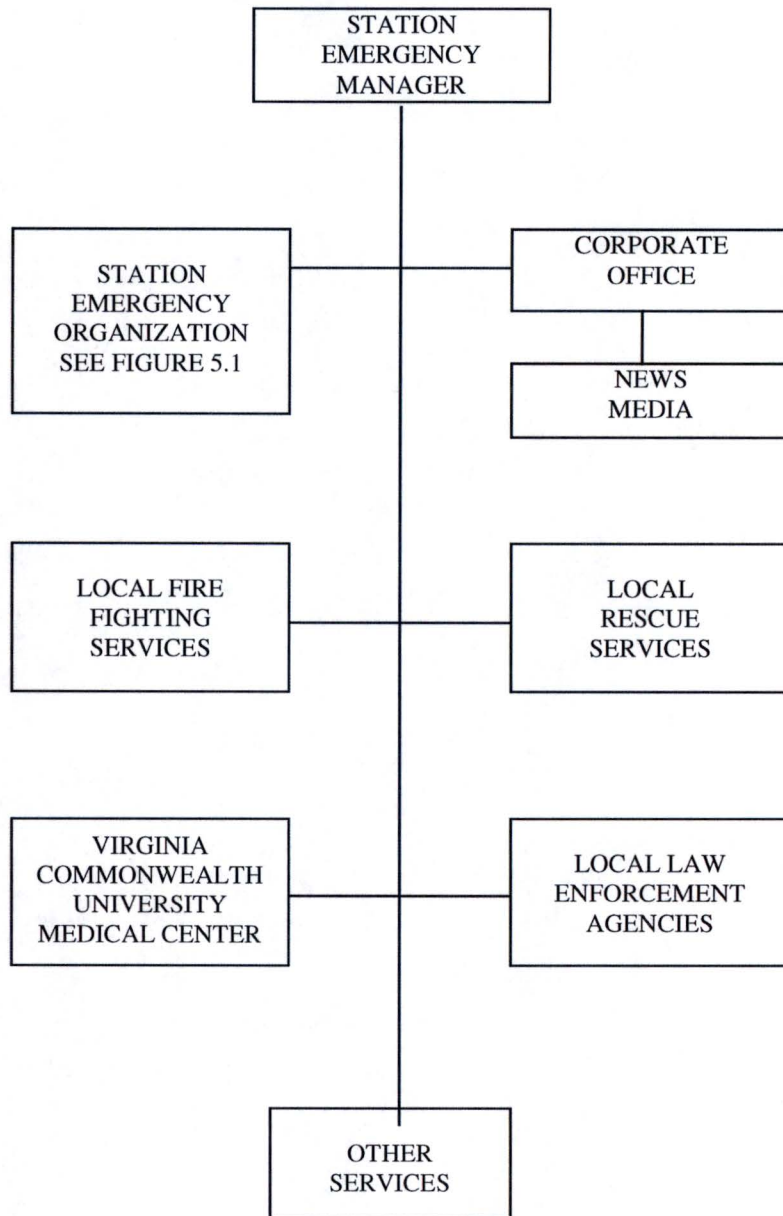
\* Augmented for Alert, Site Area Emergency and General Emergency.

\*\* This team will be activated only if circumstances require this function to be performed.

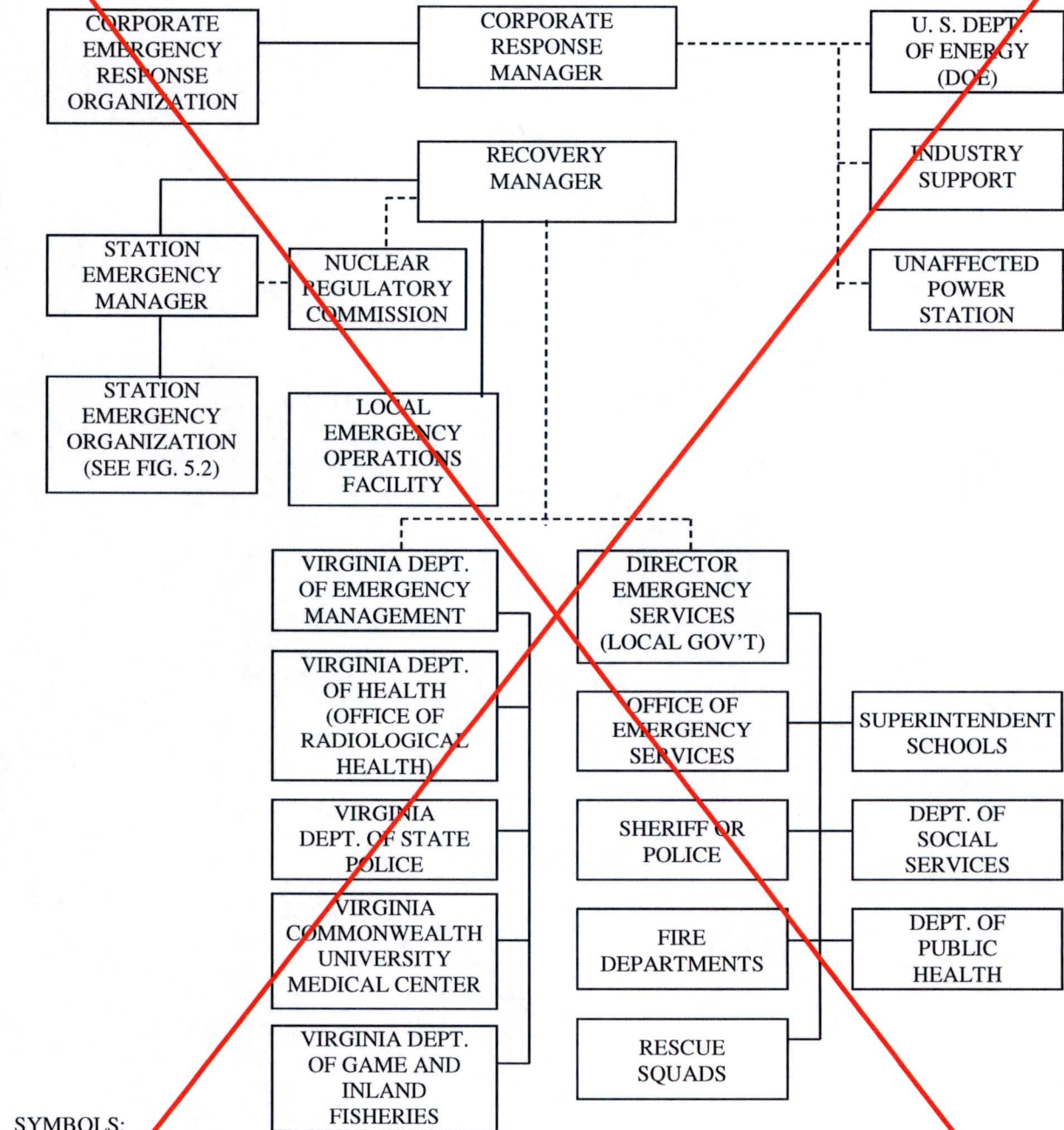
# Normal reporting structure is shown. If the team is activated, control of the team will transfer to the Station Emergency Manager or appropriate Emergency Director.



STATION TO SUPPORT GROUP INTERFACE  
PRIOR TO AUGMENTATION OF THE EMERGENCY ORGANIZATION  
FIGURE 5.3



STATION TO SUPPORT GROUP INTERFACE  
FOLLOWING LEOF ACTIVATION  
FIGURE 5.4

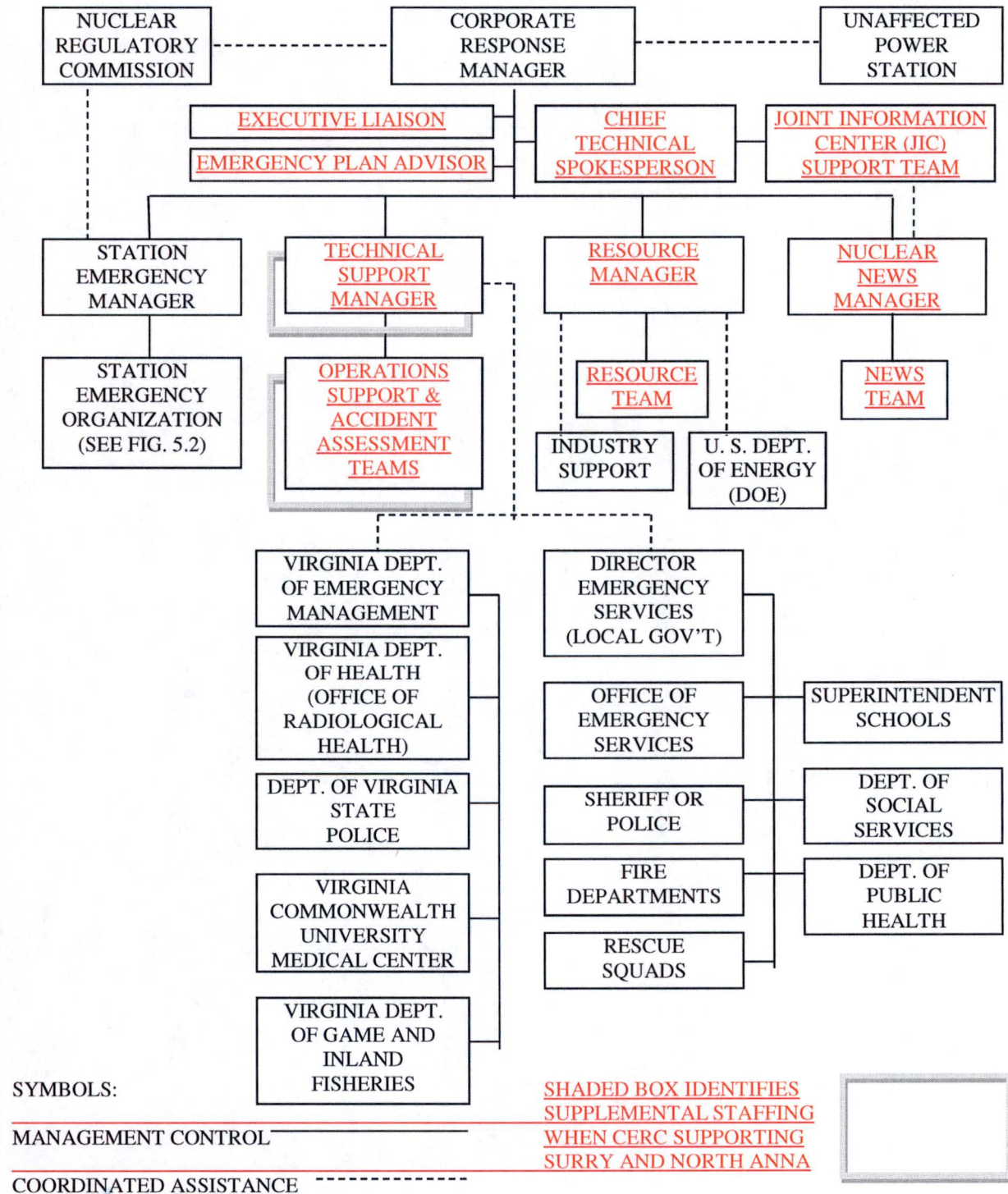


SYMBOLS:

MANAGEMENT CONTROL —————

COORDINATED ASSISTANCE - - - - -

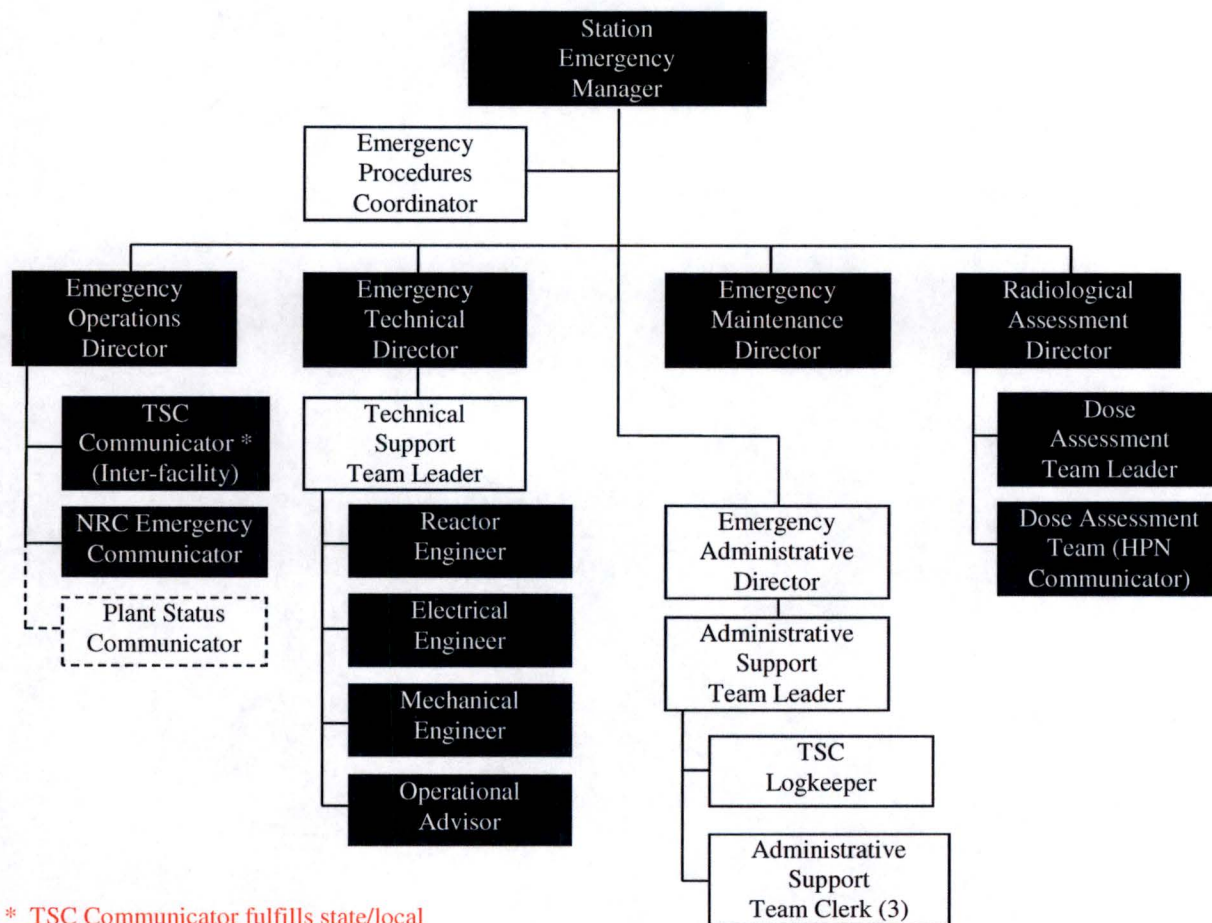
STATION TO SUPPORT GROUP INTERFACE  
FOLLOWING LEOFCERC ACTIVATION  
FIGURE 5.4





# TECHNICAL SUPPORT CENTER ORGANIZATION

FIGURE 5.5.a



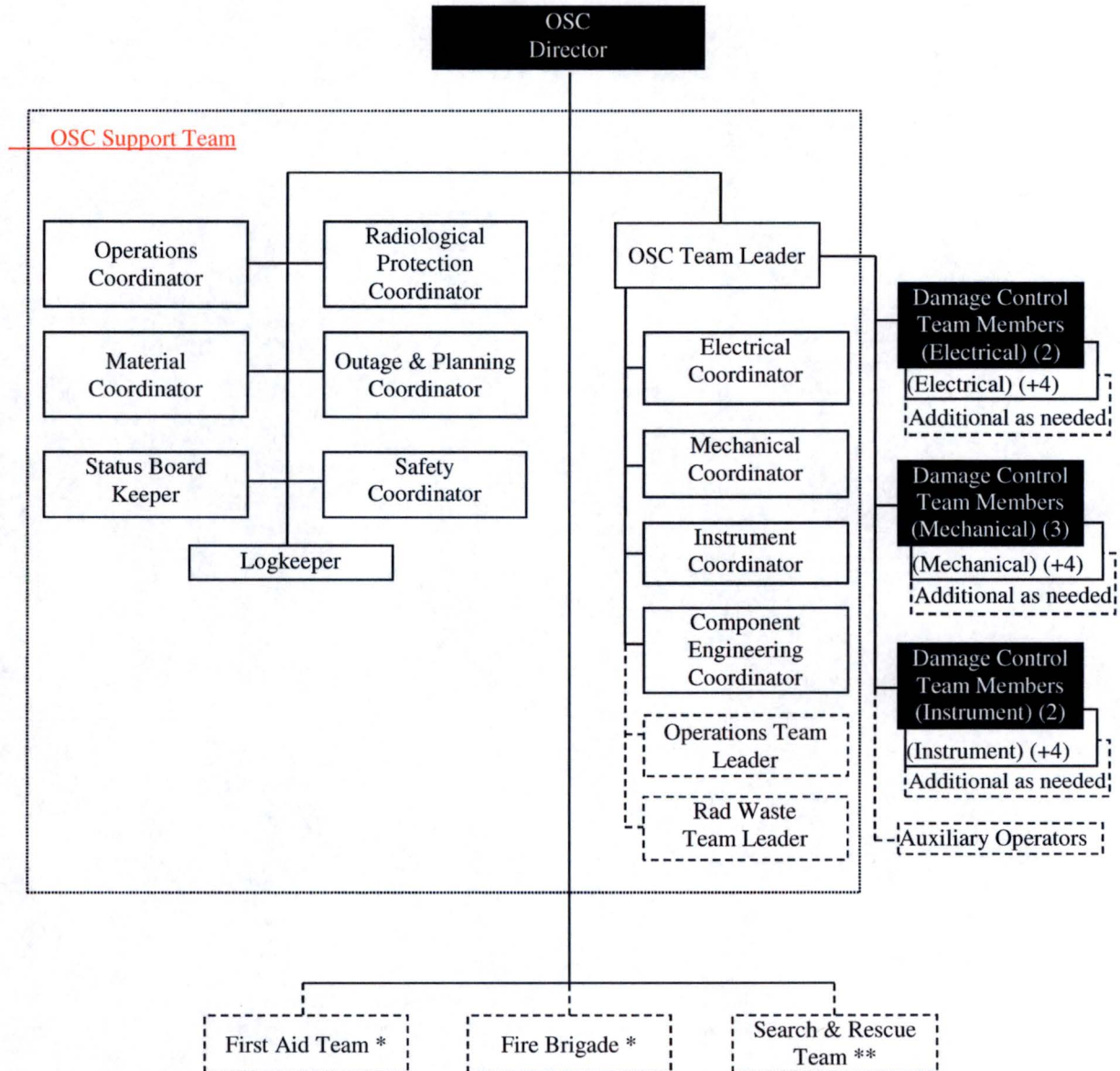
\* TSC Communicator fulfills state/local notification function if EOF unavailable.

■ Indicates positions necessary for facility activation.

□ Indicates fully augmented organization positions.

- - - Indicates position established if needed.

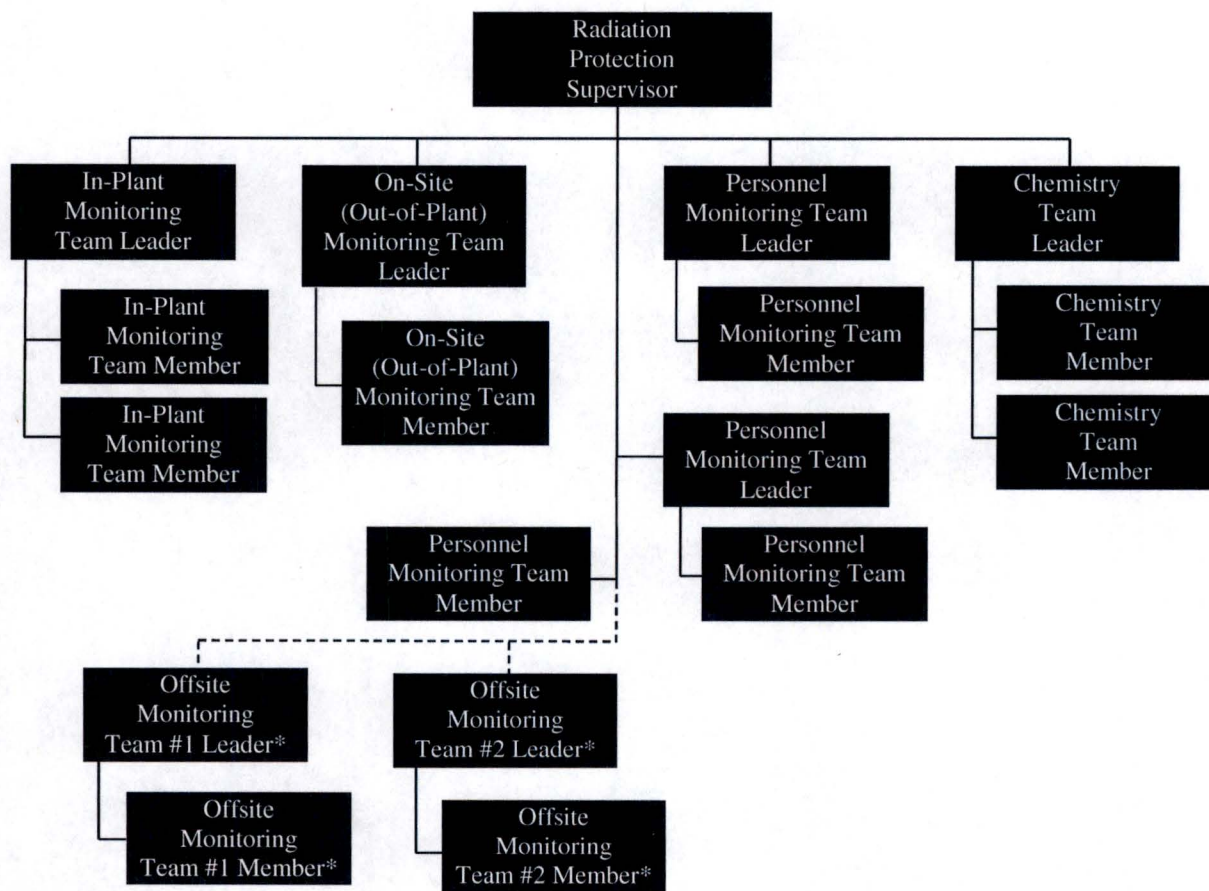
**OPERATIONAL SUPPORT CENTER ORGANIZATION**  
**FIGURE 5.5.b**



\* First Aid Team and Fire Brigade functions are addressed by on-shift personnel.  
Additional qualified personnel who report to the OSC may be designated for these functions.  
\*\* Search & Rescue Team formed from Fire Brigade/First Aid Team/Security staff as appropriate.

- Indicates positions necessary for facility activation.
- Indicates fully augmented organization positions.
- Indicates team established as needed.

RADIATION PROTECTION ORGANIZATION  
FIGURE 5.5.c



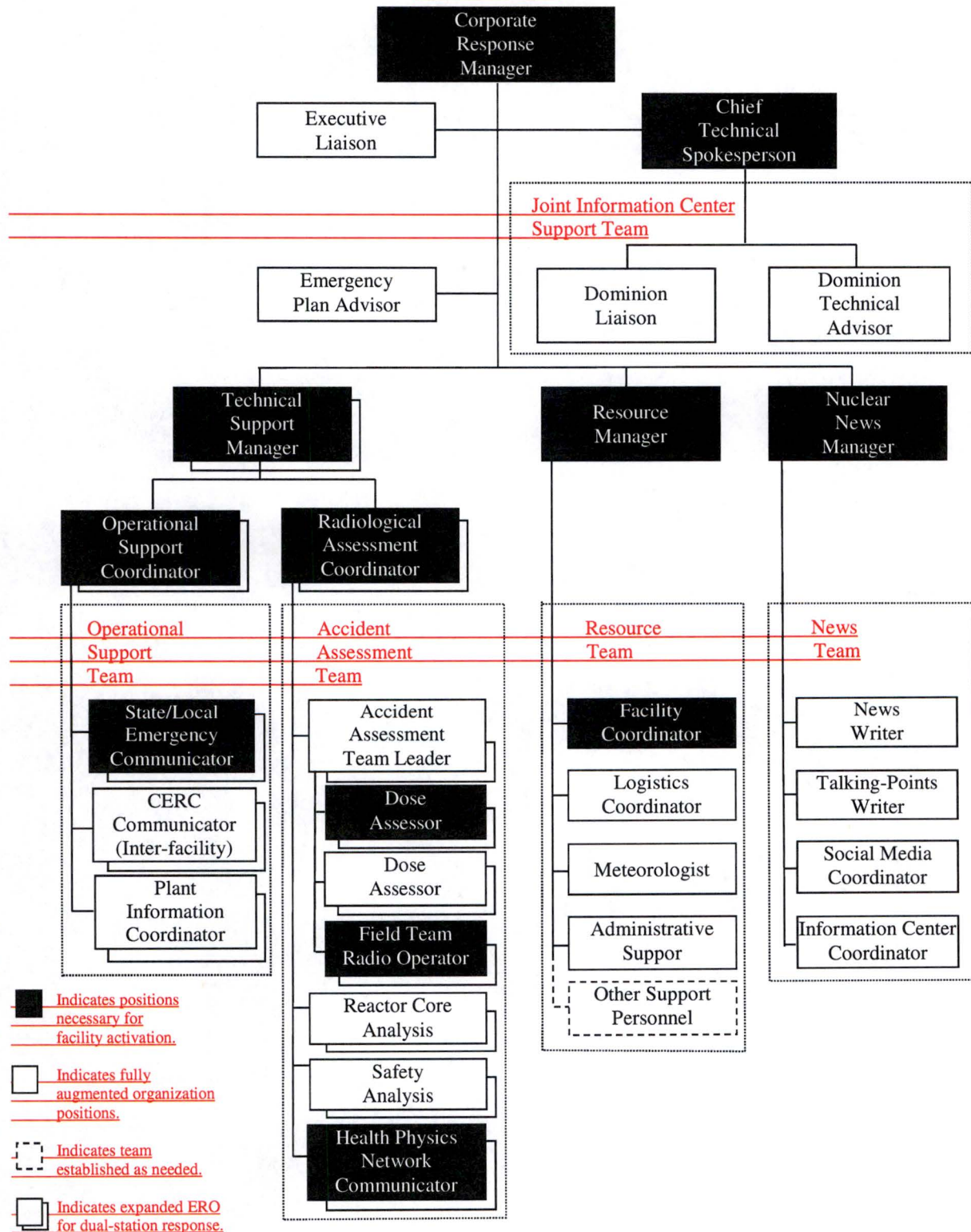
 Indicates positions necessary for activation.

\* Offsite Monitoring Teams are controlled by CERC Accident Assessment Team after being staged.



# CORPORATE EMERGENCY RESPONSE CENTER ORGANIZATION

FIGURE 5.5.d



**NORTH ANNA POWER STATION**  
**EMERGENCY PLAN**

**SECTION 6**

**EMERGENCY MEASURES**

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## **6.0 EMERGENCY MEASURES**

Emergency measures provide pre-planned actions, methods, and criteria which guide personnel during the course of an emergency. The initial response to any emergency condition will be the activation of the Emergency Plan. After activation, the emergency organization that is formulated by activation of the Emergency Plan performs the necessary assessment activities to classify the type of emergency. If the emergency is radiological in nature, the potential consequences of the emergency will be evaluated for the necessary offsite and onsite protective actions to guard the health and safety of the population. If additional assistance is required, offsite support will be requested as provided for in letters of agreements established with a variety of government agencies and volunteer organizations.

### **6.1 ACTIVATION OF THE EMERGENCY PLAN**

Each full time employee of the station is required to be familiar with the provisions of the Emergency Plan. Any employee, upon becoming aware of an emergency condition, shall immediately notify the Shift Manager on duty unless it is apparent notification has already taken place. Upon such notification or other indications, the Shift Manager or Unit Supervisor assumes the responsibilities of the Station Emergency Manager. The SEM will classify the emergency, initiate the appropriate notifications and call outs, and coordinate the actions of the emergency response organization.

State and local community officials will be notified within 15 minutes after declaration of an emergency (meaning the emergency classification level has been provided to the Virginia and risk-jurisdiction Emergency Operations Centers (EOCs)). The initial information following declaration of any emergency class includes the class of emergency, whether a release is in progress, and any recommended protective measures. Additional information will be provided as it becomes available. Figures 6.1 through 6.4 are samples of message forms used for these notifications. The content of the messages have been established in conjunction with the State and local governments. Notifications will be made to the NRC as soon as possible but within 1 hour after declaration of an emergency. Initial information is provided to the NRC as required by 10 CFR 50.72 (Immediate notification requirements for operating nuclear power reactors). Dedicated communicators will be available to provide regular updates to state and local officials approximately every 60 minutes, when conditions change or as otherwise agreed, and to maintain a continuous channel of communications with the NRC.

### **6.2 ASSESSMENT ACTIONS**

EPIP-1.01, Emergency Manager Controlling Procedure, is the procedure for emergency event categorization and classification, while EPIP-4.01, Radiological Assessment Director Controlling Procedure, provides guidance for conducting dose assessment, source term determination, atmospheric diffusion factor determination, monitoring team activities, personnel monitoring and decontamination, monitoring of onsite facilities, evacuation, respiratory protection, sampling and sample analysis, and use of the MIDAS computer model.

Once the emergency classification has been determined, the appropriate EIPs are initiated to direct the activation of the required emergency response facilities and call out of designated emergency response



personnel. The design of the facilities and the data retrieval and monitoring capabilities provide the information needed to make timely assessments and formulate appropriate protective actions.

### **6.3 PROTECTIVE ACTIONS**

The ~~Recovery~~ Technical Support Manager or the Station Emergency Manager (if the ~~LEOF-CERC~~ is not yet activated) is responsible for recommending offsite protective actions to the State. The State and local governments are responsible for notification of the public and implementation of the appropriate protective measures.

#### **6.3.1 Offsite Criteria for the 10 Mile Emergency Planning Zone (EPZ)**

Dose contribution from key isotopes such as those listed in Table 6.1 (and analyzed in UFSAR Sections 11 and 15) are used to calculate offsite doses for comparison to protective action recommendation thresholds.

Protective action recommendations are required to be made to the State within 15 minutes of declaring a General Emergency. Specific protective action recommendations tied to plant and meteorological conditions have been designed to facilitate meeting this time requirement. This guidance is based on Supplement 3 (Guidance for Protective Action Strategies) to NUREG-0654/FEMA-REP-1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants."

The initial protective action recommendation for any event classified as a General Emergency will be to evacuate a 2 mile radius and 5 miles in the downwind sectors unless severe accident conditions exist, an evacuation dose threshold is exceeded beyond 2 miles or sheltering-in-place is appropriate. Sheltering-in-place may be appropriate when known conditions make evacuation dangerous, such as a hostile action based event. Follow-up protective action recommendations that the station may make to the state will be based on current meteorological data such as wind direction, wind speed and stability class, and dose projections. Also, consistent with the Commonwealth of Virginia's strategies for supplementing these protective actions with use of potassium iodide (KI) by the general public as a prophylactic, recommendations will be made for implementing these strategies.

A Site Area Emergency will be declared when offsite doses are projected to exceed 0.1 Rem TEDE or 0.5 Rem Thyroid CDE. A General Emergency will be declared when offsite Protective Action Guides (PAGs) of 1.0 Rem TEDE and/or 5.0 Rem Thyroid CDE are projected to be exceeded due to a direct radiation or inhalation hazard, or when non-radiological conditions exceed General Emergency EALs.

Warnings to the public within the 10-mile EPZ (Figure 6.5) will be the responsibility of State and local officials who will be assisted by the Virginia Department of State Police upon request. The primary method of warning the public is by the use of the Early Warning System sirens. Route alerting provides backup alert and notification capability (reference 10 CFR 50, Appendix E, paragraph IV.D.4). Other warning methods may include telephone communications, television and radio Emergency Alert System stations, public address systems, bull horns from patrol cars and personal contact. There are currently no hospitals, prisons, or nursing homes within the 10 mile EPZ.



It is estimated that the primary sector and the two buffer sectors (spanning 67 1/2°) can be alerted of the emergency within 15 minutes using the Early Warning System. If evacuation is recommended, it is estimated that the 67 1/2° sector can be evacuated within 2 to 4 hours.

Evacuation zones, routes, and relocation centers have been established in the event that an evacuation is recommended. This information is published in brochures and distributed by the State. Population distribution and evacuation time estimates are maintained on file by the Nuclear Emergency Preparedness Department (reference Appendix 10.8) and are summarized in Tables 6.2 and 6.3.

Written pre-planned messages intended for transmittal to the public via radio and television stations will be consistent with the classification scheme. They will be released to the media by the State Coordinator of Emergency Management or Local Coordinator of Emergency Services or his designated representative. The messages will give instruction with regard to specific actions to be taken by the occupants of the inhabited area. The messages will, as appropriate, give instruction on the aspects of sheltering, thyroid blocking, evacuation, the nature of the emergency, and recommended protective actions. The local governments are charged by the COVEOP with the responsibility to conduct information programs to educate their citizens on:

1. Radiological hazards,
2. Procedures for notification of a radiological emergency,
3. Evacuation routes and assembly points, and
4. Other protective measures.

The COVEOP identifies the methods to be utilized in preventing or minimizing direct or subsequent ingestion exposure to radioactive materials deposited on the ground or other surfaces. Upon notification of a radiological emergency which may affect livestock, crops, or farmlands, the Virginia Department of Agriculture and Consumer Services will institute a program to assess the impact upon the agriculture community. Members of that department will take samples of milk from dairy cattle in the affected area for analysis and will monitor soil, crops and farm equipment for contamination.

Follow-up action includes the disposition of radiologically contaminated materials. The local county government(s) has the prime responsibility for controlling affected area ingress and egress. Assistance from the State Police shall be supplied as requested by local officials.

### **6.3.2 Onsite Criteria for the Exclusion Area**

The area within 5000 feet of the former North Anna Unit 3 containment is defined as the Exclusion Area for the purposes of this Plan. Company employees, supplemental personnel, occasional visitors at the site, and boaters on the reservoir and cooling lagoons may be inside the Exclusion Area. The area immediately surrounding the units which is enclosed by a security fence is defined as the Protected Area. The Station Emergency Manager is responsible for making the decision to evacuate the Protected Area, and will take appropriate measures in cooperation with State and local agencies for evacuation of persons in the Exclusion Area and those members of the public who may be passing through the site or within Company property. The company will also commit personnel and appropriate equipment (search lights, power amplified loudspeakers) to assist the Virginia Department of Game and Inland Fisheries in clearing the Exclusion Area when required.

Visitors to the Protected Area of the station are under continuous escort by personnel knowledgeable in emergency personnel accountability procedures. Supplemental personnel are also trained in personnel accountability procedures.

Onsite personnel will be immediately notified of an emergency that is initially classified as an Alert or higher event, unless doing so poses a threat to personnel safety. For example, hurricane force winds, a tornado, or a security breach may dictate suspension or deferral of assembly, accountability and/or initiation of facility staffing. However, these activities would be implemented as quickly as achievable given the specific situation. Station procedures provide for a range of protective actions to protect onsite personnel during hostile action and ensure continued ability to safely shut down the reactor and perform emergency plan functions.

~~The Central Emergency Operations Facility (CEOF) may be activated in lieu of the LEOF upon a management decision to do so or if the readiness of the LEOF is impaired.~~ Normally, alarms will be sounded and announcements will be made to conduct personnel accountability or, if necessary, a site evacuation of non-essential workers. Those individuals within the Exclusion Area will be alerted by station personnel, Security, and/or personnel from the Virginia Department of Game and Inland Fisheries. In the event of an evacuation, radiation monitoring teams will be dispatched to the appropriate Remote Assembly Area.

Emergency Assembly Areas have been established outside the Protected Area to facilitate the dissemination of information to personnel. The Station has the capability to conduct personnel accountability for individuals inside the Protected Area within approximately 30 minutes. After accountability is completed, an evaluation is made and search teams may be dispatched to locate any individual noted as missing or unaccounted.

If onsite evacuation is to occur, Security collects only the security key cards, not the dosimetry, of all personnel leaving the Protected Area. Continuous accountability of personnel in the Protected Area not evacuating the site shall be maintained throughout the emergency. Evacuees, who may use personal vehicles, proceed to either the primary or secondary remote assembly area (See Figure 6.6).



NOTE: Examples of protective clothing to be updated to reflect current inventories. This change is beyond the scope of this license amendment request.

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Station evacuees will be surveyed for contamination following events involving a radiological release, and decontaminated, if necessary, prior to being released from the remote assembly area. Decontamination agents and supplies are available at the station which can be transported to the remote assembly areas to provide decontamination capabilities.

### **6.3.3 Use of Onsite Protective Equipment and Supplies**

#### **6.3.3.1 Respiratory Protection**

The company has a comprehensive respiratory protection program at its nuclear stations. VPAP 2101, "Radiation Protection Plan", establishes the Respiratory Protection Program which is implemented by HP procedures. Those individuals likely to wear respirators are given a pulmonary examination and training on respiratory protection including a practical examination. A "fit test" is given before an individual is allowed to enter an area requiring respiratory protection.

#### **6.3.3.2 Protective Clothing**

The station maintains an adequate inventory of protective clothing in the Clean Change Room. Contaminated clothing is washed at the station and re-issued provided contamination is below established radiation criteria. A Radiation Work Permit system is utilized whereby Radiological Protection establishes personnel protective clothing and equipment criteria. Such clothing may consist of cotton coveralls, hoods, cotton glove inserts, rubber gloves, plastic shoe covers, rubber shoe covers and rubber boots. Station personnel requiring access to a Radiological Control Area are given training on how to don and remove protective clothing so as to minimize personal contamination or introduction of contamination into adjacent areas.

#### **6.3.3.3 Thyroid Blocking Agent**

The process for administering a thyroid blocking agent in a potential radioiodine inhalation situation was authorized by the company's employee health services staff in consultation with its medical support staff.

### **6.4 AID TO AFFECTED PERSONNEL**

The Company has made arrangements with the Virginia Commonwealth University Medical Center (VCUMC), to provide medical assistance to personnel injured or exposed to radiation and/or radioactive material. VCUMC has developed its own plan for responding to the emergency. VCUMC's plan establishes a specialized area of the hospital for treatment with appropriate Health Physics functions, and implements a coded system to alert hospital team members. Radiation monitoring equipment, dosimetry, and protective clothing are available at VCUMC.

The Station will provide and distribute self reading and cumulative type dosimeters to all personnel involved in emergency onsite response regardless of their affiliation. Dose records shall be maintained and checked throughout the emergency.

#### **6.4.1 Emergency Exposure Limits**

Emergency response personnel may, because of necessity, receive once-in-a-lifetime exposure to contamination and radiation up to the 10CFR20 annual limits, not including accumulated occupational exposure. Approval from the Station Emergency Manager is necessary for planned exposures greater than



the 10CFR20 annual limits. Under limited circumstances, exposure levels greater than 5 times the 10CFR20 annual limits are allowed, but only on a voluntary basis to persons fully aware of the risks involved. Selection criteria for volunteer emergency workers includes consideration of those who are in good physical health, are familiar with the consequences of emergency exposure, and are not a "declared pregnant adult". It is preferable, though not mandatory, that volunteers be older than 45 years of age and not be a female capable of reproduction.

Emergency exposure may be authorized for such needs as removal of injured personnel, undertaking corrective actions, performing assessment actions, providing first aid, performing personnel decontamination, providing ambulance service, providing medical treatment, etc. Guidelines for emergency exposure limits, including life saving actions, are consistent with EPA Emergency Worker and Life Saving Activity Protective Action Guides.

#### **6.4.2 Decontamination and First Aid**

There are First Aid stations located throughout the North Anna Power Station that contain the normal complement of first aid supplies and equipment necessary to treat those injuries not involving hospitalization or professional medical services.

At least two First Aid Team members are available at all times to respond to personnel injury. As a minimum, the First Aid Team personnel are Multi-Media first aid trained. In addition, the following Medical facilities and services are available:

1. Company nurse available during normal working hours (Mon. - Fri.).
2. Company ambulance.
3. Company designated physicians in the area.
4. Local Rescue Squads.
5. The Virginia Commonwealth University Medical Center facilities.

Actions are required to be taken when levels of radioactive contamination for workers, equipment or areas exceed 1,000 dpm / 100 square centimeters of removable contamination. Any detected personnel contamination will initiate appropriate evaluation and decontamination.

The Station controls access for onsite contamination and the return of these areas and their contents to normal use.

No food supplies are grown on the site and the water supplies come from deep wells. Areas designated permissible for employees to eat and drink during the emergency and recovery phases of operations are monitored for contamination.

If onsite personnel are required to relocate or routinely leave the site during an emergency, the Station will provide adequate supplies for personnel decontamination, clothing and means to provide for decontaminating the clothing. If radioiodine contamination of the skin is determined, provisions will be made to provide for decontamination.

Monitoring of vehicles and personnel will be performed at the Remote Assembly Areas (RAA). Should decontamination of vehicles or personnel be warranted, Health Physics personnel can perform the task at the Station, the RAA, or if necessary, at Patrick Henry High School in Hanover County.

#### **6.4.3 Medical Transportation**

A Station ambulance is available to transport contaminated injured personnel. Contaminated injured personnel will be suitably clothed or prepared to prevent the spread of contamination in the transporting vehicle. Communication can be maintained with VCUMC from the station. The Station can also communicate with the ambulance by use of a UHF radio, and the ambulance can communicate with VCUMC by way of the HEAR system. In addition, arrangements have been made with local volunteer rescue squads to transport injured contaminated personnel to the Virginia Commonwealth University Medical Center. Response team members have received training concerning transportation of contaminated injured individuals. A Health Physics technician, with appropriate instrumentation, would normally accompany contaminated injured personnel to VCUMC. The approximate time to transport a patient to VCUMC is 75 minutes. The estimated time for local rescue squads to arrive at the station is 30 minutes.

#### **6.4.4 Medical Treatment**

The MCVH/VCU-Dominion Power Radiation Emergency Plan (Appendix 10.9) provides guidance for the treatment of contaminated injured personnel by qualified individuals. The Radiation Emergency Plan includes provisions to request assistance from other facilities having the capability to receive and treat injured and/or contaminated individuals. In the event the facilities at VCUMC become over extended, VCUMC may coordinate further assistance with these facilities directly or through the Virginia Department of Health.

#### **6.5 OFFSITE SUPPORT**

In addition to the offsite agencies listed above, local volunteer fire departments have agreed to assist in fighting fires. A list of services and equipment is included in the Agreement Letters [referenced](#) in Appendix 10.1.

The response time of these volunteer fire departments varies from 30 minutes to 45 minutes, unless adverse weather conditions prevail.

Police support for an emergency is provided by State and local governments as detailed in their respective Emergency Plans.



**TABLE 6.1**  
**RADIONUCLIDES WITH SIGNIFICANT CONTRIBUTION TO DOMINANT EXPOSURE MODES<sup>(1)</sup>**

Radionuclides with Significant Contribution to Thyroid Exposure	Radionuclides with Significant Contribution to TEDE Exposure	Radionuclides with Significant Contribution to Lung Exposure (Lung only controlling when thyroid dose is reduced by iodine blocking or there is a long delay prior to releases)
---	--	---

<u>Radionuclide</u>	<u>Half life (days)</u>	<u>Radionuclide</u>	<u>Half life (days)</u>	<u>Radionuclide</u>	<u>Half Life (days)</u>
I-131	8.05	I-131	8.05	I-131	8.05
I-132	0.0958	Te-132	3.25	I-132	0.0958
I-133	0.875	Xe-133	5.28	I-133	0.875
I-134	0.0366	I-133	0.875	I-134	0.0366
I-135	0.280	Xe-135	0.384	I-135	0.280
Te-132	3.25	I-135	0.280	Cs-134	750
		Cs-134	750	Kr-88	0.117
		Kr-88	0.117	Cs-137	11,000
		Cs-137	11,000	Ru-106	365
				Te-132	3.25
				Ce-144	284

(1) Derived from NUREG 0654

NORTH ANNA POPULATION DISTRIBUTION AND EVACUATION TIME ESTIMATES  
(In hours and minutes)

TABLE 6.2

Scenario	Region 1 2 mile EPZ	Region 2 5 mile EPZ	Region 3 10 mile EPZ
Summer Midweek Mid-day Good Weather	2:30	2:30	2:35
Summer Midweek Mid-day Rain	2:30	2:30	2:40
Summer Weekend Mid-day Good Weather	1:45	1:45	2:00
Summer Weekend Mid-day Rain	1:50	1:50	2:00
Summer Evening Good Weather	1:50	1:50	1:55
Winter Midweek Mid-day Good Weather	2:30	2:30	2:40
Winter Midweek Mid-day Rain	2:30	2:35	2:40
Winter Midweek Mid-day Snow	3:20	3:25	3:30
Winter Weekend Mid-day Good Weather	1:50	1:50	2:00
Winter Weekend Mid-day Rain	1:50	1:50	2:00
Winter Weekend Mid-day Snow	2:50	2:55	3:05
Winter Evening Good Weather	1:50	1:55	2:00
Winter Weekend Mid-day Special Event	1:50	1:50	2:00
Winter Weekend Mid-day Road Impacted	2:30	2:30	2:35

Total Population Evacuated	Region 1 2 mile EPZ	Region 2 5 mile EPZ	Region 3 10 mile EPZ
	2,969	13,705	46,186

Information summarized above derived from KLD Engineering, P.C. Evacuation Time Estimates for the North Anna Power Station and Surrounding Jurisdictions dated November 2012 (Figure 3-2, Permanent Resident Population by Sector, and Figure 3-13, Transient Population by Sector Table 5) and Table 3-7, Summary of Population Demand.

Total population evacuated represents the total population loaded onto the network during the 14 simulations listed and evacuation time estimates were calculated based on when approximately 90% of that population has exited the 10-mile radius.

A region is a grouping of contiguous Protective Action Zones (PAZ) evacuated in response to a radiological emergency

A scenario is a combination of circumstances, including time of day, day of week, season, and weather conditions. Scenarios define the number of people in each of the affected population groups and their respective mobilization time distributions.



**NORTH ANNA POWER STATION POPULATION DATA BY SECTOR**  
**TABLE 6.3**

<b>Direction/Sector</b>	<b>Population</b>	<b>2-Mile Ring</b>	<b>5-Mile Ring</b>	<b>10-Mile Ring</b>
Direction: North Sector: A	Permanent Resident	76	367	1181
	Transient	0	159	0
Direction: North Northeast Sector: B	Permanent Resident	21	282	1305
	Transient	150	35	0
Direction: Northeast Sector: C	Permanent Resident	12	142	1678
	Transient	0	0	0
Direction: East Northeast Sector: D	Permanent Resident	0	163	1720
	Transient	0	0	0
Direction: East Sector: E	Permanent Resident	63	263	1258
	Transient	0	58	0
Direction: East Southeast Sector: F	Permanent Resident	20	378	1064
	Transient	0	0	0
Direction: Southeast Sector: G	Permanent Resident	29	231	931
	Transient	0	0	0
Direction: South Southeast Sector: H	Permanent Resident	64	341	1184
	Transient	0	0	0
Direction: South Sector: J	Permanent Resident	92	261	1714
	Transient	0	0	0
Direction: South Southwest Sector: K	Permanent Resident	39	128	861
	Transient	0	0	0
Direction: Southwest Sector: L	Permanent Resident	11	220	1598
	Transient	0	0	0
Direction: West Southwest Sector: M	Permanent Resident	12	142	1683
	Transient	0	0	0
Direction: West Sector: N	Permanent Resident	149	188	750
	Transient	0	0	0
Direction: West Northwest Sector: P	Permanent Resident	41	546	812
	Transient	0	0	2000
Direction: Northwest Sector: Q	Permanent Resident	0	405	1429
	Transient	0	390	98
Direction: North Northwest Sector: R	Permanent Resident	58	161	980
	Transient	0	2383	0

22.5° conical sectors are designated by compass direction point outward from the plant on the centerline of the sector, e.g., sector from 348.75° to 11.25° is designated as Direction: North. Sectors are designated by letter beginning with A for North and where the remaining 15 sectors are designated in a clockwise direction by the subsequent letter, excluding I and O.

Rings are defined as the area between circles of radius 0 and 2 miles, 2 and 5 miles, and 5 and 10 miles.

Information summarized above derived from KLD Engineering, P.C. Evacuation Time Estimates for the North Anna Power Station and Surrounding Jurisdictions dated November 2012 (Figure 3-2, Permanent Resident Population by Sector, and Figure 3-13. Table 5, Transient Population by Sector).



**Figure 6.1 REPORT OF EMERGENCY TO STATE AND LOCAL GOVERNMENTS**

ROE MESSAGE # \_\_\_\_\_

APPROVAL: \_\_\_\_\_  
(Station Emergency Manager or Recovery Manager)

**ATTENTION ALL STATIONS.** This is North Anna Power Station.

Standby for a(n) ☐ Drill Message ☐ Emergency Message ☐ Drill Termination Message ☐ Emergency Termination Message.  
Use the Report of Emergency form to copy message. **(READ SLOWLY)**

**Item 1. EMERGENCY CLASSIFICATION:** ☐ NOUE ☐ Alert ☐ Site Area Emergency ☐ General Emergency

In accordance with EAL \_\_\_\_\_ Declared at \_\_\_\_\_ (24-hr time) on \_\_\_\_\_ (date).

This is (name) \_\_\_\_\_ / Emergency Communicator.

Please acknowledge receipt of this message: **(Conduct roll-call and check boxes as each party answers.)**

☐ VA EOC ☐ Louisa County ☐ Spotsylvania County ☐ Hanover County ☐ Orange County ☐ Caroline County

Notification completed at \_\_\_\_\_ (24-hr time) on \_\_\_\_\_ (date).

**Item 2. METEOROLOGICAL DATA:** Based on: ☐ On-site Measurements ☐ Off-site Measurements ☐ Not Available

Time: \_\_\_\_\_ AVE Wind Speed \_\_\_\_\_ mph; AVE Wind Direction from \_\_\_\_\_ degrees (0° to 360°)  
(24-hr time)

**Item 3. RELEASE OF RADIOACTIVE MATERIAL:**

Routine releases ongoing due to plant operations. Additional radiological releases associated with the event:

- ☐ A. No radiological release. Will NOT transmit Report of Radiological Conditions to Virginia EOC.  
☐ B. Radiological release in progress. Will transmit Report of Radiological Conditions to Virginia EOC.  
☐ C. Radiological release now terminated. Will transmit Report of Radiological Conditions to Virginia EOC.  
☐ D. Radiological release projected to occur. Will transmit Report of Radiological Conditions to Virginia EOC.

**Item 4. SITE ACCESS:** ☐ Available ☐ Not Available

**Item 5. PROTECTIVE ACTION RECOMMENDATION:** ☐ is NOT required ☐ will be transmitted to VEOC ☐ has been transmitted to VEOC.

**Item 6. UPDATE SCHEDULE:** ☐ 60 minutes (recommended); ☐ Other \_\_\_\_\_; EOC Watch Officer: \_\_\_\_\_

**NOTE:** Items 7 – 11 optional for message reporting initial Emergency Plan entry, emergency classification change or PAR changes and "Excluded from message" may be checked. "Items 7 – 11 are excluded from message" may be read in lieu of reading each item.

**Item 7. EMERGENCY RESPONSE ACTIONS UNDERWAY:** ☐ Excluded from message

- ☐ None ☐ Station emergency personnel called in  
☐ Station monitoring teams dispatched off-site ☐ Other \_\_\_\_\_

**Item 8. EVACUATION OR COMPANY DISMISSAL OF SITE PERSONNEL:** ☐ Excluded from message

- ☐ No  
☐ Evacuation to Primary Remote Assembly Area: ☐ Planned ☐ In progress ☐ Completed ☐ Released from RAA  
☐ Evacuation to Secondary Remote Assembly Area: ☐ Planned ☐ In progress ☐ Completed ☐ Released from RAA  
☐ Company Dismissal: ☐ Planned ☐ In progress ☐ Completed  
☐ Other \_\_\_\_\_

**Item 9. PROGNOSIS OF SITUATION SINCE LAST REPORT:** ☐ Excluded from message

- ☐ Stable ☐ Worsening  
☐ Improving ☐ Other \_\_\_\_\_

**Item 10. ASSISTANCE REQUESTED OR BEING PROVIDED:** ☐ Excluded from message

- ☐ None  
\_\_\_\_\_ (#) Fire Units from \_\_\_\_\_ (#) Police Units from \_\_\_\_\_  
\_\_\_\_\_ (#) Rescue Units from \_\_\_\_\_ (#) Other \_\_\_\_\_

**Item 11. ADDITIONAL INFORMATION (Do not use abbreviations, mark numbers or acronyms.):** ☐ Excluded from message

\_\_\_\_\_  
\_\_\_\_\_

This is North Anna Power Station out at \_\_\_\_\_ (24-hr time) on \_\_\_\_\_ (date).

**Item 12. TERMINATION INFORMATION (Complete ONLY for termination message):**

Event Terminated at: \_\_\_\_\_ (24-hr time) on \_\_\_\_\_ (date).

Please acknowledge receipt of this message: **(Conduct roll-call and check boxes as each party answers.)**

☐ VA EOC ☐ Louisa County ☐ Spotsylvania County ☐ Hanover County ☐ Orange County ☐ Caroline County

This is North Anna Power Station out at \_\_\_\_\_ (24-hr time) on \_\_\_\_\_ (date).

Figure 6.2

Protective Action Recommendation

PROTECTIVE ACTION RECOMMENDATION:

☐ SHELTER-IN-PLACE: \_\_\_\_ Mile radius 360° and \_\_\_\_ Miles downwind in the following sectors:  
\_\_\_\_\_

☐ EVACUATE: \_\_\_\_ Mile radius 360° and \_\_\_\_ Miles downwind in the following sectors:  
\_\_\_\_\_

☐ BEYOND 10 MILE EPZ:

☐ Evacuate Area: \_\_\_\_ Centerline in degrees; \_\_\_\_ Distance in Miles; \_\_\_\_ Width in feet

☐ Shelter-in-place: \_\_\_\_ Centerline in degrees; \_\_\_\_ Distance in Miles; \_\_\_\_ Width in feet

☐ POTASSIUM IODIDE:

Recommend implementation of Potassium Iodide (KI) strategies for the general public.  
The projected dose at the site boundary is  $\geq 5$  Rem Thyroid CDE.

The time is \_\_\_\_ (24-hr time).

This is \_\_\_\_ / Emergency Communicator.

Message received by: Virginia EOC Watch Officer (name) \_\_\_\_\_



Figure 6.3

# **Radiological Status Form**

Based on MIDAS Projection

Prepared by: \_\_\_\_\_

Reviewed by: \_\_\_\_\_

Date/Time: \_\_\_\_\_

Run Time: \_\_\_\_\_

Method (circle one): **Monitor Reading**

**Plume Correlation**

**What-If (Hypothetical)**

## **A. MIDAS PROJECTION:**

		Site Boundary	2 Miles	5 Miles	10 Miles
4 Hour PAG Dose	TEDE 4-day rem	rem	rem	rem	rem
	Thy CDE rem	rem	rem	rem	rem
CURRENT DOSE RATE	TEDE rem/hr	rem/hr	rem/hr	rem/hr	rem/hr
	Thy CDE rem/hr	rem/hr	rem/hr	rem/hr	rem/hr
	DDE rem/hr	rem/hr	rem/hr	rem/hr	rem/hr
RATIO	TEDE/DDE at peak DDE				
PLUME	ARRIVAL from start of release				
	X/Q sec/m3	sec/m3	sec/m3	sec/m3	sec/m3

Distance to which 4-hour TEDE exceeds 1 rem: \_\_\_\_\_ Miles

Distance to which 4-hour Thyroid CDE exceeds 5 rem: \_\_\_\_\_ Miles

% of Technical Specification:

% of TS for DDE

% of TS for Thy CDE

(Based on Site Boundary Dose Rates)

Remarks: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

## **B. RELEASE DESCRIPTION:**

Site: \_\_\_\_\_

Un. \_\_\_\_\_

Reactor Shutdown Time: \_\_\_\_\_

Start of Release Time: \_\_\_\_\_

hours since Reactor shutdown

Remaining Release Duration (hr) \_\_\_\_\_

Total Release Duration (hr)

Pathway: \_\_\_\_\_

**GROUND PROC VNT STEAM VENT VNT TOTAL**

Plume Height (ft): \_\_\_\_\_

Percent of Plume on Ground: \_\_\_\_\_

Noble Gas Release Rate (Ci/sec): \_\_\_\_\_

Radioiodine Release Rate (Ci/sec): \_\_\_\_\_

Particulate Release Rate (Ci/sec): \_\_\_\_\_

## **C. METEOROLOGICAL CONDITIONS:**

Time Period: \_\_\_\_\_

Lower

Upper

Wind Direction (from): \_\_\_\_\_

Downwind Sector: \_\_\_\_\_

Wind Speed (mph): \_\_\_\_\_

Stability Class (PG A-G): \_\_\_\_\_

Ambient Temp (degrees F): \_\_\_\_\_

Precipitation (in./15 min.): \_\_\_\_\_



Figure 6.4

RADIOLOGICAL STATUS

Complete based on information available when form prepared.

Report #: \_\_\_\_\_

Prepared by: \_\_\_\_\_

A. Unit/Release Status:

Site: North Anna Affected Unit(s)/Area: 1; 2; ISFSI

Unit 1: Power \_\_\_\_\_%; Reactor Shutdown Date / Time: \_\_\_\_\_ / \_\_\_\_\_; ☐ N/A

Unit 2: Power \_\_\_\_\_%; Reactor Shutdown Date / Time: \_\_\_\_\_ / \_\_\_\_\_; ☐ N/A

Release in progress: ☐ No; Unit 1, Date / Time Release Started: \_\_\_\_\_ / \_\_\_\_\_

☐ No; Unit 2, Date / Time Release Started: \_\_\_\_\_ / \_\_\_\_\_

☐ No; Other, \_\_\_\_\_ Date / Time: \_\_\_\_\_ / \_\_\_\_\_

Release Pathway: \_\_\_\_\_; ☐ Unknown Release Duration: \_\_\_\_\_; ☐ Unknown

Release Pathway: \_\_\_\_\_; ☐ Unknown Release Duration: \_\_\_\_\_; ☐ Unknown

B. Meteorological Conditions as of \_\_\_\_\_ (24-hr time)

Average Lower Wind direction is from \_\_\_\_\_ degrees (to 360°)

Average Lower Wind Speed is \_\_\_\_\_ mph; Downwind Sector is \_\_\_\_\_

Average Upper Wind direction is from \_\_\_\_\_ degrees (to 360°)

Average Upper Wind Speed is \_\_\_\_\_ mph; Downwind Sector is \_\_\_\_\_

Stability Class is \_\_\_\_\_; Ambient Temperature is \_\_\_\_\_ degrees F

Precipitation: ☐ None; ☐ Rain; ☐ Snow; ☐ Other \_\_\_\_\_

C. Radiological Conditions based on available data:

☐ On-site survey results indicate \_\_\_\_\_ rem/hr at \_\_\_\_\_ (location).

Additional information will be provided when available.

☐ Off-site survey results indicate \_\_\_\_\_ rem/hr at \_\_\_\_\_ (location).

Additional information will be provided when available.

☐ No survey information, external exposure estimates, dosimetry information or any other radiological information available.

☐ \_\_\_\_\_  
\_\_\_\_\_

D. Remarks: \_\_\_\_\_

Reviewed by: \_\_\_\_\_

Radiological Assessment Director or  
Radiological Assessment Coordinator

\_\_\_\_\_ Date / Time

**FIGURE 6.5**

**NORTH ANNA POWER STATION**  
**10 – MILE EMERGENCY PLANNING ZONE (EPZ)**

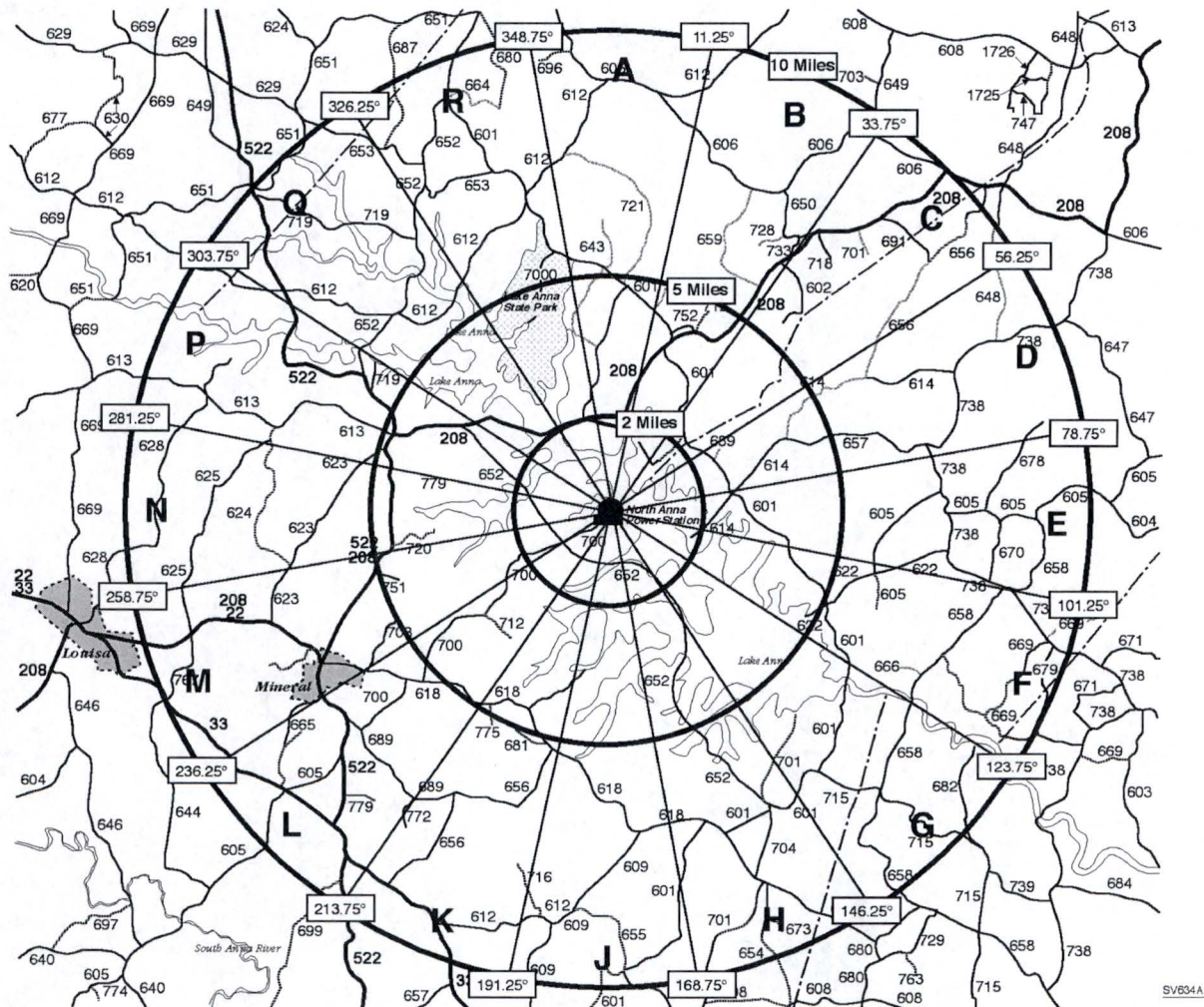
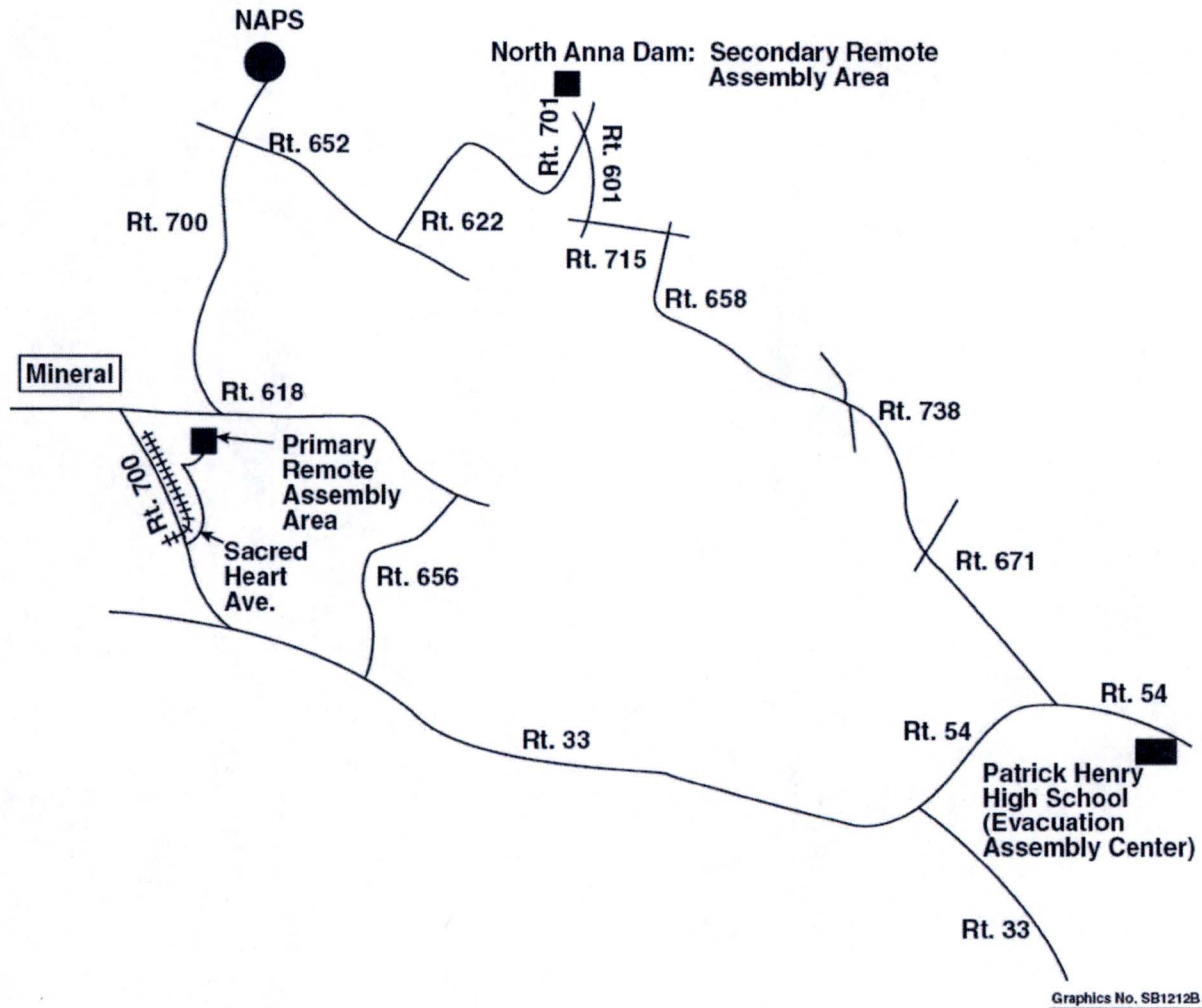




FIGURE 6.6

## **NORTH ANNA POWER STATION REMOTE ASSEMBLY AREAS**



**PRIMARY REMOTE ASSEMBLY AREA:** PROCEED TO INTERSECTION OF RT. 700 AND 618. TURN RIGHT ON RT. 618 AND PROCEED 0.3 MILES TO RT. 700 AND TURN LEFT. PROCEED 1.3 MILES AND TURN LEFT ON SACRED HEART AVENUE. PROCEED 0.5 MILES TO THE ANIMAL SHELTER ACCESS ROAD ON THE RIGHT. TURN RIGHT. THE ENTRANCE TO THE ASSEMBLY AREA (LOUISA FIRE TRAINING CENTER) IS ON THE LEFT.

**SECONDARY REMOTE ASSEMBLY AREA:** PROCEED TO INTERSECTION OF RT. 700 AND 652. TURN LEFT ON RT. 652 AND PROCEED TO RT. 622. TURN LEFT ON RT. 622 AND PROCEED TO RT. 701. TURN LEFT ON RT. 701 AND PROCEED TO RT. 601. TURN LEFT ON RT. 601 AND PROCEED 0.1 MILES. THE ASSEMBLY AREA IS ON THE LEFT, THROUGH THE GATE, AT THE DAM.



**NORTH ANNA POWER STATION**  
**EMERGENCY PLAN**

**SECTION 7**

**EMERGENCY FACILITIES AND EQUIPMENT**

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## **7.0 EMERGENCY FACILITIES AND EQUIPMENT**

The facilities required in the implementation of the Emergency Plan consist of the Control Room (shared for both Unit 1 and 2), the Operational Support Center (OSC), the Technical Support Center (TSC), ~~the Local Emergency Operations Facility (LEOF), and~~ the Corporate Emergency Response Center (CERC) ~~and the Central Emergency Operations Facility (CEOF)~~. These facilities were designed to meet the intent of the guidance in NUREG-0696 and the clarification in NUREG-0737 Supplement 1. In addition, a Joint Information Center (JIC) and a Local Media Center (LMC) are required for the implementation of the Emergency Plan. A description of each is given below.

### **7.1 EMERGENCY RESPONSE FACILITIES**

#### **7.1.1 Control Room**

The Control Room of the affected unit(s) shall be the initial location for command and control of the emergency response effort. All controls and instrumentation needed to diagnose plant conditions and to take immediate actions to place the affected unit(s) in a safe condition are available in the Control Room. Within the Control Room, the Station Emergency Manager has access to the information needed to classify the emergency. Redundant communication systems are also available in the Control Room to make the required onsite and offsite notifications. The Control Room has the required shielding and ventilation system to remain habitable during the emergency. Access to the Control Room shall be limited to those individuals responsible for carrying out assigned emergency response tasks plus other technical advisors, as necessary.

#### **7.1.2 Operational Support Center**

The Work Control Center is designated as the Operational Support Center (OSC). The OSC is not designed to remain habitable under all projected emergency conditions; however, implementing procedures make provisions for relocating the OSC as needed, based on ongoing assessments of plant conditions and facility habitability. The Maintenance Building, 3<sup>rd</sup> Floor, and the Unit One Emergency Switchgear Room are designated as Alternate OSCs. Augmenting Station operations personnel will report to the primary OSC until instructed by the Shift Manager/SEM to perform a required emergency function. The OSC is also the designated reporting location for the Fire Brigade, the First Aid Team, the Damage Control Team, and the Search and Rescue Team.

#### **7.1.3 Technical Support Center**

The Technical Support Center is located adjacent to Unit 1 Control Room, and its alternate location is the Control Room. Emergency response personnel will assemble at the primary TSC unless otherwise instructed by the Station Emergency Manager. The primary location contains controlled copies of selected manuals, procedures, drawings, and other documents as approved by the Facility Safety Review Committee. Information about plant conditions is available via real time data displays from the Plant Computer System (PCS). Dedicated phone line communications would also be established with the Control Room to keep TSC personnel knowledgeable on current operating evolutions and to provide consultation and recommendations to the Control Room staff.



The construction of the facility walls and design of the ventilation system are such that the whole body and thyroid doses received by occupants of the TSC are below General Design Criteria 19 limits. Radiation monitoring equipment for making airborne particulate and direct radiation measurements is installed in the TSC.

#### **7.1.4 Local Corporate Emergency Operations Response Facility Center**

The station's Local Emergency Operations Facility CERC is the consolidated emergency operations facility (EOF) for North Anna Power Station and Surry Power Station. The CERC is located at the Innsbrook Technical Center in Glen Allen, Virginia, adjacent to the NAPS Training Facility. The LEOF is located within the Exclusion Area and includes designated work stations for Corporate, Federal and State officials who may be assembled at this location. This facility is the designated central collection point for the receipt and analysis of all field monitoring data and the coordination of sample media. Plant data is available from the PCS. The Meteorological Information and Dose Assessment System (MIDAS) is used to estimate offsite doses.

~~The LEOF was designed to provide a specified protection factor from gamma radiation. The facility also has a specially designed ventilation system to limit the exposure of its occupants and further assure its availability during an emergency. Radiation monitoring equipment for making airborne particulate and direct radiation measurements is installed in the LEOF. Should the LEOF become unavailable during an emergency the responsibilities assigned to the LEOF will be transferred to the backup facility known as the Central Emergency Operations Facility. Situations with the potential to affect both Surry and North Anna may warrant transfer of the responsibilities assigned to the LEOF to the CEOF.~~

#### **7.1.5 Corporate Emergency Response Center and Central Emergency Operations Facility**

~~Space is designated for the Corporate Emergency Response Center (CERC) and the Central Emergency Operations Facility (CEOF) at the Innsbrook Technical Center in Glen Allen, Virginia. The facility will be manned by members of the Corporate Emergency Response Team as defined in the Corporate Emergency Response Plan. Plant data is available from the PCS.~~

#### **7.1.6-5 Joint Information Center and Local Media Center**

Official company statements to the media will be made from Joint Information Center (JIC) by the Chief Technical Spokesperson. The primary JIC is located at the Virginia State Police Administrative Headquarters in Chesterfield, Virginia. These company statements are prepared ~~by members of the Corporate Emergency Response Team as defined in the Corporate Emergency Response Plan at the CERC.~~

A Local Media Center (LMC) may be activated as an adjunct to the JIC. The Local Media Center for North Anna Power Station is located at the end of Route 700 on company property. The facility is designated as the North Anna Nuclear Information Center in normal operation. There are dedicated rooms for Dominion, NRC, FEMA, State, and media representatives as well as an auditorium that will accommodate 200 people. Provisions have been made to accommodate TV cameras, copying machines, typewriters, and other equipment needed for press conferences. Should the Local Media Center become



uninhabitable, small groups of the Media, no more than 20, can be accommodated in the LEOF-CERC with the approval of the Recovery Corporate Response Manager.

#### **7.1.7-6 Alternate Facility When Under Threat or Experiencing Hostile Action**

The Louisa Fire Training Center functions as a staging area for augmentation of emergency response staff if the site is under threat of or experiencing hostile action. This location has the capability to communicate with the emergency operations facilityCERC, control room, and plant security. The GEOF, which will be activated in lieu of the LEOF under these conditions,CERC has the capability to perform offsite notifications. The staff at the staging area, working with CERC organization, provides capability for engineering assessment activities, including damage control team planning and preparation.

#### **7.1.7 Near-Site Location For Offsite Agency Coordination**

The North Anna Nuclear Information Center is the location for the NRC and other offsite agency staff to interact face-to-face with emergency response personnel entering and leaving the nuclear power reactor site. This area provides a conference area with whiteboards, separate areas suitable for briefing and debriefing response personnel, telephones, site contact lists, computers with internet access, access to a copier and office supplies, and access to plant radiological information. These provisions exist because the CERC is located more than 25 miles from the TSC.

### **7.2 COMMUNICATIONS SYSTEMS**

The station communications system is designed to provide redundant means to communicate with all essential areas of the station associated with North Anna Units 1 and 2 and to essential locations remote from the station during normal operation and under accident conditions. Communication systems vital to Units 1 and 2 operation and safety are designed so that failure of one component would not impair the reliability of the total communications system. This is accomplished within the Station by using diverse systems and designated personnel.

#### **7.2.1 Communications Systems Within the Station**

The systems which provide for communications within the Station are discussed below.

##### **7.2.1.1 Public Address and Intercom System**

A five channel public address and intercom system (Gai-Tronics System) is installed in the Station. The system power is supplied from a power supply which will maintain the system in an operational condition in the event of a normal station service power failure. Zones are provided within that Station to insure operability of a major portion of the system should equipment in a zone become inoperative. Loudspeaker and paging phone stations are located throughout the Station. The coverage of the loudspeakers permits broadcasts to be heard throughout the station. A visual indicator has been installed in those areas where evaluation of NRC Bulletin 79-18, Audibility Problems Encountered on Evacuation of Personnel from High-Noise Areas, identified noise levels which might exceed the volume of the loudspeakers. In the event of an emergency, the system is used to alert Station personnel of any emergency situation and to direct emergency response actions required of on-site personnel.



#### **7.2.1.2 Radio Communications System (Onsite)**

An Ultra-High Frequency (UHF) two-way radio trunking system is provided at the Station consisting of base stations/repeaters, mobile units installed in emergency vehicles, and hand-held portable radios. The radio trunking system provides redundancy and independent emergency backup equipment for designated station functions.

#### **7.2.1.3 Private Branch Telephone Exchange (PBX)**

A Private Branch Telephone Exchange (PBX) is installed at the Station. The PBX switching equipment is physically located in the PBX Building and is connected to a commercial telephone exchange in Mineral, Virginia. Backup battery power is provided to maintain the system operable 6 to 8 hours following the loss of A.C. power.

#### **7.2.1.4 Sound Powered Telephone System**

A sound powered telephone communications system is installed which serves North Anna Units 1 and 2. This system is a multiple channel system connecting selected operating areas of the plant.

Headsets consisting of an earphone and microphone are connected to a two wire channel for direct communication between persons in different areas. Operation of this system is not dependent on the availability of the electrical power system. During an emergency, the system would provide an alternate means of relaying messages.

### **7.2.2 Offsite Communications Systems**

Those systems provided for communication between the Station and offsite are described below:

#### **7.2.2.1 Commercial Telephone**

Commercial telephone lines are provided between the Station and a commercial telephone exchange in Mineral, Virginia. These lines are connected into the Station PBX. In addition, lines are provided for communications between the Station and the commercial telephone network which are independent of the Station PBX.

#### **7.2.2.2 Synchronous Optical Network (SONET) Ring**

The SONET ring provides Wide Area Network (WAN) connectivity, voice/Automatic Ring Down (ARD) phone and radio control circuits between station emergency response facilities and the CERC/~~GEOP~~, and the Commonwealth of Virginia Emergency Operations Center (VEOC). The VEOC is linked to the SONET ring via a dedicated microwave facility. The SONET ring and associated microwave facility provide the communication link from the VEOC to the Early Warning System (EWS) transmitter located at North Anna. The SONET ring and associated microwave facility are DC powered with either battery back up or generator back up at each location for extended operation upon loss of AC power.

#### **7.2.2.3 Radio Communications System (Offsite)**

The same UHF two-way radio trunking system that provides onsite communications also provides for communications within a ten mile radius of the Station. During an emergency, this system will allow direct contact with Radiation Monitoring Teams, Security vehicles, and a separate channel (Talk Group) between the Security Central Alarm Station and the Louisa County Sheriff's Department.



NOTE: Replacement of references to a modem with a virtual private network is beyond the scope of this license amendment request.

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#### **7.2.2.4 Dedicated NRC Communications**

Separate telephone lines are dedicated to the NRC and include the following:

- Emergency Notification System (ENS): The ENS is the system on which initial notifications, as well as ongoing information about plant systems, status and parameters, are provided to the NRC. ENS lines are located in the Control Room, TSC and LEOFCERC.
- Health Physics Network (HPN): Provides for communications regarding radiological and meteorological conditions, assessments, trends, and protective measures. HPN lines are located in the TSC and LEOFCERC.
- Reactor Safety Counterpart Link (RSCL): Allows for internal NRC discussions regarding plant and equipment conditions. RSCL lines are located in the TSC and LEOFCERC.
- Protective Measures Counterpart Link (PMCL): Allows for the conduct of internal NRC discussions on radiological releases, meteorological conditions, and protective measures. PMCL lines are located in the TSC and LEOFCERC.
- Emergency Response Data System (ERDS) Channel: Allows transmittal of reactor parametric data from the site to the NRC. ERDS data is transmitted from the PCS computer, via modem, to the NRC Operations Center.
- Management Counterpart Link (MCL): This system has been established for internal discussions between the NRC Executive Team Director/members and the NRC Director of Site Operations or licensee management. MCL lines are located in the TSC and LEOFCERC.
- Local Area Network (LAN) Access: Provides access to the NRC local area network. Telephone jacks are provided in the TSC and LEOFCERC for NRC LAN access.

#### **7.2.2.5 Insta-Phone Loop**

A County and State Ringdown Loop (Insta-Phone) has been installed that permits simultaneous telephone-speaker communications from the Station to the Counties of Louisa, Spotsylvania, Orange, Caroline, and Hanover and the VEOC on a 24-hour per day basis. This loop can be activated at the Station from the Control Room, TSC, or LEOFCERC.

#### **7.2.3 Communications System Reliability**

A failure of one communication system will not affect the operation of other communications systems at the station. The communications systems within the Station have diverse power supplies. The public address system has an emergency backup, and the sound powered phone system does not rely on any station power system. Since the onsite communication systems normally will be in use, or periodically tested, equipment failure will not go unnoticed. The multiplicity of onsite communications networks ensures the availability of adequate communications. Equipment for these systems is located in different areas of the Station thus ensuring that an accident in one area of the Station would not incapacitate all communication systems. Failure of normal power supplies will not deprive the station of offsite communication capability since, in most cases, backup power is provided. Dedicated telephone lines are checked according to specified schedules.



#### **7.2.4 Emergency Response Facility Communications**

The communication systems discussed above are used extensively in the Emergency response facilities. A summary of the types of communications is provided in Table 7.1.

### **7.3 ASSESSMENT FACILITIES AVAILABLE ONSITE**

A number of instrumentation and monitoring systems are available onsite for emergency assessments. These systems are described below.

#### **7.3.1 Seismic Monitoring**

The Seismic Monitoring System is designed to detect the occurrence of an earthquake at the North Anna site, to alert the Control Room via panel indications and annunciation, and to provide records of the intensity, duration, and frequency of the earthquake. Detection devices are located in several locations, including the Unit 1 Containment, Auxiliary Building, and a free-field sensor at the meteorological tower. The system collects information related to the ground motion experienced which is used to promptly determine the response of those structures important to safety to permit comparison of such response with that used as the design basis.

#### **7.3.2 Radiological Monitoring**

The installed Radiation Monitoring System (RMS) consists of process monitors and area monitors which read out and record in the Control Room. The process system continuously monitors selected lines for radioactive effluents. The system's function is to warn personnel of increasing radiation levels, to give early warning of a system malfunction, and to record and control discharges of radioactive liquids and gases to the environment.

High range process monitors are installed to provide accurate indication of plant releases during and following an accident. The flow paths monitored include the ventilation vents, the process vent (part of the Gaseous Waste System), the main steam lines, and the turbine driven auxiliary feedwater pump exhaust. High range area monitors, located inside the containments, are installed to provide additional information on core integrity during and after a design basis accident.

In addition to the fixed radiation monitoring equipment, portable radiation monitoring equipment would be used to perform dose assessments. The equipment consists of low and high range instruments to measure gamma, alpha, beta, and neutron radiation. This equipment is maintained by the Radiological Protection Department and is used on a routine basis. Portable gamma detection instrument are also dedicated for emergency kit use (See Appendix 10.5). The kits are set aside solely for emergency use and are inventoried and checked for calibration and operability on a quarterly basis.

Portable equipment is also available to take low or high volume air samples. Battery operated air samplers can be used to collect low volume samples either onsite or offsite. Silver Zeolite cartridges would be used for sampling radioiodine with a minimum detectable activity capability of  $5 \times 10^{-8}$  microcuries per cc. Silver Zeolite has a low retention efficiency for Xenon and therefore, interference should be minimal. Plastic bags and bottles are available to collect water, soil, foodstuffs or other samples.



Emergency Plan Implementing Procedures provide the methodology for determining the magnitude of a release by three separate and independent methods: (1) using data or samples continuously obtained by the onsite Radiation Monitoring System, (2) using known inventory data for the system(s) affected and (3) obtaining offsite data from air samplers or dosimeters which are continuously in place, or taking radiation surveys and appropriate samples, and using this data to calculate releases.

Equipment designated for use in environmental surveillance such as air samplers and thermoluminescent dosimeters (TLDs) is used to obtain offsite data. The radiological monitoring instrumentation and sampling devices used by the station meet the minimum requirements of the NRC Radiological Assessment Branch Technical Position for Environmental Radiological Monitoring Programs. Two TLDs have been placed in each of the 16 sectors within an approximate 5 mile radius of the station for environmental monitoring. Eight (8) TLDs are located beyond five miles from the station and are used to establish normal background radiation levels. Further details can be found in VPAP-2103N, Offsite Dose Calculation Manual (North Anna). The State also has TLD monitoring points located around the Station used for verification purposes. Dosimetry and air sampler locations within the 10 mile EPZ are shown on Figures 7.1 and 7.2.

North Anna maintains fixed laboratory equipment to support sampling analysis and monitoring. The equipment includes Multichannel Analyzers, proportional counters, a tritium analyzer, and whole body counters; arrangements are maintained for reading TLDs.

### **7.3.3 Meteorological Monitoring**

The station's Meteorological Monitoring System provides the capability for predicting atmospheric effluent transport and diffusion. The system consists of a primary and a backup tower, the locations of which were chosen so as to be representative of regional conditions. Instruments located at these towers provide data to MIDAS via the PCS. The data is also transmitted to the Control Room and to the company's Weather Center. Table 7.2 provides a listing of the parameters measured.

The meteorological equipment was designed to meet the criteria of Regulatory Guide 1.23, "On Site Meteorological Programs", dated February 1972.

### **7.3.4 Plant Process Parameter Monitoring**

Installed in the Control Room are the necessary instrumentation readouts to assess station status under all conditions. Information is available from meter displays, chart recorders, annunciators, and the plant process computers to assist the operator in contending with accident conditions.

In order to support the data acquisitions need of the emergency response facilities, the PCS has been installed. The PCS provides plant monitoring, data acquisition, and critical plant data in the form of real-time status displays for the purpose of making a rapid evaluation of the reactor plant's safety status. The PCS includes the Safety Parameter Display System (SPDS), Emergency Response Guidelines (ERGs), process and instrument displays, and pressure-temperature plant displays. Monitor displays are continuously updated by the computer systems as they collect and process parametric data from the various plant sensors. The PCS host computers are housed in the TSC. These units process inputs from



plant sensors and distribute information via the station LAN and corporate Wide Area Network (WAN). The information is available any LAN/WAN-connected PC which has the appropriate software and security level for access, including the Control Room, TSC, ~~LEOF~~, and CERC/~~CEOF~~.

#### **7.3.5 Fire Detection**

The Station's Fire Protection System is designed to furnish water and other extinguishing agents with the capability of extinguishing any single or probable combination of simultaneous fires that might occur. Smoke and heat detectors are utilized for fire detection resulting in automatic fire suppression initiation and/or alarming. These systems are designed in accordance with the standards of the National Fire Protection Association.

#### **7.3.6 Post Accident Sampling**

A contingency plan, controlled by normal Chemistry procedures, has been developed for obtaining and analyzing highly radioactive samples of reactor coolant, containment sump, and containment atmosphere. (Reference NRC Letter, Subject: North Anna Power Station, Units 1 and 2 - Issuance of Amendments Re: Elimination of Post-Accident Sampling System Requirements, dated December 19, 2001, Serial No. 01-760)

#### **7.4 ASSESSMENT FACILITIES AVAILABLE OFFSITE**

The facilities and equipment located at the Surry Power Station may be utilized as applicable during emergency conditions at the North Anna Station. Additional seismic and meteorological data would be available. Respiratory protection, portable radiation detection instrumentation, and count room and sample analysis facilities would also be made available. Seismic data may be obtained from the National Earthquake Information Service. Meteorological data can be obtained from the following sources:

<u>LOCATION</u>	<u>ORGANIZATION</u>	<u>DISTANCE FROM NORTH ANNA (MILES)</u>
Chesterfield	Dominion	56
Wakefield, Virginia	National Weather Service	82
Charlottesville	Federal Aviation Administration	43
Dulles Airport	National Weather Service	65

The State Health Department has equipped a mobile laboratory with radioassay equipment to respond to radiation emergencies. This vehicle is equipped with a radio to facilitate coordination between the State and the company's offsite monitoring teams.

#### **7.5 DAMAGE CONTROL EQUIPMENT AND SUPPLIES**

The Station maintains an adequate inventory of spare parts, equipment and supplies, and could rely on additional equipment and supplies from the Surry Power Station. Such equipment and supplies consist of full face respirators with proper filters or canisters, SCBA respirators, air supplied respirators, silver zeolite cartridges (radioiodine sampling), portable survey instruments, protective clothing and auxiliary apparel, portable sampling equipment, TLDs self-reading dosimeters, count room instrumentation, polyethylene bags

and bottles, radiation signs and rope, radioactive waste containers, ion-exchange resin (liquid waste processing), portable hand-held 2-way radios, portable lighting equipment, and Company-owned vehicles.

This equipment is normally stored either in the Health Physics office and/or warehouse to facilitate transfer to the Operational Support Center as needed. Equipment specifically designated for emergency response is inspected and inventoried at least once a quarter. Portable survey instrumentation is calibrated in accordance with manufacturer's recommendations, and count room instrumentation is calibrated annually (source checked daily).

#### **7.6 EARLY WARNING SYSTEM**

The company has installed and is responsible for maintaining and periodically testing an Early Warning System (EWS) consisting of sirens located throughout the 10 mile EPZ. The purpose of this system is to ensure that essentially 100% of the population within 5 miles of the site can be alerted within 15 minutes and that essentially 100% of the population from 5 to 10 miles from the site who may not have received the initial notification can be alerted within 45 minutes. The Federal Emergency Management Agency (FEMA) has determined that the system satisfies the requirements of NUREG-0654/FEMA-REP-1, Revision 1, and FEMA-REP-10.

The state and local governments have ultimate responsibility for warning the public. Should it be necessary, state and local authorities will alert the public within the 10 miles EPZ using alternative methods described in the COVEOP.

Members of the public within the ten (10) mile EPZ shall be informed of what actions to take following activation of the EWS sirens. Upon hearing the alert, they have been instructed to turn on their radios or television sets to the Emergency Alert System (EAS) to receive further instructions. Louisa and Spotsylvania counties and the State have 24 hour a day capability to activate the EWS system. Messages sent out over the EAS are prepared by VDEM.



**TABLE 7.1**  
**ERF COMMUNICATIONS**

Control Room

1. ARD to TSC, OSC, Security, System Operator, VEOC
2. Insta-phone Loop to State and Country EOCs
3. Station PBX Phones
4. OPX Phone (General Office Network)
5. Radio System
6. NRC Emergency Notification System (ENS)
7. Commercial Phones (Independent of Station PBX)
8. Public Address/Intercom (Gai-tronics)
9. Sound Powered System
10. Emergency Response Data System (ERDS) Channel

Technical Support Center (TSC)

1. ARD to Control Room, OSC, ~~LEOF/CEOF~~(CERC), Security, Primary Remote Assembly Area, VEOC
2. Insta-Phone Loop to State and County EOCs
3. Commercial Phones (Independent of Station PBX)
4. Radio System
5. Station PBX Phones
6. OPX Phone (General Office Network)
7. NRC Emergency Notification System (ENS)
8. Public Address/Intercom (Gai-tronics)
9. Sound Powered System
10. NRC Health Physics Network (HPN)
11. NRC Reactor Safety Counterpart Link (RSCL)
12. NRC Protective Measures Counterpart Link (PMCL)
13. NRC Emergency Response Data System (ERDS) Channel
14. NRC Management Counterpart Link (MCL)
15. NRC Local Area Network (LAN) Access

Operational Support Center

1. Public Address/Intercom (Gai-Tronics)
2. Station PBX Phone
3. ARD to TSC, Control Room, HP



~~Local Corporate Emergency Operations Facility Response Center (LEOF CERC)~~

1. ARD to TSC, LMC, ~~CERC News Room, Primary Remote Assembly Area, and VEOC, Louisa County, Spotsylvania County~~
2. Insta-Phone Loop to State and County EOCs
3. Commercial Phones (Independent of Station PBX)
4. Radio System
5. Station PBX Phones
6. OPX Phone (General Office Network)
7. NRC Emergency Notification System (ENS)
8. NRC Health Physics Network (HPN)
9. NRC Reactor Safety Counterpart Link (RSCL)
10. NRC Protective Measures Counterpart Link (PMCL)
11. NRC Management Counterpart Link (MCL)
12. NRC Local Area Network (LAN) Access

~~Corporate Emergency Response Center (CERC)~~

- ~~1. OPX Phone (Station PBX)~~
- ~~2. CEOF ARD to TSC~~
- ~~3. Insta-Phone Loop to State and County EOCs~~
- ~~4. General Office Network Phones~~

Local Media Center (Located in North Anna Nuclear Information Center)

1. Commercial Phones (Independent of Station PBX)
2. ARD to ~~LEOF~~, CERC News Room
3. NANIC PBX Phones
4. OPX Phones (Station PBX and General Office Network)
5. Media Conferencing Network
6. Central Office (CO) leased phone lines

Legend

ARD - Automatic Ringdown  
OPX - Off-Premises Exchange  
ENS - Emergency Notification System (NRC)  
PBX - Private Branch Exchange  
VEOC - Virginia Emergency Operations Center

**TABLE 7.2**

**METEOROLOGICAL MONITORING SYSTEM PARAMETERS<sup>(1)</sup>**

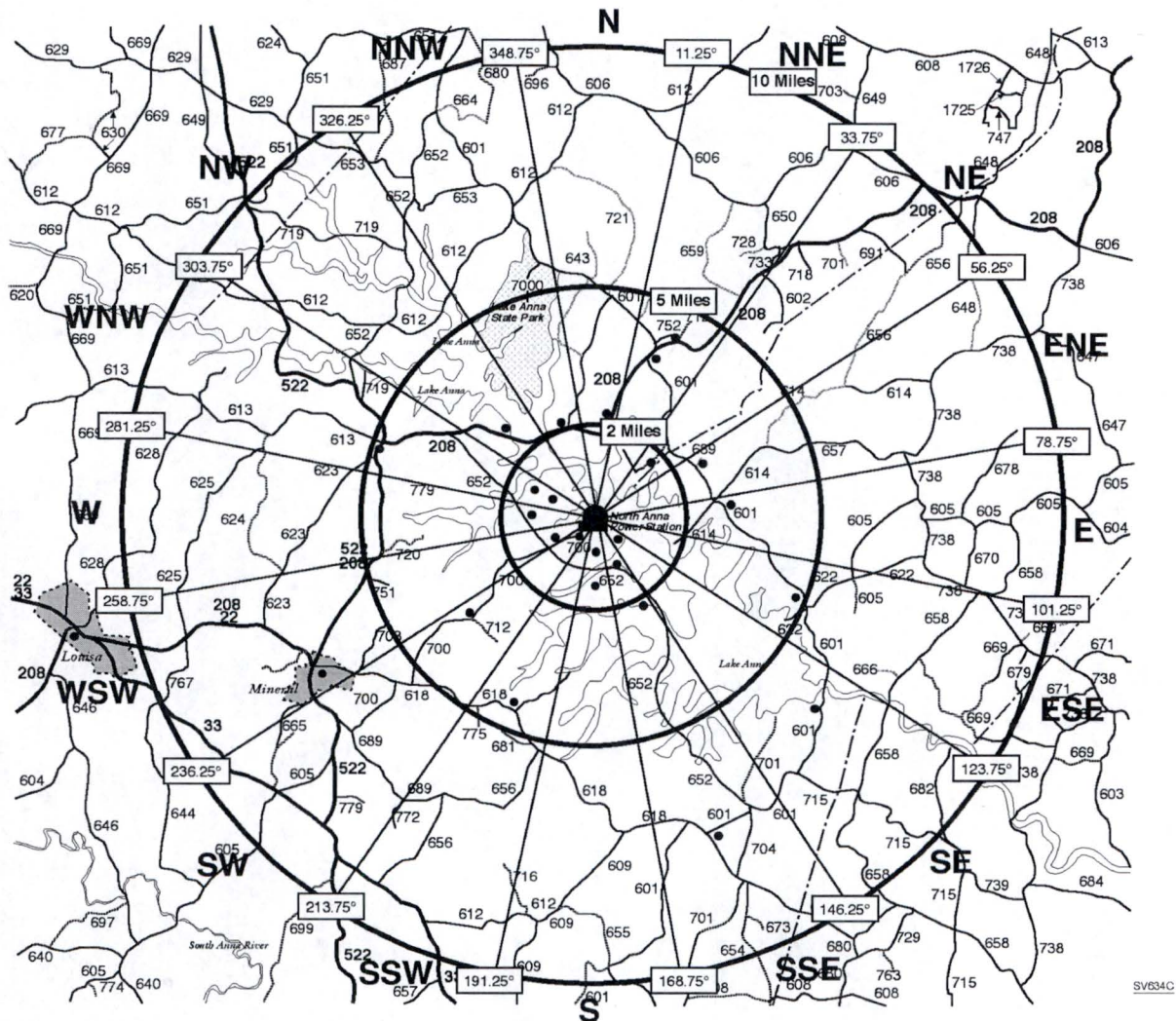
<u>Measurement</u>	<u>48.4 Meters.</u>	<u>Primary Tower</u> <u>10 Meters</u>	<u>Ground</u>	<u>Backup Tower</u> <u>10 Meters.</u>	<u>Control Rm.</u> <u>Readout</u>
Wind Speed	X	X		X	X
Wind Direction	X	X		X	X
Sigma-theta	X	X		X	X <sup>(2)</sup>
Temperature		X			X
Differential Temperature	X	X			X
Dew Point Temperature		X			
Precipitation			X		

(1) All data available via dial-up link at Meteorological Operations in Richmond.

(2) Signal from Backup Tower only.

**FIGURE 7.1**

**NORTH ANNA POWER STATION  
MONITORING LOCATION MAP**



**NOTE:** Specific locations are provided in Figure 7.2. Locations within one-half mile not displayed.



FIGURE 7.2

**NORTH ANNA POWER STATION  
MONITORING LOCATION LISTING\***

<u>Sample Media</u>	<u>Location</u>	<u>Station #</u>	<u>Distance</u> <u>(miles)</u>	<u>Direction</u>	<u>Remarks</u>
Environmental (TLDs)	Bearing Cooling Tower	N-1/33	0.06	N	On-Site
	Sturgeon's Creek Marina	N-2/34	2.04	N	
	Parking Lot "C"	NNE-3/35	0.24	NNE	On-Site
	Good Hope Church	NNE-4/36	3.77	NNE	
	NAPS Waste Treatment Plant, end of parking lot B	NE-5/37	0.20	NE	On-Site
	Boggs Drive	NE-6/38	1.46	NE	
	Weather Tower Fence	ENE-7/39	0.36	ENE	On-Site
	Route 689	ENE-8/40	2.43	ENE	
	Near Training Facility	E-9/41	0.30	E	On-Site
	"Morning Glory Hill"	E-10/42	2.85	E	
	Island Dike	ESE-11/43	0.12	ESE	On-Site
	Route 622	ESE-12/44	4.70	ESE	
	Biology Lab	SE-13/45	0.64	SE	On-Site
	Route 701 (Dam Entrance)	SE-14/46	5.88	SE	
	"Aspen Hills"	SSE-15/47	0.93	SSE	Site Boundary
	Elk Creek	SSE-16/48	2.33	SSE	
	NAPS Access Road	S-17/49	0.36	S	On-Site
	Elk Creek Church	S-18/50	1.55	S	
	NAPS Access Road	SSW-19/51	0.24	SSW	On-Site
	Route 618	SSW-20/52	5.30	SSW	
	500KV Tower	SW-21/53	0.60	SW	On-Site
	Route 700	SW-22/54	3.96	SW	
	At NAPS, on pole, SE of switchyard, entrance on Rt. 700	WSW-23/55	0.38	WSW	On-Site
	Route 700	WSW-24/56	1.00	WSW	Site Boundary
	South Gate of Switchyard	W-25/57	0.32	W	On-Site
	Route 685	W-26/58	1.55	W	
	End of Route 685	WNW-27/59	1.00	WNW	Site Boundary
	Route 685	WNW-28/60	1.40	WNW	
	Laydown Area North Gate	NW-29/61	0.52	NW	On-Site
	Lake Anna Campground	NW-30/62	2.54	NW	
	#1/#2 Intake	NNW-31/63	0.07	NNW	On-Site
	Route 208	NNW-32/64	2.21	NNW	
	Bumpass Post Office	C-1/2	7.30	SSE	
	Orange, Va.	C-3/4	22.00	NW	Control
	Mineral, Va.	C-5/6	7.10	WSW	
	Louisa, Va.	C-7/8	11.54	WSW	Control
Airborne Particulate and Radioiodine	NAPS Waste Treatment Plant, end of parking lot B	01	0.20	NE	On-Site
	Biology Lab	01-A	0.64	SE	On-Site
	Frederick's Hall	02	5.30	SSW	
	Mineral, Va.	03	7.10	WSW	
	Wares Crossroads	04	5.10	WNW	
	Route 752	05	4.20	NNE	
	Sturgeon's Creek Marina	05A	2.04	N	
	Levy, Va.	06	4.70	ESE	
	Bumpass, Va.	07	7.30	SSE	
	End of Route 685	21	1.00	WNW	Site Boundary
	Route 700	22	1.00	WSW	Site Boundary
	"Aspen Hills"	23	0.93	SSE	Site Boundary
	Orange, Va.	24	22.00	NW	Control

\*Source Document VPAP-2103N, Rev 27, Attachment 10, Environmental Sampling Locations.

**NORTH ANNA POWER STATION**  
**EMERGENCY PLAN**

**SECTION 8**

**MAINTAINING EMERGENCY PREPAREDNESS**

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## **8.0 MAINTAINING EMERGENCY PREPAREDNESS**

Dominion has instituted an emergency preparedness program to support development, maintenance and coordination of the company's emergency response capability. The Emergency Plan and associated Emergency Plan Implementing Procedures, which provide specific guidance to emergency response personnel, are revised as required and reviewed at least annually in accordance with this program.

Personnel who may be required to fill emergency response positions receive initial and annual training in their functional responsibilities. Training is also provided for various offsite groups that have agreed to support the station response to an emergency. Dedicated emergency equipment is kept operational through testing in accordance with an established periodic surveillance program. Periodic drills and a biennial exercise are conducted for training and to identify program strengths and weaknesses. Additionally, the emergency preparedness program provides for the issuance of public information material. This material provides the public with a description of the emergency notification process, and guidelines used to protect public health and safety in an emergency. Independent reviews of the emergency preparedness program are also conducted.

### **8.1 RESPONSIBILITIES FOR MAINTAINING EMERGENCY PREPAREDNESS**

The Senior Vice President and Chief Nuclear Officer, assigned the overall authority for maintaining emergency preparedness, has delegated the responsibility for maintaining emergency preparedness to the Vice President Engineering and to the Site Vice President. The Vice President Engineering has delegated the responsibility to the Director Nuclear Regulatory Affairs. The Director Nuclear Regulatory Affairs has delegated the responsibility to the Manager Nuclear Fleet Emergency Preparedness. The Site Vice President has delegated the responsibility to the Director Safety and Licensing. The Director Safety and Licensing has delegated the responsibility to the Manager Nuclear Emergency Preparedness. The primary responsibilities for maintaining the emergency preparedness program include:

- a) Coordinating the Company emergency preparedness program with offsite emergency response organizations
- b) Coordinating Company emergency preparedness planning activities
- c) Conducting public information and media information activities
- d) Coordinating emergency drills and exercises between Company departments and offsite agencies, and ensuring that they are conducted as required;
- e) Coordinating emergency preparedness program reviews
- f) Coordinating emergency preparedness activities between the stations and other Company departments
- g) Providing support to the stations in the area of emergency preparedness
- h) Obtaining letters of agreement from appropriate offsite emergency response organizations
- i) Coordinating the annual review of Emergency Action Levels with State and local
- j) Performing the annual review of the emergency plan and implementing procedures



- k) Maintaining the Emergency Plan, Implementing Procedures, and other documents related to Emergency Preparedness
- l) Ensuring distribution of copies of the Emergency Plan and Implementing Procedures to persons or organizations with responsibility for implementation of the plan or procedures
- m) Coordinating emergency preparedness training and ensuring that it is performed
- n) Ensuring that required testing and maintenance of emergency equipment is performed
- o) Ensuring that required emergency preparedness records are maintained and filed
- p) Coordinating the conduct of an augmentation capability assessment at least once per calendar quarter

The hierarchy for program maintenance is further outlined in VPAP-2601, "Maintaining Emergency Preparedness".

## **8.2 MAINTENANCE OF THE EMERGENCY PLAN , EMERGENCY PLAN IMPLEMENTING PROCEDURES, AND EMERGENCY PERSONNEL NOTIFICATION LIST**

Station documents which are required to ensure emergency preparedness include:

- a) The North Anna Emergency Plan
- b) The North Anna Emergency Plan Implementing Procedures
- c) The North Anna Emergency Personnel Notification List

### **8.2.1 Annual Review of the Emergency Plan and Emergency Plan Implementing Procedures**

Nuclear Emergency Preparedness personnel shall review the North Anna Emergency Plan and associated Implementing Procedures at least annually, certifying that they are adequate and current. Nuclear Emergency Preparedness personnel shall also review the results of independent assessments of the emergency preparedness program and critiques of exercises and drills to evaluate their impact on station emergency preparedness documents. The results of these reviews shall be reported to the Facility Safety Review Committee (FSRC) and the documentation filed by Records Management. ~~FSRC shall review proposed revisions to the Emergency Plan and the Emergency Plan Implementing Procedures and make recommendations to the Site Vice President, who is responsible for their approval. If a proposed revision is judged to decrease the effectiveness of these documents with respect to the requirements of 10 CFR 50.47 (b) or 10 CFR 50, Appendix E, it shall be submitted to the NRC for approval in accordance with the requirements of 10 CFR 50.54 (q) prior to implementation.~~

### **8.2.2 Review of the Emergency Personnel Notification List**

Nuclear Emergency Preparedness personnel shall ensure a review of the Emergency Personnel Notification List is performed at least quarterly, and shall ensure required revisions are made. Documentation of this review shall be filed by Records Management.

### **8.2.3 Revision of the Emergency Plan**

In accordance with 10CFR50.54(q)(3), proposed revisions to the North Anna Emergency Plan shall be screened/evaluated against 10CFR50.47(b) and 10CFR50, Appendix E, to determine whether the proposed change is a reduction in effectiveness. Any such changes shall be submitted to the NRC for

approval prior to implementation in accordance with the requirements of 10CFR50.54(q)(4). The FSRC shall review and approve proposed revisions to the North Anna Emergency Plan.

#### **8.2.4 Maintenance of Emergency Plan Implementing Procedures**

Proposed revisions to EIPs shall be reviewed to verify the effectiveness of the emergency plan is maintained as required by 10CFR50.54(q)(2). The Manager NEP shall review and approve proposed revisions to EIPs.

#### **8.2.3-5 Distribution of Emergency Plans**

In accordance with 10 CFR 50.54(q)(5) revisions to the Emergency Plan shall be submitted to the NRC within 30 days following the assigned effective date. Revisions to the NAEP will also be distributed to those offsite agencies requiring copies in order to perform their emergency response functions.

#### **8.2.4-6 Review of Evacuation Time Estimates**

Nuclear Emergency Preparedness personnel shall ensure evacuation time estimates (ETEs) are developed within 365 days of when U.S. Census Bureau decennial data becomes available. ETEs are a factor considered in the development of off-site protective action recommendations (see Section 6.3.1) and are provided to Commonwealth and local governmental authorities for use in developing off-site protective action strategies. ETEs are reviewed against estimated EPZ permanent resident population changes at least once a year and within 365 days of the date of the previous ETE or its most recent review. Increases of ETEs greater than the limits detailed in 10 CFR 50 Appendix E require the ETE analysis be updated. The decennial ETE and its updates are submitted to NRC as required by 10 CFR 50 Appendix E.

#### **8.3 Training of Station Emergency Response Organization Personnel**

The effectiveness of a response to a station emergency relates directly to the level of emergency preparedness maintained by station emergency response organization personnel. Emergency preparedness ~~of station personnel~~ is maintained through an integrated program that includes general orientation for all persons badged at the station and additional detailed training for persons assigned specific emergency response functions to supplement the general orientation and normal job related training.

The primary objectives of this emergency preparedness training program are to:

- a) Ensure emergency response personnel maintain familiarity with the North Anna Emergency Plan, its implementing procedures and their functional responsibilities during an emergency
- b) Inform emergency response personnel of their functional role and responsibilities during an emergency
- c) Familiarize emergency response personnel with significant changes to the North Anna Emergency Plan and its implementing procedures



NOTE: Update of references to TR-NA-TPG-2400, which has been superseded, is beyond the scope of this license amendment request.

NAEP  
Page 8.6  
Revision # TBD

### **8.3.1 Responsibilities for Maintaining Emergency Preparedness Training**

To ensure that regulatory requirements and guidance for conducting emergency preparedness training are met, a training program guide has been developed (TR-NA-TPG-2400, North Anna Nuclear Responder Training Program Guide, or TR-AA-TPG-2400, Emergency Response Organization (ERO) Training Program (when issued)). Responsibilities for ensuring emergency preparedness training are provided as follows:

- a. The Site Vice President is responsible for ensuring station personnel are trained in accordance with TR-AA-TPG-2400 or TR-AA-TPG-2400 (when issued).
- b. Department directors, managers and supervisors are responsible for ensuring their personnel receive training. This includes designating individuals who may serve as primary, interim or alternate emergency response personnel and ensuring they successfully complete the training specified by TR-NA-TPG-2400 or TR-AA-TPG-2400 (when issued).
- c. The Manager Nuclear Emergency Preparedness is responsible for developing and scheduling training programs that meet the requirements for this plan, and for maintaining records to document the training.
- d. Nuclear Emergency Preparedness personnel other than those designated to develop training programs will independently check that the training required by TR-NA-TPG-2400, or TR-AA-TPG-2400 (when issued), and this plan is accomplished.

### **8.3.2 Nuclear Employee and Visitor Training**

All persons badged to enter the Protected Area unescorted receive, as part of Nuclear Employee Training, computer-based training (CBT) and annual retraining in the following subjects:

- a) Station Policies and Procedures including, in part:
  - 1) Reporting abnormal conditions (e.g., fire, first aid event, etc.)
  - 2) Fire and First Aid alarms and announcements
  - 3) Response to Fire and First Aid emergencies
- b) Radiation Protection Training including basic principles of radiological safety
- c) Emergency Preparedness Training Overview including:
  - 1) General scope and overview of the Emergency Plan
  - 2) Station Emergency Alarm and announcements
  - 3) Response to Station Emergency Alarm
  - 4) Personnel accountability
  - 5) Visitor control during an emergency
  - 6) Site evacuation
  - 7) Emergency Plan Implementing Procedures
  - 8) Emergency Organization
  - 9) Emergency Control Centers (Emergency Facilities)
  - 10) Emergency Action Levels



NOTE: Update of references to TR-NA-TPG-2400, which has been superseded, is beyond the scope of this license amendment request.

NAEP  
Page 8.7  
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As appropriate, certain station visitors receive training in some or all of the above subjects in accordance with station administrative procedures.

### **8.3.3 Emergency Response Personnel Training**

Personnel designated to fill interim, primary or alternate emergency response positions will receive training in accordance with TR-NA-TPG-2400 or TR-AA-TPG-2400 (when issued). Emergency preparedness training not conducted by the NEP staff is conducted pursuant to supporting department training program guidance. NEP will ensure that this training is consistent with the provisions of TR-NA-TPG-2400 or TR-AA-TPG-2400 (when issued). These training programs taken collectively establish the initial training and retraining requirements for all emergency response positions. Table 8.1 provides a listing of select emergency response positions along with an overview of the training provided. Revisions to TR-NA-TPG-2400, or TR-AA-TPG-2400 (when issued), that affect those descriptions referenced in Table 8.1 will be reflected in the next scheduled revision of this Plan. Training exemptions and equivalent qualifications ~~Equivalency credit~~ for required training sessions ~~may be awarded~~ based on an individual's knowledge of the subject matter may be approved by the training program owner. ~~Such credit requires the approval of the Manager Nuclear Emergency Preparedness and the Site Vice President.~~

### **8.3.4 Cognitive Evaluations**

Cognitive evaluations may include self-critiques, group discussions, and/or tests administered following completion of training. Evaluations are normally administered by the course instructor and may be scheduled at the end of a workshop, learning activity, instructional unit, or a number of related units. A minimum score of 70% is considered passing on tests. For training incorporated into regularly scheduled continuing training programs, the passing criteria for that training program applies. Individuals failing to successfully complete the required training within the required time interval will be relieved of their emergency response assignments.

### **8.3.5 Task Performance Evaluations**

Task performance evaluations are prescribed for individuals who must perform tasks as responders which are outside of their normal day-to-day responsibilities and may be satisfied through completion of a Job Demonstration Guide (JDG), participation in an appropriate drill, Simulator Exercise, facility training activity or included in classroom learning activities as part of the training requirement. JDG evaluations are conducted by the applicable primary responder, team leader or instructor and are scored on a pass/fail basis.

### **8.3.6 Training Records**

The Manager Nuclear Emergency Preparedness is responsible for ensuring that required emergency preparedness training records are maintained. These records are maintained by Records Management. The required emergency preparedness training records include:

- a) Program Records: Attendance sheets, master copies of Job Demonstration Guides, master copies of tests and answer keys, copies of instructor guides, training rosters and extensions.
- b) Trainee Records: Completed tests and responder training records.



#### **8.4 TRAINING OF OFFSITE SUPPORT PERSONNEL**

The various offsite organizations which support the station during an emergency receive training as part of their own emergency preparedness programs. For example, ~~corporate personnel receive emergency preparedness training as part of the Corporate Emergency Response Plan, and~~ the State and local governments conduct training for their personnel as part of their Radiological Emergency Response Plan program. However, in order to promote effective emergency response capability, the station offers site specific emergency response training on an annual basis to local offsite emergency support organizations which have agreed to provide assistance. The organizations include the Commonwealth of Virginia Department of State Police and local county sheriffs departments, volunteer fire companies, and rescue squads.

The annual training shall address the following:

- a) The basic scope of the North Anna Power Station Emergency Plan
- b) Emergency classifications
- c) Notification methods
- d) Basic radiation protection
- e) Station access procedures
- f) The individual, by title, in the station emergency response organization who will direct their activities onsite
- g) Definition of their support roles

Training offered to local offsite support organizations will be coordinated with Station Safety and Loss Prevention or Station Security, as appropriate. Safety and Loss Prevention, Security, and/or Nuclear Training may assist in the conduct of offsite training. Training records shall be maintained and filed by Records Management. These records shall include letters of invitation (or record of telephone invitation), attendance sheets, and the curriculum outline.

#### **8.5 EMERGENCY DRILLS**

As a part of maintaining emergency preparedness, periodic drills shall be conducted. The primary objectives of drills are to:

- a) that facilities, equipment, and communication systems function as required
- b) Demonstrate the adequacy of station procedures used during an emergency
- c) Familiarize station emergency response personnel with planned emergency response actions
- d) Disclose deficiencies which may require corrective action

Drills may be conducted independently, in conjunction with another drill or conducted as part of an exercise. The individual responsible for the drill shall ensure that all necessary documentation is maintained.

A scenario will be developed to support the conduct of each drill. The scenario should be designed to allow for open decision-making (free-play). If a drill is conducted in conjunction with another drill or as part



of an exercise, the drill scenario, objectives and narrative shall be incorporated into the overall drill/exercise package. Drill packages shall include:

- a) Objectives of the drill
- b) Evaluation criteria
- c) Date and time period of the drill
- d) Participating personnel or organizations
- e) A narrative summary describing the overall integration of scenario events (e.g., simulated casualties, offsite assistance, rescue of personnel, simulated activity levels, and deployment of monitoring teams)
- f) A time schedule of the real and simulated events

It is not required that all emergency response personnel assigned a particular emergency function participate in a drill covering that function. State and local governments will be allowed to participate in drills at their request. Participation by offsite organizations may be simulated.

At least once every eight-year exercise cycle, at least one drill shall be conducted involving CERC response to simultaneous events at North Anna Power Station and Surry Power Station.

Drills shall be controlled and observed by individuals qualified to conduct and evaluate the drill. Critiques will be used to document evaluation of the drill. Deficiencies identified as a result of the drill evaluation will be presented to Station Management, and corrective actions will be coordinated through NEP.

Records of each drill will be maintained by Records Management and include the drill scenario package and the post-drill critique. Records of drills held in conjunction with an exercise may be integrated into the emergency exercise package (i.e. scope, objectives, critique, etc.).

The types and frequencies of drills conducted at the station are designated below.

Provisions for conducting post accident sampling drills, previously addressed herein, became obsolete upon implementation of contingency plans for obtaining and analyzing highly radioactive samples of reactor coolant, containment sump, and containment atmosphere. Although these contingency plans must be available during an accident, they do not have to be carried out in emergency plan drills or exercises. (Reference NRC Letter, Subject: North Anna Power Station, Units 1 and 2 - Issuance of Amendments Re: Elimination of Post-Accident Sampling System Requirements, dated December 19, 2001, Serial No. 01-760)

In addition to the following drills, an augmentation capability assessment shall be performed once per calendar quarter. This activity shall assess the elements involved in notification processes for augmenting the emergency response organization.

#### **8.5.1 Communications Drills**

Communications drills shall be conducted at least once per calendar year and shall include:

- a) Use of emergency communications systems between the Control Room, the TSC, the ~~LEOFCERC~~, the OSC, the NRC Operations Center, the Virginia EOC, the county EOCs, and the Onsite and Offsite Monitoring Teams

- b) Sending, receiving, and verification of message content

#### **8.5.2 Fire Drills**

Fire drills shall be conducted in accordance with the requirements of the North Anna Fire Protection Program.

#### **8.5.3 Medical Emergency Drills**

Medical Emergency drills shall be conducted at least once per calendar year and shall include:

- a) A simulated contaminated injured individual
- b) Participation by a local rescue squad
- c) Transport to an offsite medical facility
- d) Participation by the offsite medical facility

#### **8.5.4 Environmental Monitoring Drills**

Environmental Monitoring drills shall be conducted at least once per calendar year and shall include:

- a) Collection of water, vegetation, soil, and air samples both onsite and offsite, as appropriate
- b) Analysis of the above samples
- c) Use of communications with the monitoring teams
- d) Use of the appropriate procedures for collecting and analyzing samples and recording results

#### **8.5.5 Radiological Monitoring Drills**

Radiological Monitoring drills shall be conducted semi-annually with a maximum allowable grace period not to exceed 25%, and shall include:

- a) Response to simulated elevated airborne and/or liquid activity levels, as appropriate
- b) Response to simulated elevated area radiation levels
- c) Analysis of the simulated radiological situation using the appropriate procedures.

#### **8.5.6 Combined Functional Drills**

Combined Functional drills shall be conducted at least once during the interval between biennial exercises and involve a combination of some of the principal functional areas of onsite emergency response capabilities, such as:

- a) Management and coordination of emergency response
- b) Accident assessment
- c) Protective action decision making
- d) Plant system repair and corrective actions

### **8.6 EMERGENCY EXERCISES**

An emergency exercise shall be conducted with a stated scope and objectives. The primary objectives of an emergency exercise are to:

- a) Check the integrated capability of the various emergency response organizations to respond to an emergency



- b) Test a major portion of the basic elements existing within the emergency response plans and organizations
- c) Demonstrate the adequacy of procedures used during an emergency
- d) Provide an opportunity for emergency response personnel to demonstrate their ability to perform planned emergency response actions
- e) Disclose deficiencies which may require corrective action

#### **8.6.1 Scheduling of Emergency Exercises**

An emergency exercise shall be conducted at North Anna Power Station at least once per biennium, normally on even numbered years. All biennial exercises must include demonstration of response to at least the Site Area Emergency classification level.

At least once in every eight-year exercise cycle, a drill or exercise should be initiated between 6:00 pm and 4:00 am on a weekday or during a weekend. Unannounced exercises or drills are conducted on a periodic basis to the extent such exercises can be supported by affected internal and external organizations.

#### **8.6.2 Emergency Exercise Content**

Exercises are conducted on a periodic basis. The exercises allow demonstration of the key skills specific to emergency response duties in the Control Room, TSC, OSC, ~~EOFCERC~~, and Joint Information Center in order to implement the principal functional areas of emergency response. The exercises:

- a) Test the adequacy of timing and content of implementing procedures and methods
- b) Test emergency equipment and communications networks
- c) Test the public notification system
- d) Test the familiarity of emergency organization personnel with their duties

Scenarios are varied so major elements of the state, local and station plans and preparedness organizations are tested, including, at least once during the 8-year exercise cycle, the following:

- a) Hostile action directed at the plant site
- b) No radiological release or an unplanned minimal radiological release that does not require public protective actions
- c) An initial classification of or rapid escalation to a Site Area Emergency or General Emergency
- d) Implementation of strategies, procedures, and guidance developed under §50.54(hh)(2)
- e) Integration of offsite resources with onsite response

#### **8.6.3 Emergency Exercise Scenarios**

Each emergency exercise shall be based on a pre-planned written scenario. The overall exercise package shall address, but not be limited to:

- a) Basic performance objectives of the exercise
- b) Evaluation criteria used to check demonstration of performance objectives
- c) Date, initiation time, and exercise duration
- d) Participating organizations
- e) Simulated events

- f) Time schedule of the real and simulated events
- g) A narrative summary describing the overall integration of scenario events such as simulated causalities, offsite assistance, rescue of personnel, use of protective equipment, simulated activity and radiation levels, and deployment of monitoring teams
- h) A description of the number, location, and basic duties of the controllers
- i) A description of the arrangements made for, and advance materials to be provided to, the controllers. Advance knowledge of the scenario shall be minimized to ensure realistic participation by those involved.

#### **8.6.4 Conduct of Emergency Exercises**

The emergency exercise will be initiated and supervised by designated controllers. These controllers shall ensure that:

- a) The information supplied to the participants is of sufficient detail to allow realistic analysis of the simulated events and to provide a basis for rational decision making
- b) The information is supplied on a real time basis
- c) The exercise is not so structured as to prevent free play and independent decision making on the part of the participants

#### **8.6.5 Emergency Exercise Evaluation and Corrective Action**

Emergency exercises shall be evaluated by qualified controllers. Controllers shall be selected based on expertise, knowledge of the areas to be evaluated, and familiarity with emergency response requirements. Personnel from federal, state, or local governments may observe the exercise. Specific areas to be evaluated by the controllers will be defined in the form of pre-printed critique sheets.

Critiques will be held as soon as practicable after the exercise. Critiques should be attended by exercise controllers and key participants. Notes of critique comments shall be recorded. Controllers shall complete critique sheets documenting their observations. Critique sheets shall be submitted in accordance with the schedule established for the exercise.

Within 60 days of the exercise, a Post-Exercise Critique Report shall be issued, including suggested corrective actions. Identified corrective actions will then be assigned for implementation.

#### **8.6.6 Records of Emergency Exercises**

The exercise scenario package and Post-Exercise Critique are filed by Records Management.

### **8.7 TESTING AND MAINTENANCE OF EMERGENCY EQUIPMENT**

Emergency equipment shall be periodically tested to identify and correct deficiencies. The specific scope and responsibilities for performing these tests are provided in administrative procedures. For inventory purposes, an item-by-item count is not required if a mechanism is in place to assure the container has not been compromised since the previous satisfactory check. The testing shall include:

- a) The contents of the emergency kits dedicated for emergency use shall be inventoried quarterly and following each use.



- b) Dedicated emergency survey instrumentation shall be inventoried and operationally checked quarterly and following each use. Calibration of dedicated emergency survey instrumentation shall be performed in accordance with manufacturer's recommendations.
- c) Self-contained breathing apparatus shall be inspected and operationally checked monthly and following use during an emergency.
- d) State and local ringdown loop (Insta-phone) extensions and the ringdown phone to the Virginia EOC located at the station and ~~LEOF-CERC~~ shall be operationally checked on a monthly basis. In addition, NRC Emergency Notification System extensions and NRC Health Physics Network extensions located at the station and ~~LEOF-CERC~~ shall be operationally checked monthly.
- e) A daily operability check of the Safety Parameter Display System (SPDS)
- f) Every 18 months, functional and performance testing of the TSC and ~~LEOF~~ Ventilation system
- g) Operability testing in accordance with manufacture's recommendations and biennial calibrations of TSC and ~~LEOF~~ radiation monitors
- h) Semimonthly functional polling testing and quarterly full cycle activation and/or growl testing of the Early Warning System (EWS)

#### **8.8 INFORMING THE PUBLIC**

Information describing the emergency notification process as well as actions that should be taken in the event of an emergency shall be provided to the public on an annual basis. Information provided to the public shall include:

- a) Educational information on radiation
- b) Contact points for additional information
- c) Special needs of the handicapped
- d) Initial actions following Early Warning System Activation
- e) Protective actions, such as sheltering or evacuation
- f) Evacuation routes

The company will coordinate its efforts with State and local authorities to ensure the public is informed by using the best means available. These means may include:

- a) Information in telephone books
- b) Utility bill inserts
- c) Newspaper ads
- d) Postings in public areas
- e) Information in calendars distributed to residents

The information will be distributed to ensure coverage within the 10 mile emergency planning zone.

The company shall also establish a telephone system for dealing with rumors. The telephone numbers will be announced over the Emergency Alert System and individuals within the 10 mile emergency planning zone will be invited to call collect.

The Manager Nuclear Fleet Emergency Preparedness shall ensure that a program to acquaint the news media with the following information is offered on an annual basis:

- a) Emergency plans
- b) Information concerning radiation
- c) Points of contact for release of public information in an emergency

#### **8.9 INDEPENDENT REVIEW OF THE EMERGENCY PREPAREDNESS PROGRAM**

An independent review of the emergency preparedness program shall be conducted either:

- a) at intervals not to exceed 12 months or
- b) as necessary, based on an assessment against performance indicators, and as soon as reasonably practicable after a change occurs in personnel, procedures, equipment, or facilities that potentially could affect emergency preparedness, but no longer than 12 months after the change. In any case, all elements of the emergency preparedness program shall be reviewed every 24 months.

This review shall be conducted in accordance with 10 CFR 50.54 (t). This review shall include:

- a) The North Anna Emergency Plan and Implementing Procedures
- b) Emergency Plan training
- c) Emergency drills
- d) Emergency exercises
- e) Emergency equipment
- f) Interfaces with State and local governments
- g) Required records and documentation

This review shall be conducted by an internal company organization or outside consultant which has no direct responsibility for emergency preparedness.

The results of the review and recommendations for improvements shall be documented and reported to company management. The results regarding adequacy of interface between Dominion and State and local governments shall be made available to the cognizant offsite authority. Recommendations for improvement shall be evaluated and, when appropriate, assigned for corrective action.

The following records shall be filed by Records Management and maintained for 5 years:

- a) The review results and recommended improvements
- b) The answers to the recommended improvements
- c) A description of the corrective actions taken



TABLE 8.1  
EMERGENCY PREPAREDNESS TRAINING

<u>EMERGENCY RESPONSE POSITION</u>	<u>SCOPE OF TRAINING</u> (See Footnotes, next page)
Station Emergency Manager	1, 2, 7, 13, 15
Emergency Communicator	1, 3, 13
Emergency Procedures Coordinator	1, 2, 13
Emergency Operations Director	1, 2, 13, 15
Emergency Maintenance Director	1, 4, 6, 13
Emergency Technical Director	1, 6, 13, 15
Shift Technical Advisor	1, 2, 13, 15
Emergency Administrative Director	1, 6, 7, 13
Radiological Assessment Director	1, 9, 10, 11, 13, 15
Radiation Protection Supervisor	1, 10, 11, 13
Operational Support Center Director	1, 4, 5, 13
OSC Support Team	1, 4, 6, 13
Technical Support Team	1, 6, 13, 15
Chemistry Team	1, 12, 13
Administrative Support Team	
Team Leader	1, 6, 8, 13
Clerical Personnel	1, 6, 13
Loss Prevention/Safety Personnel	1, 13, 14
Security Team	1, 8, 13
Dose Assessment Team	1, 9, 13
Sample Analysis and Monitoring Teams	1, 11, 13
Fire Brigade	1, 13, 14
First Aid Team	1, 13, 14
Damage Control Team	1, 4, 13
Search and Rescue Team	1, 13, 14
<u>Corporate Response Manager and Technical Support Manager</u>	<u>1, 13, 16, 17</u>
<u>Nuclear News Manager and News Team</u>	<u>1, 13, 17, 18</u>
<u>Chief Technical Spokesperson and JIC Support Team</u>	<u>1, 13, 17, 18</u>
<u>Executive Liaison</u>	<u>1, 13, 16, 17</u>
<u>Operations Support Coordinator and Operations Support Team</u>	<u>1, 13, 15, 17</u>
<u>Radiological Assessment Coordinator</u>	<u>1, 9, 10, 13, 15, 17</u>

<u>Accident Assessment Team dose assessors</u>	<u>1, 9, 13, 17</u>
<u>HPN Communicator</u>	<u>1, 3, 13, 17</u>
<u>State &amp; Local Emergency Communicator (CERC)</u>	<u>1, 3, 13, 17</u>
<u>CERC positions not listed above</u>	<u>1, 13, 17</u>
<u>Information Center Coordinators</u>	<u>1, 13, 19</u>



SCOPE OF TRAINING FOOTNOTES:

1. Training provided to all emergency response personnel emphasizes an overview of: Emergency organization, emergency classification system, personnel accountability, emergency exposure limits, emergency response facilities, security access control and site evacuation process, and exposure control techniques. Station badged responders will receive this training as part of Nuclear Employee Training.
2. Training provided emphasizes: Assessing emergencies, classifying emergencies, notification systems, contaminated injured personnel actions, site evacuation, emergency radiation exposure authorization, offsite support group capabilities, and recovery.
3. Training provided emphasizes: Notifications and reports to offsite authorities and communication systems as appropriate for individual position assignments.
4. Training provided emphasizes: Emergency Plan Damage Control organization, communication systems, and planning and coordination of damage control tasks.
5. Training provided emphasizes: Activation and administration of the Operational Support Center.
6. Training provided emphasizes: Activation and administration of the Technical Support Center.
7. Training provided emphasizes: Site evacuation procedure.
8. Training provided emphasizes: Notification of station personnel, personnel accountability/evacuation, and station access control during an emergency. The Security Department is responsible for the conduct of this training and for ensuring that documentation is properly maintained for Security Department personnel.
9. Training provided emphasizes: Dose Assessment.
10. Training provided emphasizes: Control of emergency Health Physics organization, emergency exposure evaluation, and protective measures.

11. Training provided emphasizes: Respiratory protection, personnel decontamination, inplant monitoring, offsite monitoring, monitoring of emergency centers and remote assembly areas, contaminated injuries, and radio communications as appropriate for individual position assignments.
12. Training provided emphasizes: Chemistry sampling and high level activity sample analysis under emergency conditions.
13. Training provided emphasizes: Organizational interfaces and responsibilities appropriate for individual position assignments.
14. Training provided emphasizes: Emergency organizational interfaces, search and rescue procedures, and communications systems. Fire Brigade members shall also receive Fire Brigade training as required by the North Anna Power Station Fire Protection Program. First Aid Team Members shall also receive training as required by station administrative procedures, which meet the requirements of the Accident Prevention Manual.
15. Training provided emphasizes: Use of the Plant Computer System appropriate for individual position assignments.
16. Training provided emphasizes: Protective measures, notification systems and processes, offsite support group capabilities and interface, press release review, and recovery.
17. Training provided emphasizes: Activation and administration of the Corporate Emergency Response Center.
18. Training provided emphasizes: Activation and administration of the Joint Information Center appropriate for individual position assignments.
19. Training provided emphasizes: Activation and administration of the Local Media Center appropriate for individual position assignments.



**NORTH ANNA POWER STATION**  
**EMERGENCY PLAN**

**SECTION 9**

**RECOVERY**

<u>Part</u>	<u>Subject</u>	<u>Page No.</u>
9.0	Recovery	9.2
9.1	Recovery Methodology	9.2
9.2	Population Exposure	9.2
<u>Figure 9.1</u>	<u>Example Recovery Organization</u>	<u>9.X</u>

## 9.0 RECOVERY

The recovery process will be managed by a special, designated organization composed of Dominion personnel. The recovery organization is described in ~~the Corporate Emergency Response Plan~~ Figure 9.1. The basic organization may be modified, as required, to address the needs of the given situation. The ~~Recovery-Technical Support~~ Manager assumes control and direction of the recovery operation with the authority and responsibilities for implementing and administering the recovery plan and organizations set forth in the Corporate Emergency Response Plan. Responsibilities of the recovery organization include defining recovery objectives, developing a plan to accomplish these objectives, establishing controls and anticipating potential complications, monitoring the recovery effort and adjusting the plan accordingly, and evaluating accomplishments against the designated objectives.

The recovery process is implemented when the ~~Recovery~~ Corporate Response Manager, Technical Support Manager and the Station Emergency Manager, with concurrence of State and Federal agencies, have determined the station to be in a stable and controlled condition. Upon the determination, ~~the Recovery Manager shall notify~~ the NRC Operations Center, the Virginia Emergency Operations Center, and the ~~Local-County~~ local Emergency Operations Centers will be notified that the emergency has been terminated and any required recovery has commenced.

### 9.1 RECOVERY METHODOLOGY

The Recovery organization will develop plans and procedures designed to address both immediate and long term actions. The necessity to maintain protective measures implemented during the emergency will be evaluated and, if deemed appropriate, the Recovery organization will recommend relaxation of the protective measures.

The following conditions shall be considered appropriate for the recommendation to relax protection measures.

- a. Station parameters of operation no longer indicate a potential or actual emergency exists.
- b. The release of radioactivity from the Station is controllable, no longer exceeds permissible levels and does not present a credible danger to the public.
- c. The Station is capable of sustaining itself in a long term shutdown condition.

Because it is not possible to foresee all of the consequences of an event, specific recovery procedures may need to be written to address specialized requirements. Normal practices will be followed to the furthest extent possible with regard to maintenance, repair, modification, decontamination, and radiation exposure control activities. Where possible, existing station procedures will be utilized in the areas of operations, maintenance and radiological controls. Any special recovery procedures will require the same review and approval process accorded other station procedures and, as such, will require the approval of the Facility Safety Review Committee (FSRC). Recovery plan objectives and associated schedules will be periodically evaluated and modified, if necessary, to accommodate changing circumstances. Provisions to review, prioritize, coordinate and proceduralize recovery activities (e.g., repair, maintenance, modification, and decontamination) will also be addressed. The recovery organization



addresses planning and coordination of the recovery effort (in cooperation with governmental officials, when required). Federal and state agencies may augment the recovery organization and participate in establishing recovery objectives.

## **9.2 POPULATION EXPOSURE**

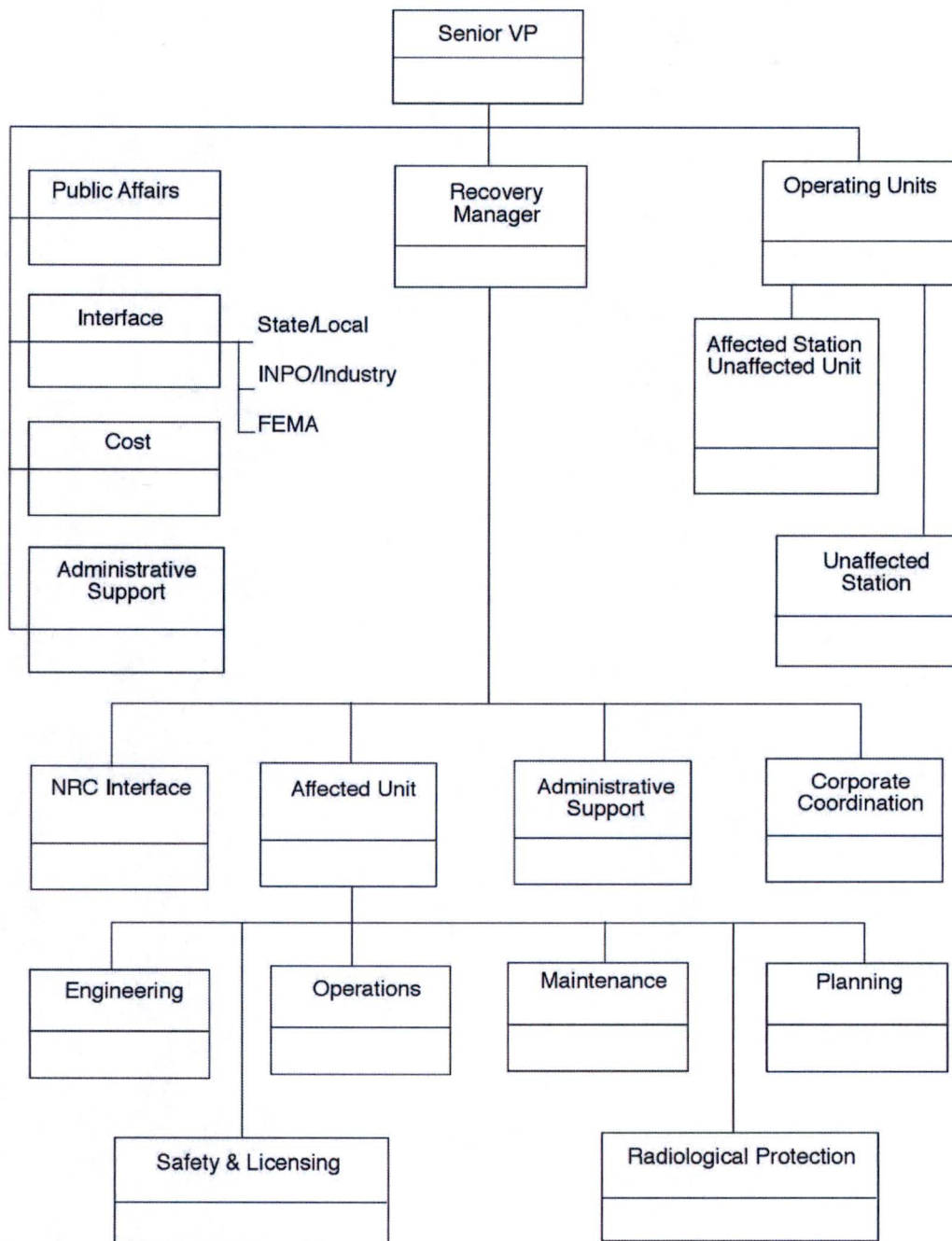
Total population doses shall be periodically estimated in the affected sectors and zones utilizing population distribution data from within the emergency planning zones.

Station personnel initially determine Total Effective Dose Equivalent (TEDE) due to external exposure from airborne material, external exposure from ground deposition, and internal exposure due to inhalation. Initial calculations are also performed for determination of Thyroid Committed Dose Equivalent (CDE) resulting from inhalation of radioiodines. The methodology used is consistent with that presented in EPA-400-R-92-001, MANUAL OF PROTECTIVE ACTION GUIDES AND PROTECTIVE ACTIONS FOR NUCLEAR INCIDENTS.

Determination of total population doses will be performed utilizing the Meteorological Information and Dose Assessment System (MIDAS) computer code or equivalent, and will include assessments of exposure received from (but not necessarily limited to) immersion, inhalation, ground shine, and ingestion of radioactive materials.

EXAMPLE RECOVERY ORGANIZATION

FIGURE 9.1



EXAMPLE RECOVERY ORGANIZATION



**NORTH ANNA POWER STATION**  
**EMERGENCY PLAN**

**SECTION 10**  
**APPENDICES**

<u>Part</u>	<u>Subject</u>
10.1	Letters of Agreement
10.2	Deleted
10.3	Maps of Exclusion Area, Low Population and Emergency Planning Zone Boundaries
10.4	Listings of EPIPs
10.5	Protective Equipment and Supplies
10.6	Deleted
10.7	Supporting Plan Contact
10.8	Estimation of Evacuation Times
10.9	Radiation Emergency Plan, MCVH/VCU - Dominion Power
10.10	Federal Radiological Monitoring and Assessment Center (FRMAC) Operations Plan
10.11	Initiating Conditions/Emergency Action Levels

**Letters of Agreement**

Federal Agencies:

U. S. Department of Energy - Field Office, Oak Ridge

State Agencies:

Commonwealth of Virginia Department of Emergency Management

Commonwealth of Virginia Department of Health

Commonwealth of Virginia Department of State Police

Commonwealth of Virginia Department of Game and Inland Fisheries

Virginia Commonwealth University Medical Center

Local Agencies:

Louisa County Administrator

Louisa County Sheriff

Louisa County Department of Fire and EMS

Spotsylvania County Sheriff

Spotsylvania Department of Fire, Rescue, and Emergency Management

Orange County Sheriff

Orange County Administrator

Caroline County Department of Fire & Rescue

Caroline County Sheriff

Hanover County Administrator

Hanover County Sheriff

(Maintained under separate cover by Nuclear

Emergency Preparedness Department. Available upon request.)





Department of Energy  
National Nuclear Security Administration  
Oak Ridge Office  
P.O. Box 2001  
Oak Ridge, Tennessee 37831



September 2, 2016

Mr. Mark Sartain  
Vice President Engineering  
Dominion Resources, Inc.  
5000 Dominion Blvd., 2 SE  
Glen Allen, VA 23060

Dear Mr. Sartain:

**U.S. DEPARTMENT OF ENERGY (DOE) RADIOLOGICAL ASSISTANCE  
AVAILABILITY FOR NORTH ANNA AND SURRY NUCLEAR POWER STATIONS**

This letter is in response to the July 27, 2016 letter from you concerning the above subject. You requested that the Letter of Agreement for the availability of the DOE/National Nuclear Security Administration (NNSA) Radiological Assistance from RAP Region 2 be updated. This letter supercedes all previous such letters between your organization and the DOE Oak Ridge Office (ORO).

The current version of the DOE/NNSA Radiological Assistance Program, Region 2, Regional Plan is dated December 2006, and should be on file at your office. If you are unable to locate your copy, please let us know and an electronic PDF version will be provided to you. Please note that this document is currently undergoing a revision and once completed and approved, it will be provided to you electronically.

This plan sets forth the procedure for obtaining radiological assistance and conditions pertaining to the scope that DOE will provide in support of your facility. Prior to dispatch of radiological assistance, we will consult with the Nuclear Regulatory Commission (NRC) and the appropriate state authorities to ensure that they are informed of the request and that there are not any duplication of efforts. The type and duration of radiological assistance provided will depend on the severity of the incident and will be limited to advice and emergency actions essential for the control of immediate hazards to health and safety. Please recognize that RAP Region 2 also has the responsibility and capabilities to coordinate the request and arrival of additional DOE/NNSA Emergency Response Assets, should the situation warrant.

We understand that the combined license application Dominion submitted for the proposed North Anna Unit 3 remains under review by the Nuclear Regulatory Commission.

Mr. Mark Sartain

- 2 -

If you have any questions or require additional information, please contact me at  
(865) 576-9740.

Sincerely,



Steven M. Johnson  
Regional Response Coordinator  
RAP Region 2





**COMMONWEALTH of VIRGINIA**  
*Department of Emergency Management*

JEFFREY D. STERN, Ph.D.  
State Coordinator

BRETT A. BURDICK  
Deputy Coordinator

SUSAN L. MONGOLD  
Deputy Coordinator

10501 Trade Court  
North Chesterfield, Virginia 23236-3713  
(804) 897-6500  
(TDD) 674-2417  
FAX (804) 897-6506

August 15, 2016

Mark Sartain  
Vice President Engineering  
Dominion Resources, Inc.  
5000 Dominion Boulevard, 2 SE  
Glen Allen, VA 23060

Dear Mr. Sartain:

Reference is made to your letter of July 2016, regarding the need to update our Letter of Agreement in compliance with the federal criteria prescribed by NUREG 0654/FEMA-REP-1.

We have reviewed the North Anna and Surry Power Stations' emergency plans and are assured that they properly interface with the state Radiological Emergency Response Plan (RERP), which is a part of the Commonwealth of Virginia Emergency Operations Plan (COVEOP), as well as with the local RERPs, site-specific to either power station. Upon receiving notification of a radiological accident at a Dominion Generation nuclear power station, state agencies and local governments will implement their Radiological Emergency Response Plans in accordance with state and local government procedures. Specifically, the Virginia Department of Emergency Management (VDEM) agrees to implement all or parts of the following actions in the event of a radiological emergency at either plant site:

1. Operate Virginia Emergency Operations Center (VEOC).
2. Provide VDEM on-scene coordinator(s) to the EOF.
3. Provide warning in coordination with other state and local government agencies and the nuclear facility operator.
4. Provide emergency communications.
5. Coordinate emergency response actions of federal and state agencies.
6. Notify the following federal agencies of a radiological emergency:
  - a. Federal Emergency Management Agency (FEMA) when the emergency action level at the power facility is classed as an Alert. Also provide updated information and request assistance, if required, when the

*"Working to Protect People, Property and Our Communities"*

Mr. Mark Sartain  
Page 2  
August 15, 2016

- emergency action level is classed as a Site Area Emergency or General Emergency.
- b. Federal Aviation Administration air controllers at Richmond International Airport of a radiological emergency and request that aircraft be instructed to avoid affected airspace until notified otherwise.
  - c. 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 power station.
  - d. Fort Eustis in the event of an incident at the Surry Power Station that could affect the health and safety of personnel stationed at his military installation.
7. Notify CSX Transportation of a radiological emergency at the North Anna or Surry Power Station and request that rail service in the affected area be discontinued temporarily.
  8. Notify the Office of Radiological Health, Department of Health immediately of all classes of accidents and incidents reported by operators of nuclear facilities.
  9. Notify the Virginia Department of Transportation to establish roadblocks and to temporarily terminate ferry service between James City County and Surry County, when appropriate.
  10. Notify other state agencies that have emergency task assignments identified in the State RERP.
  11. Notify the state of Maryland EOC of radiological accidents at the North Anna Power Station resulting in either a Site Area Emergency or General Emergency. Notify the state of North Carolina EOC of radiological accidents at the Surry Power Station resulting in either a Site Area Emergency or General Emergency.
  12. Provide public information based on information furnished by the Department of Health and the nuclear facility operator.
  13. Request assistance from the federal government in accordance with the Federal Radiological Emergency Response Plan (FRERP) and the National Response Framework (NRF).
  14. Specifically, the Commonwealth, through the Virginia Emergency Support Team (VEST) led by the Virginia Department of Emergency Management (VDEM), will support Dominion's efforts to obtain necessary resources, as appropriate. For Beyond Design Basis (BDB) events, the VEST will coordinate street or road closures with law enforcement during helicopter flight operations as described in the Congested Area Plans for North Anna Power Station and Surry Power Station.
  15. Specifically, for security or Hostile Action Based events, the Virginia Department of Emergency Management will assist as appropriate with other local, state, and federal agencies. Incident Command system guidelines will be used.

In support of the emergency response actions stated above, we will, on an annual basis, perform the following missions:

1. Assist state agencies and political subdivisions in the development, promotion, and maintenance of plans, procedures, and preparedness programs.
2. Coordinate radiological emergency response training and conduct annual training programs.

*"Working to Protect People, Property and Our Communities"*



Mr. Mark Sartain  
Page 3  
August 15, 2016

3. Maintain a list of media representatives, including names and telephone numbers; as necessary, issue news releases respective to emergency operations involving the North Anna and Surry Power Stations.

We understand that the combined license application Dominion submitted for the proposed North Anna Unit 3 remains under review by the Nuclear Regulatory Commission.

These actions are authorized by the Governor of Virginia (Executive Order Number Nineteen (1990) and are consonant with the Commonwealth of Virginia Emergency Services and Disaster Law of 2000 (Code of Virginia, Chapter 3.2, Title 44) as amended.

Sincerely,



Jeffrey D. Stern, Ph.D.

JDS/bcf



## COMMONWEALTH of VIRGINIA

Department of Health

MARISSA J. LEVINE, MD, MPH, FAAFP  
STATE HEALTH COMMISSIONER

PO BOX 2448  
RICHMOND, VA 23218

TTY 7-1-1 OR  
1-800-828-1120

September 30, 2016

Mr. Mark Sartain  
Vice President Engineering  
Dominion Resources, Inc.  
5000 Dominion Boulevard, 2 SE  
Glen Allen, Virginia 23060

Dear Mr. Sartain:

Thank you for your letter of July 27, 2016 requesting renewal of our biennial Letter of Agreement affirming emergency response support for the North Anna and Surry Power Stations.

By this letter, we are renewing our commitment to respond to any radiological emergency at the North Anna and Surry Power Station. The Virginia Department of Emergency Management (VDEM) is the lead agency for the Commonwealth in providing a coordinated emergency response strategy. VDEM's State Coordinator of Emergency Management coordinates such efforts under the framework of the Commonwealth of Virginia's Radiological Emergency Response Plan (COVRERP). The Virginia Department of Health (VDH) is committed to providing its support to the State Coordinator of Emergency Management in the implementation of the COVRERP.

We understand that the combined license application Dominion submitted to the Nuclear Regulatory Commission for the proposed North Anna Unit 3 remains under review by that agency, and that Dominion has not yet made a final decision on whether or not to build a new nuclear unit at North Anna.

Please contact Mr. Steven A. Harrison, Director - Office of Radiological Health at (804) 864-8151 or by email at [steve.harrison@vdh.virginia.gov](mailto:steve.harrison@vdh.virginia.gov) should you have any questions or require additional information relating to this correspondence.

Sincerely,

A handwritten signature in blue ink, appearing to read "Marissa J. Levine", with the initials "for D." written above it.

Marissa J. Levine, MD, MPH, FAAFP  
State Health Commissioner

Cc: Jeffrey D. Stern, Ph.D  
Steven A. Harrison, MA, MEP





## COMMONWEALTH of VIRGINIA

Colonel W. S. (Steve) Maherty  
Superintendent  
(804) 674-2000

DEPARTMENT OF STATE POLICE

9300 Brook Road, Glen Allen, VA 23060

August 15, 2016

Mr. Mark Sartain  
Vice President Engineering  
Dominion Resources Services, Inc.  
500 Dominion Boulevard, 2 SE  
Glen Allen, Virginia 23060

Ref: Letter of Agreement  
North Anna Power Station

Dear Mr. Sartain:

This is in response to your correspondence dated July 27, 2016, reference updating our Letter of Agreement for North Anna Power Station.

We pledge our continued assistance and hereby agree to provide the following specific support to any emergency that may occur at the North Anna Power Station, upon the direction of the Virginia Department of Emergency Management: To include assistance with Hostile Action Based events as deemed appropriate with other local, state and federal agencies in keeping with federal criteria prescribed by 10 CFR 50 Appendix E, Section IV.A.7:

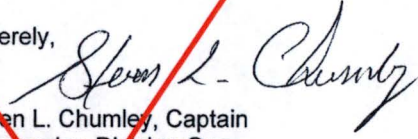
- 1) Assist local officials in disseminating warnings
- 2) Assist in evacuation in coordination with local officials
- 3) Enforce access/egress provision in controlled areas in coordination with local officials
- 4) Provide traffic control
- 5) Assist, to the extent possible, in radiological monitoring of vehicles and personnel at traffic control points
- 6) Assist with communications in a support roll
- 7) Assist with re-entry after emergency

Letter of Agreement  
North Anna Power Station  
Page 2

- 8) Participate in training and exercises to prepare for emergencies
- 9) Specifically, for security or Hostile Action Based events, the Virginia State Police will assist as appropriate with other local, state, and federal agencies. Incident Command System (ICS) guidelines will be used.

We understand that the combined license application Dominion submitted for the proposed North Anna Unit 3 remains under review by the Nuclear Regulatory Commission.

Sincerely,

  
Steven L. Chumley, Captain  
Commander, Division One

SLC/vmh

Cc: Lieutenant Colonel George L. Daniels, Jr.  
First Sergeant Michele R. Ticho





**COMMONWEALTH of VIRGINIA**

Molly J. Ward  
*Secretary of Natural Resources*

*Department of Game and Inland Fisheries*

Bob Duncan  
*Executive Director*

August 26, 2016

Mark Sartain  
Vice President Engineering  
Dominion Resources, Inc.  
5000 Dominion Boulevard, 2 SE  
Glen Allen, VA 23060

Dear Mr. Sartain:

The Department of Game and Inland Fisheries (DGIF) remains in agreement with emergency response plans for the Surry and North Anna Power Stations. As we have previously agreed, this agency will continue to assist you in future emergency situations, as outlined in your plan, to the greatest extent possible at the time any emergency might evolve.

We agree to provide the support listed in Appendix 2, Task Assignments, Virginia Radiological Emergency Response Plan. These services will be provided at the Surry and North Anna Power Stations as directed by the Virginia Department of Emergency Management.

We understand that the combined license application Dominion submitted for the proposed North Anna Unit 3 remains under review by the Nuclear Regulatory Commission.

Sincerely,

A handwritten signature in blue ink that reads "Robert W. Duncan".

Robert W. Duncan  
Executive Director

RWD/GFM/ag

C: Captain Clark Greene, Acting Chief, DGIF Law Enforcement Division



November 7, 2016

Mr. Mark Sartain  
Vice President Engineering  
Dominion Resources, Inc.  
5000 Dominion Boulevard, 2 SE  
Glen Allen, Virginia 23060

Dear Mr. Sartain:

**LETTER OF AGREEMENT  
NORTH ANNA AND SURRY POWER STATIONS**

The Medical College of Virginia Hospitals/Virginia Commonwealth University agree to participate in the implementation of the Radiation Emergency Plan for the North Anna and Surry Power Stations and to support the plan within the limits of our organizational capabilities and to provide decontamination and treatment facilities for chemically exposed individuals.

The Medical College of Virginia Hospitals/Virginia Commonwealth University agree to participate in any planning, training and drilling necessary to ensure preparedness for radiological disasters. We agree that upon verification of an emergency at either station the following services will be provided:

1. Facilities to treat up to four seriously injured and radioactively or chemically contaminated patients in the Emergency Department's Decon Area A.
2. Facilities to treat up to ten non-seriously injured radioactively or chemically contaminated patients in the Emergency Department's Decon Area B.
3. Hospital transportation (stretchers) to move patients from the ED driveway to the emergency department.
4. Campus Police to support traffic control and maintain security around the treatment areas.
5. Central services supplies (oxygen, defibrillators, etc.) to support treatment in the ED driveway.
6. Monitoring and counting equipment for the detection and analysis of radioactivity or radiation.
7. Decontamination and other supplies necessary for the isolation and treatment of radioactively or chemically contaminated patients.

These services will be available 24 hours a day. The radiological response is outlined in greater detail in the Radiation Emergency Plan. The Radiation Safety Section of the Office of the Environmental Health and Safety is responsible for supplying the radiological support services necessary for the implementation of this plan.

**VCU Health System  
Administration**

1250 East Marshall Street  
Suite 2-300  
P.O. Box 980510  
Richmond, Virginia 23298-0510

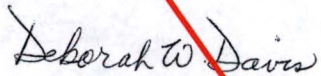
**O** 804.628.7565  
**F** 804.828.1657  
**TDD** 1.800.828.1120

**Deborah W. Davis, FACHE**  
Chief Executive Officer,  
VCU Hospitals and Clinics,  
and Vice President for  
Clinical Services, VCU



We understand that the combined license application Dominion submitted for the proposed North Anna Unit 3 remains under review by the Nuclear Regulatory Commission.

Sincerely,

A handwritten signature in black ink that reads "Deborah W. Davis". The signature is written in a cursive style with a large initial 'D'.

Deborah W. Davis  
Chief Executive Officer,  
VCU Hospitals and Clinics,  
VCU Health System and  
Vice President for Clinical Services VCU



**COUNTY OF LOUISA**  
**Office of the County Administrator**

*Transmitted via USPS*

September 8, 2016

Mr. Mark Sartain  
Vice President Nuclear Engineering  
Dominion Resources, Inc.  
5000 Dominion Boulevard, 2 SE  
Glen Allen, Virginia 23060

RE: Letter of Agreement for the North Anna Power Station

Dear Mr. Sartain:

This letter is in response to your request of July 2016, for an updated version of the Letter of Agreement for the North Anna Power Station.

On April 19, 1976, the Louisa County Board of Supervisors adopted, by resolution, the Louisa County Emergency Plan to coordinate emergency services response capabilities. The County has revised its plan to comply with the regulations contained in NUREG-0654 and again in May 1985, to include the Early Warning Siren System. The County complies with the Federal and State regulations regarding re-adoption of Emergency Operating Plans every four (4) years and most recently re-adopted the plan on March 17, 2014.

This letter confirms Louisa County's agreement to provide the following services:

1. Operate the County Emergency Operations Center (EOC);
2. Coordinate the overall emergency response of the County;
3. Serve as the County point-of-contact with State and Federal agencies, and any appointed representative of Dominion Generation;
4. Provide early warning and public information;
5. Coordinate radiological emergency response and training;
6. Coordinate with State and Dominion Generation staff regarding community outreach programs for Radiological Emergency Preparedness;
7. Upon request and availability, coordinate use of the Louisa County Fire/EMS Training Center for North Anna training or as an assembly location in an emergency; and
8. Upon request and availability, obtain available resources to be sent to North Anna, such as bulldozers to move the in-place Vehicle Barrier for access in an emergency event.



We understand that the combined license application Dominion submitted for the proposed North Anna Unit 3 remains under review by the Nuclear Regulatory Commission.

If you have any questions or require additional information, please do not hesitate to contact me.

Sincerely,



Christian Goodwin  
County Administrator

CRG/lec



LOUISA COUNTY SHERIFF'S OFFICE

ASHLAND D. FORTUNE - SHERIFF  
P.O. Box 504 • LOUISA, VIRGINIA 23093



August 12, 2016

Mark Sartain  
Vice President Engineering  
Dominion Resource, Inc  
5000 Dominion Boulevard, 2 SE  
Glen Allen, Virginia 23060

Dear Mr. Sartain,

This is to confirm our continuing agreement with the plan and our willingness to provide the following services:

- ❖ Telephone and Radio communications with the station on a twenty-four (24) hour basis
- ❖ Traffic control
- ❖ Evacuation control
- ❖ Assistance in radiological monitoring
- ❖ Potential availability of thirty-four (34) sheriff's vehicles
- ❖ Potential availability of thirty four (34) sheriff's deputies

Specifically, for security or Hostile Action Based events, the Louisa County Sheriff's Office will assist as appropriate with other local, state, and federal agencies. Incident Command System (ICS) guidelines will be used.

We understand that the combined license application Dominion submitted for the proposed North Anna Unit 3 remains under review by the Nuclear Regulatory Commission.

If I can be of any further assistance to you on this matter, please do not hesitate to contact me.

Sincerely,

Ashland D. Fortune, Sheriff  
Louisa County





## County of Louisa

*Department Of Fire and EMS*

September 15, 2016

Mark Sartain  
Vice President Engineering  
Dominion Resources, Inc.  
5000 Dominion Rd.  
Glen Allen, Va. 23060

Date: 15 Sept. 2016

RE: Letter of Agreement

Dear Mr. Sartain,

The Louisa County Department of Fire and EMS fully supports the North Anna Power Station Emergency Plan. The Department welcomes the opportunity to work with a community oriented organization such as Dominion Power.

In the event that emergency services are ever needed, please call the Louisa County Emergency Communication Center using the 911 number. We will support your efforts to the extent of our capabilities and resources. Presently we have eleven (11) Fire/EMS stations within the County, staffed with career and/or volunteer personnel, all of which can respond to your facility if needed. Mineral Station 2 would be the first due, followed by Station 3 in the Bumpass/Lake Anna area, Station 1 in Louisa, Station 5 in Locust Creek, Station 6 in Trevilians, Station 4 in Holly Grove and Station 7 in Zion Cross roads.

Within the Department we have approximately 150 firefighters, EMT's and Medics as well as the following apparatus:

- 14 Engines with 750-1000 gallon water tanks and 1000-1500 gpm pumps.
- 7 Tankers with 2000-7000 gallon water tanks and 500-1000 gpm pumps.
- 2 squad trucks with air, light and foam capabilities.
- 7 brush trucks with 2200-500 gallon water tanks and pumps.
- 3 aerial apparatus ranging up to 110 feet in height.
- 1000 ft of 4 inch supply line on each engine.
- Foam capacity on the majority of all first in engines.
- Assortments of ground and roof ladders on apparatus.
- 4 breathing air compressors located throughout the County.
- Self-Contained Breathing Apparatus on each of the first in units.
- Permanent and portable communication equipment on all apparatus
- Extrication equipment on all engines and squads

*Providing competent and professional Fire, EMS & Emergency Management services to our community.*



## County of Louisa

*Department Of Fire and EMS*

- 16 ambulances BLS/ALS
- 11 command vehicles
- 3 boats with surface rescue capabilities

All the apparatus listed above would be available to respond to your facility in an emergency on an as needed basis. The Department has trained monitoring teams with access to the dosimetry for monitoring radiation in both training and actual emergencies. A command structure is in place within all stations to operate under the direction of the Fire-EMS Chief Keith Greene, at the Louisa County Emergency Operations Center. The Department participates in the emergency drills and exercises conducted by your organization to furnish personnel and apparatus for monitoring teams, decontamination areas, evacuation, etc. Specifically, for security or Hostile Action Based events, the Louisa County Department of Fire and EMS will assist as appropriate with other local, state and federal agencies. Nationally recognized Incident Command System (ICS) will be used.

The first in station has an average response time of 4-7 minutes from the time of call to having the first apparatus on scene. The response time for the farthest station from your facility is 30-40 minutes.

The combination career and volunteer Fire/EMS Department was established by the County of Louisa on December 6, 2010 to provide fire prevention and EMS services to the citizens and businesses of Louisa County. This action combined the Louisa County Volunteer Fire Association, the volunteer Emergency Medical Association and the Emergency Services Department into one combine organization. The Department considers your organization a corporate citizen of the County and supports it as we would all other County citizens.

We understand that the combined license application Dominion submitted remains under review by the Nuclear Regulatory Commission (NRC) for the proposed North Anna Unit 3.

We welcome the opportunity to continue working with and strengthening the NAPS and LCDFEMS relationship for many years to come.

Sincerely,

Keith Greene  
Fire-EMS Chief  
Louisa County Dept. of Fire-EMS

*Providing competent and professional Fire, EMS & Emergency Management services to our community.*



# SPOTSYLVANIA COUNTY SHERIFF'S OFFICE



Office of the Sheriff  
Sheriff Roger L. Harris  
Post Office Box 124  
Spotsylvania, Virginia 22553  
Phone: 540-582-7115 • Fax: 540-582-9448

September 13, 2016

Mr. Mark Sartain  
Vice President of Engineering  
Dominion Resources, Inc.  
5000 Dominion Blvd. 2 SE  
Glen Allen, VA 23060

Dear Mr. Sartain

In reference to your letter dated July 27, 2016, the Spotsylvania County Sheriff's Office agrees to participate, if and when required, and to offer the following services:

1. Telephone and radio communications with the station on a 24 hour basis
2. Traffic Control
3. Evaluation Control
4. Potential availability of 144 Sheriff's Office Vehicles
5. Assist in radiological monitoring
6. Potential availability of 144 Sheriff's Office personnel

We understand that the combined license application Dominion submitted for the proposed North Anna Unit remains under review by the Nuclear Regulatory Commission.

  
Signature

9/13/16  
Date

SHERIFF

Title

Member of  
Virginia Sheriffs  
Association



An Accredited Law Enforcement Agency

Member of  
National Sheriff's  
Association

## County of Spotsylvania

*Board of Supervisors*

GREG CEBULA  
GREG BENTON  
TIMOTHY J. McLAUGHLIN  
DAVID ROSS  
GARRETT SKINNER  
PAUL E. TRAMPE  
CHRIS YANABOUSKI

*County Administrator*  
MARK B. TAYLOR



*Service, Integrity, Pride*

*Department of Fire, Rescue, and  
Emergency Management (FREM)*

H. MONTY WILLAFORD, Chief

P.O. BOX 818  
Spotsylvania, VA 22553

Phone: (540) 507-7900  
Fax: (540) 502-6957

August 12, 2016

Mark Sartain  
Vice President Engineering  
Dominion Resources, Inc.  
5000 Dominion Boulevard, 2 SE  
Glen Allen, Virginia 23060

**Letter of Agreement  
North Anna Power Station**

Dear Mr. Sartain:

Within the control limits of Spotsylvania County and in cooperation with local, state, and federal agencies, we will provide the following:

1. Operation of Spotsylvania County's Emergency Operations Center (EOC) located in the Public Safety Building, 9119 Dean Ridings Lane, Spotsylvania, Virginia, 22553.
2. Coordination of the overall County emergency response.
3. A point of contact for local, state, and federal agencies.
4. Coordination of emergency response training, including radiological.

We understand that the combined license application Dominion submitted for the proposed North Anna Unit 3 remains under review by the Nuclear Regulatory Commission.

Please contact me at (540) 507-7904 if any additional information is needed.

Sincerely,

A handwritten signature in blue ink, appearing to read "Matthew Embrey", is written over a red diagonal line that crosses the entire page.

Matthew Embrey  
Division Chief/Emergency Management Coordinator  
Spotsylvania County  
Department of Fire, Rescue, and Emergency Management

C: File



Sheriff Mark A. Amos  
(540) 672-1200  
Fax (540) 672-9435



P.O. Box 445  
Orange, Virginia 22960  
email:mamos@orangecountyva.gov

ORANGE COUNTY SHERIFF'S OFFICE

August 11, 2016

Mark Sartain  
Vice President Engineering  
Dominion Resources, Inc.  
5000 Dominion Boulevard, 2 SE  
Glen Allen, Virginia 23060

Dear Mr. Sartain,

This is to update our existing emergency plan letter of agreement. We are capable of providing the following services:

1. Receive and verify the notification of the radiological emergency.
2. Notify key county officials and other agencies assigned a radiological emergency responsibility.
3. Alert the public.
4. Evacuate the public from the area affected.
5. Traffic control.
6. Perimeter control, in coordination with Virginia State Police.
7. Operate the Sheriff's Office Communications Center.

We understand that the combined license application Dominion submitted for the proposed North Anna Unit 3 remains under review by the Nuclear Regulatory Commission.

Sincerely,

A handwritten signature in black ink, appearing to read "Mark A. Amos", written over a red diagonal line.

Sheriff Mark A. Amos

ORANGE COUNTY, VIRGINIA  
BOARD OF SUPERVISORS

R. MARK JOHNSON, DISTRICT ONE  
JAMES K. WHITE, DISTRICT TWO  
S. TEEL GOODWIN, DISTRICT THREE  
JAMES P. CROZIER, DISTRICT FOUR  
LEE H. FRAME, DISTRICT FIVE

R. BRYAN DAVID  
COUNTY ADMINISTRATOR

PHONE: (540) 672-3313  
FAX: (540) 672-1679



MAILING ADDRESS:  
P. O. Box 111  
ORANGE, VA 22960

PHYSICAL ADDRESS:  
R. LINDSAY GORDON III BUILDING  
117 WEST MAIN STREET  
ORANGE, VIRGINIA 22960

August 25, 2016

Mr. Mark Sartain  
Vice President Engineering  
Dominion Resources, Inc.  
5000 Dominion Boulevard, 2 SE  
Glen Allen, Virginia 23060

Dear Mr. Sartain:

I have received your letter requesting an update of our Letter of Agreement for North Anna Power Station.

Please be advised that we are in agreement with the Plan and are willing to participate in the Emergency Plan, if required. We are capable of providing the following services, as outlined in the current Orange County Radiological Response Plan:

1. Operate the Orange County Emergency Operations Center;
2. Coordinate the overall emergency response of the County;
3. Serve as the County point-of-contact with appropriate State and Federal agencies;
4. Provide the public information for Orange County; and
5. Coordinate radiological emergency response training.

We understand that the combined license application Dominion submitted for the proposed North Anna Unit 3 remains under review by the Nuclear Regulatory Commission.

Please feel free to contact me if I can be of further assistance.

Sincerely,

R. Bryan David  
County Administrator

cc: Thomas Lacheney, County Attorney  
John Harkness, Fire and EMS Chief  
Nicola Tidey, E-911 Center Director





*County of Caroline*  
*Department of Fire-Rescue & Emergency Management*

August 11, 2016

Mark Sartain  
Vice President Engineering  
Dominion Resources, Inc.  
5000 Dominion Boulevard, 2 SE  
Glen Allen, VA 23060

Dear Mr. Sartain:

We have received your letter and wish to update our previous letter of agreement concerning response to an emergency at the North Anna Power Station.

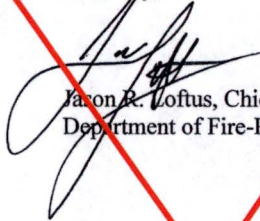
This letter is to inform you that Caroline County has an obligation to participate in the North Anna Power Station Emergency Plan if conditions exist that require a response from surrounding jurisdictions. Caroline County will attempt to provide the following services:

1. Verify the notification from the power plant.
2. Initiate the warning notification.
3. Perform access/egress traffic control in coordination with local law enforcement and the Department of State Police.
4. Arrange and perform those functions necessary for the protection of individuals, properties, homes, business, etc. located in the endangered area(s) in cooperation with local law-enforcement, the Department of State Police and other security forces. Will attempt to restrict entry into the hot zone by personnel not properly protected by radiation monitoring devices. Will also attempt to formulate a site plan to monitor workers/individuals entering the hot zone.
5. Attempt to maintain trained radiological personnel to be used primarily for low-level radiological incidents involving transportation accidents or fixed site emergencies. These individuals will also assist in the decontamination of response personnel and equipment when needed.
6. Provide on scene fire and rescue response to transportation accidents involving radioactive materials and initiate proper notification and site area warnings when necessary.

We understand that the combined license application Dominion submitted for the proposed North Anna Unit 3 remains under review by the Nuclear Regulatory Commission.

This document represents Caroline County's continued support of the radiological protection package developed cooperatively between Dominion Resources Services, Virginia Department of Emergency Management and local governments.

Sincerely,



Jason R. Loftus, Chief  
Department of Fire-Rescue and Emergency Management

JRL/mk





*Office of the Sheriff*  
*Sheriff A. A. "Tony" Lippa Jr.*  
**CAROLINE COUNTY SHERIFF'S OFFICE**  
P.O. Box 39 118 Courthouse Lane Bowling Green, VA 22427  
Phone (804) 633-1120 Fax (804) 633-1124  
www.carolinesheriff.org



August 11, 2016

Mark Sartain  
Vice President Engineering  
Dominion Resources, Inc.  
5000 Dominion Boulevard, 2 SE  
Glen Allen, VA 23060

**SUBJECT: LETTER OF AGREEMENT  
NORTH ANNA POWER STATION**

Dear Mr. Sartain:

This is to acknowledge your letter date July 27, 2016 requesting a revision of our agreement with your emergency plan as well as our intention to participate in North Anna Emergency Plan, if requested. Services provided by this office will be as follows:

1. Assist in warning public in Caroline County.
2. Assist in evacuating the public from effected areas.
3. Traffic control wherever feasible under existing manpower conditions.
4. Access/egress control, in coordination with the State Police
5. Receive and send message as necessary over the VCIN system.
6. Provide law enforcement assistance to the citizens of Caroline County.

We understand that the combined license application Dominion submitted to the proposed North Anna Unit 3 remains under review by the Nuclear Regulatory Commission

Sincerely,

A. A. "Tony" Lippa, Jr.  
Sheriff

AAL/tmw

**BOARD OF SUPERVISORS**

AUBREY M. STANLEY, CHAIRMAN  
BEAVERDAM DISTRICT

ANGELA KELLY-WIECEK, VICE-CHAIRMAN  
CHICKAHOMNY DISTRICT

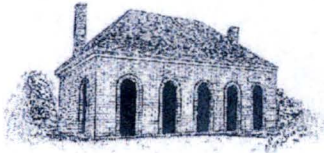
SEAN M. DAVIS  
HENRY DISTRICT

WAYNE T. HAZZARD  
SOUTH ANNA DISTRICT

W. CANOVA PETERSON  
MECHANICSVILLE DISTRICT

FAYE O. PRICHARD  
ASHLAND DISTRICT

SCOTT A. WYATT  
COLD HARBOR DISTRICT



HANOVER COURTHOUSE

**HANOVER COUNTY**

ESTABLISHED IN 1720

CECIL R. HARRIS, JR.  
COUNTY ADMINISTRATOR  
FRANK W. HARKSEN, JR.  
DEPUTY COUNTY ADMINISTRATOR  
JAMES P. TAYLOR  
DEPUTY COUNTY ADMINISTRATOR

WWW.HANOVERCOUNTY.GOV  
P.O. BOX 470, HANOVER, VA 23069  
7516 COUNTY COMPLEX ROAD, HANOVER, VA 23069  
PHONE: 804-365-6005  
FAX: 804-365-6234

August 12, 2016

Mark Sartain  
Vice President Engineering  
Dominion Resources, Inc.  
5000 Dominion Boulevard, 2 SE  
Glen Allen, VA 23060

Dear Mr. Sartain,

With regard to updating our Letter of Agreement, in reference to your emergency plan, Hanover will:

1. Continue coordination of the overall emergency response of the County as prescribed in the Hanover County Radiological Emergency Response Plan.
2. Provide the services and operation of the County Emergency Operations Center, the Evacuation Assembly Center, and the West Hanover Staging Area (Beaverdam Fire Station).
3. Serve as the County point-of-contact with State and Federal agencies.
4. Provide Public Information Services.
5. Coordinate Radiological Emergency Response Training.
6. Coordinate the use of Liberty Middle School as Evacuation Assembly Centers for Hanover County and Louisa County, if required.

We understand that the combined license application Dominion submitted for the proposed North Anna Unit 3 remains under review by the Nuclear Regulatory Commission.

If you need further assistance, please contact me.

Sincerely,

Cecil R. Harris, Jr.  
County Administrator

CRHjr/sem

cc: Mr. James P. Taylor, Deputy County Administrator  
Mr. Jethro Piland, Fire/EMS Chief

*Hanover: People, Tradition and Spirit*



MEMBER OF  
NATIONAL SHERIFF'S ASSN.



OFFICE OF SHERIFF  
COLONEL DAVID R. HINES  
P.O. BOX 40  
HANOVER, VIRGINIA 23069  
804-365-6110 804-730-6110

MEMBER OF  
VIRGINIA STATE SHERIFF'S ASSN.



August 22, 2016

Mr. Mark Sartain  
Vice President Engineering  
Dominion Resources, Inc.  
5000 Dominion Boulevard, 2 SE  
Glen Allen, VA 23060

**LETTER OF AGREEMENT  
NORTH ANNA POWER STATION**

Dear Mr. Sartain:

I am in receipt of your letter of July 27, 2016, concerning our Letter of Agreement with Dominion Resource Services regarding the North Anna Power Station. Listed below are specified arrangements for the exchange of information by agencies that respond to emergencies at this site.

We understand the necessity of reviewing this agreement every other year and submitting, under the terms of the Hanover County Emergency Operations Plan, the responsibilities of the Hanover County Sheriff's Office in the event of an emergency. The responsibilities are as follows:

1. Warning the public
2. Assistance in the evacuation of the public from the affected area
3. Traffic control under existing manpower conditions, when feasible
4. Ingress/egress control in coordination with the Virginia State Police

We understand that the combined license application Dominion submitted for the proposed North Anna Unit 3 remains under review by the Nuclear Regulatory Commission.

Sincerely,

Colonel David R. Hines  
Sheriff

DRH/lph/nbs

*A State and Nationally Accredited Law Enforcement Agency*

**APPENDIX**

**10.2**

**(DELETED)**

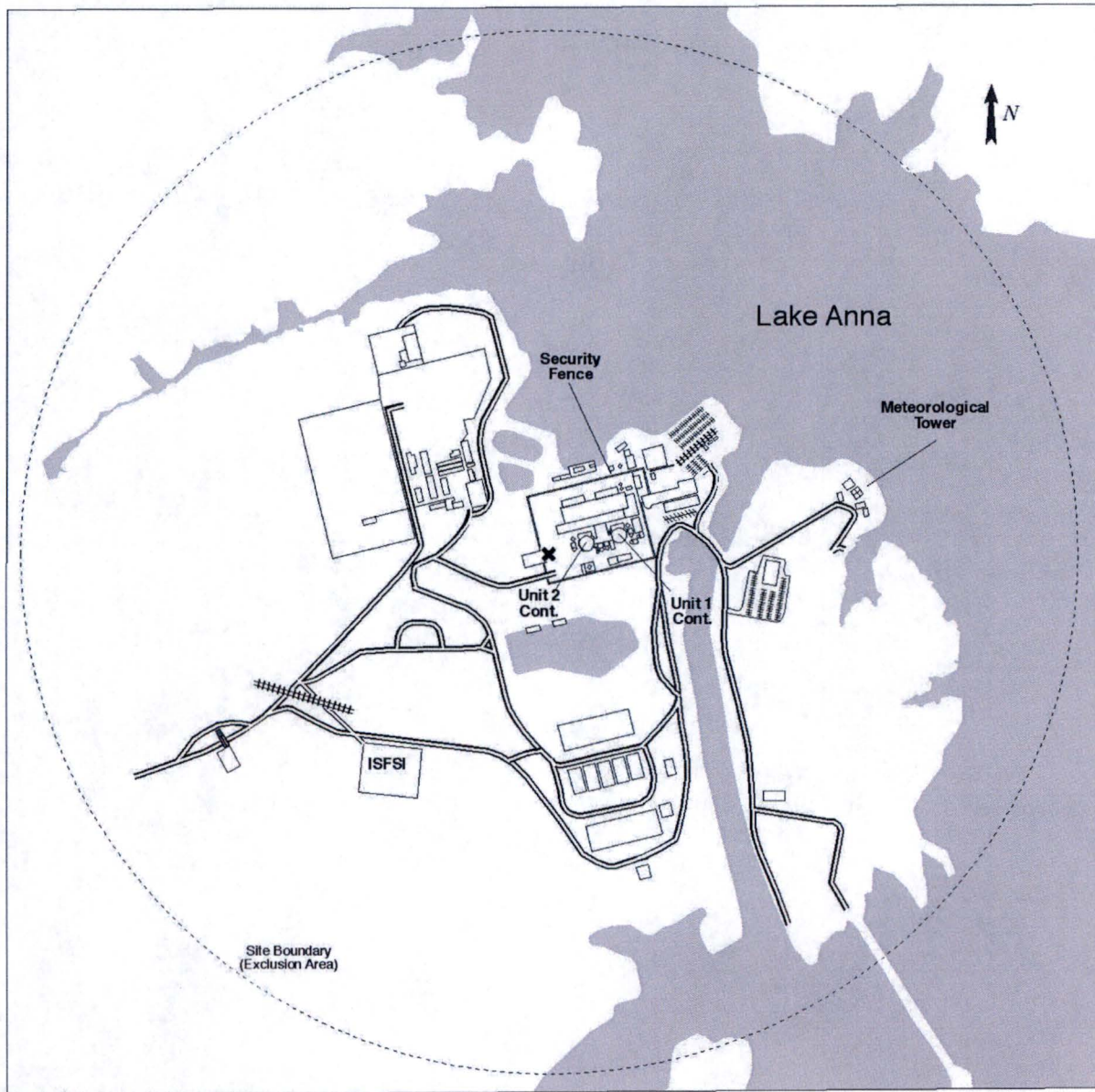


**APPENDIX**

**10.3**

**MAPS OF EXCLUSION AREA, LOW POPULATION AND  
EMERGENCY PLANNING ZONE BOUNDARIES**

NORTH ANNA POWER STATION  
EXCLUSION AREA



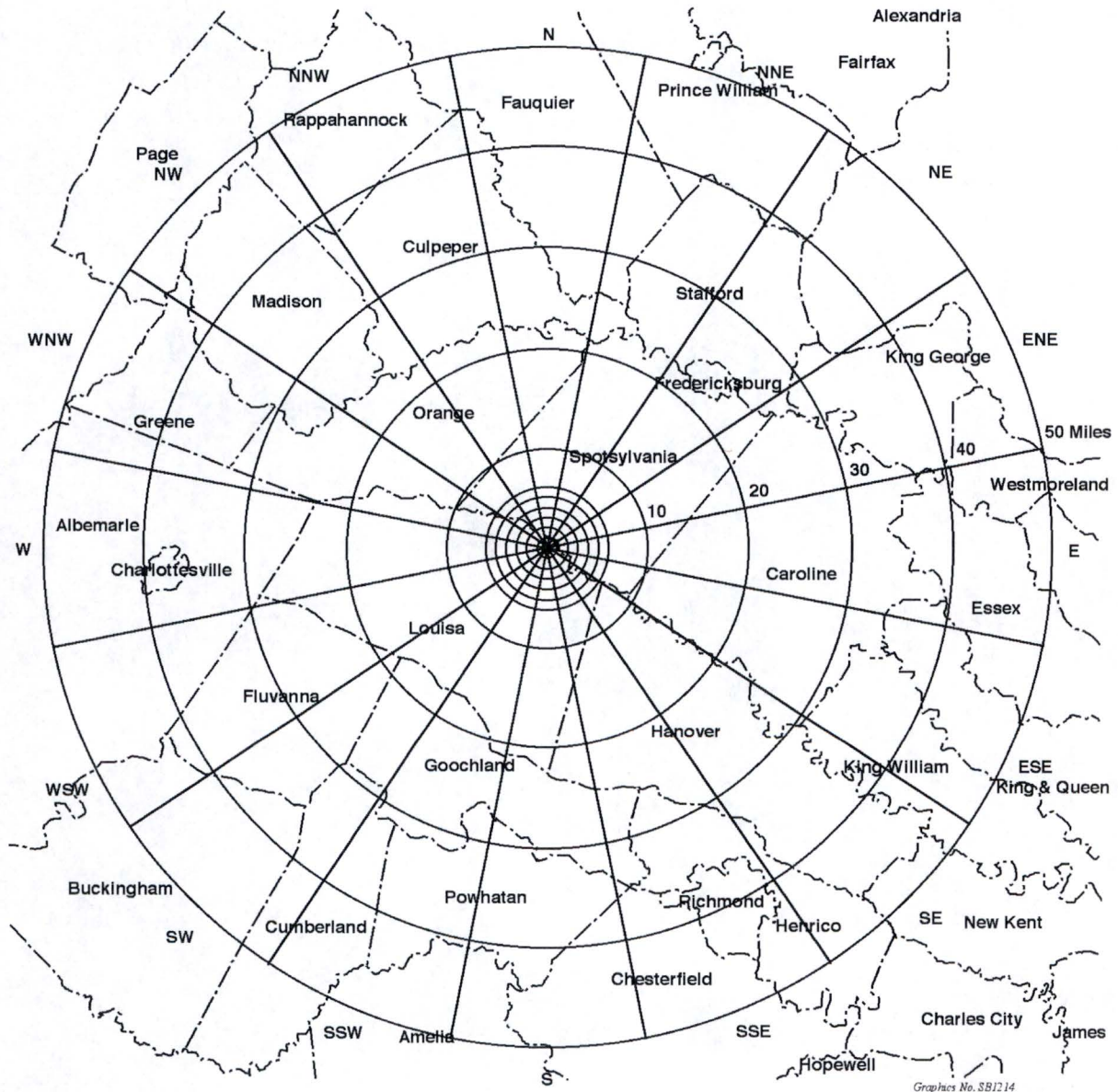
Graphics No: SV644J



NORTH ANNA POWER STATION  
LOW POPULATION ZONE  
10 MILE EMERGENCY PLANNING ZONE



NORTH ANNA POWER STATION  
50 MILE RADIUS



Graphics No. SB1214



**APPENDIX**

**10.4**

**LISTING OF EIPs**

**LIST OF EMERGENCY PLAN IMPLEMENTING PROCEDURES**

- 1     Emergency Control Procedures
  - 1.01   Emergency Manager Controlling Procedure
  - 1.02   Response to Notification of Unusual Event
  - 1.03   Response to Alert
  - 1.04   Response to Site Area Emergency
  - 1.05   Response to General Emergency
  - 1.06   Protective Action Recommendations
  
2.     Notification Procedures
  - 2.01   Notification of State and Local Governments
  - 2.02   Notification of NRC
  
3.     Augmentation Procedures
  - 3.02   Activation of Technical Support Center
  - 3.03   Activation of Operational Support Center
  - 3.05   Augmentation of Emergency Response Organization
  - 3.06   Augmentation of Corporate Emergency Response Center
  
4.     Radiological Monitoring and Dose Assessment Procedures
  - 4.01   Radiological Assessment Director Controlling Procedure
  - 4.02   Radiation Protection Supervisor Controlling Procedure
  - 4.03   Dose Assessment Controlling Procedure
  - 4.04   Emergency Personnel Radiation Exposure
  - 4.05   Respiratory Protection and KI Assessment
  - 4.06   Personnel Monitoring and Decontamination
  - 4.07   Protective Measures
  - 4.09   Source Term Assessment
  - 4.14   Inplant Monitoring
  - 4.15   Onsite Monitoring
  - 4.16   Offsite Monitoring
  - 4.17   Monitoring of Emergency Response Facilities
  - 4.18   Monitoring of LEOF
  - 4.21   Evacuation and Remote Assembly Area Monitoring
  - 4.24   Gaseous Effluent Sampling During an Emergency
  - 4.26   High Level Activity Sample Analysis
  - 4.28   TSC/LEOF Radiation Monitoring System
  - 4.33   Health Physics Network Communications
  - 4.34   Field Team Radio Operator Instructions
  - 4.35   Chemistry Sampling



List of Emergency Plan Implementing Procedures (Cont.)

5. Protective Action Procedures

- 5.01 Transportation of Contaminated Injured Personnel
- 5.03 Personnel Accountability
- 5.04 Access Control
- 5.05 Site Evacuation or Company Dismissal
- 5.07 Administration of Radioprotective Drugs
- 5.08 Damage Control Guideline
- 5.09 Security Team Leader Controlling Procedure

6. Recovery and Restoration Procedures

- 6.01 Re-entry/Recovery Guideline

# NAEP-EPIP CROSS REFERENCE\*

<u>NAEP SECTION NUMBER</u>	<u>IMPLEMENTED BY</u>	<u>EPIP NUMBER</u>
4.1	-	1.01-1.05
4.2	-	1.04-1.05
4.4	-	1.04-1.05
5.0	-	1.01, 3.05
5.2	-	1.01, 3.02, 3.03, <u>3.06</u> , 5.08, 5.09
5.3	-	2.01, 2.02, 5.09
5.4	-	2.01
6.1	-	1.01, 2.01, 2.02, 3.05, 4.34
6.2	-	1.01, 4.01-4.03, 4.09, 4.14-4.18, 4.24, 4.26, 4.28, 4.33-4.35
6.3	-	1.01,-1.05, 4.05, 4.07, 4.21, 5.01, 5.03-5.05, 5.07
6.4	-	4.04, 4.06, 5.01
6.5	-	1.02-1.05, 5.09
9.0	-	6.01
9.2	-	4.03, 4.09, 4.14, 4.16

\* Because the Emergency Plan provides a broad overview of the guidelines that must be considered in mitigating an emergency situation, a number of sections of the Plan do not appear in the cross reference, as they are not specifically activated by an EPIP.



**APPENDIX**

**10.5**

**PROTECTIVE EQUIPMENT AND SUPPLIES**

NOTE: Description of kit contents to be updated to reflect current inventories. This change is beyond the scope of this license amendment request.

NAEP  
Page 10.5.2  
Revision # TBD

### Emergency Kits for Offsite Monitoring Teams

NOTE: Each kit shall contain at least the following items:

<u>Quantity</u>	<u>Description</u>
1	Hand Trowel
1	Forceps
6	Silver Zeolite Filter
1	Map of Orange
1	Map of TLD Location
1	Preselect Monitor Location Map
1	Map of Site Exclusion Boundary
2	Pads of paper
2	Full-face Respirators, e.g., Ultravue or equivalent
2	Pair Rubber Boots
10	Envelopes
2	Pencils
2	Smears
1	Flashlight
1	Map of Louisa
1	Map of Spotsylvania
1	Map of Lake Anna
1	Dosimeter Charger
1	Package or Box of wipes, e.g., Kimwipes
1	Qt. Plastic Container
3	Gallon Plastic Container
1	Package of Cotton Inserts
1	Bag (15 pair) of Rubber Gloves
2	Hoods
2	Sets of P.C.s
1	Bag assorted Bags
6	"D" Cell Batteries
1	Pk. Air Particulate Patches
2	Digital Alarming Dosimeters (DADs) *
4	Caution Envelopes with Bag of assorted signs and barrier rope.

\* 2 (each) 100R Dosimeters and 1 R Dosimeters may be in the kit in lieu of 2 DADs.



NOTE: Description of kit contents to be updated to reflect current inventories. This change is beyond the scope of this license amendment request.

NAEP  
Page 10.5.3  
Revision # TBD

#### **Emergency Kits**

**TSC, OSC, and ALT OSC, and LEOF**

NOTE: Each kit shall contain at least the following items:

<u>Quantity</u>	<u>Description</u>
2	Full-face Respirators, e.g., Ultravue or equivalent
2	Pair Rubber Boots
2	Boxes Smears
1	Dosimeter Charger (Not required if DADs used)
1	Package Cotton Inserts
5	Pairs of Rubber Gloves
2	Hoods
2	Sets of PCs
1	E520 with 177 (or equal)
1	RM-14 with 210 (or equal)
2	Flashlights
2 Sets	Replacement Batteries for flashlight

#### **Emergency Kit EVACUATION**

NOTE: The kit shall contain at least the following items:

<u>Quantity</u>	<u>Description</u>
2	Cans of waterless soap
8	Paper coverall suits
25 Feet	Radiation barrier rope
6	Radiation placards
Various	Radiation inserts for placards
10	Radioactive material stickers
10	Radioactive material tags
1	Package of smears
2	Pads of paper
3	Pencils
1	Box of surgical gloves
5	Trash bags
2	Boxes of cotton swabs
2	Black marking pens
1	Red marking pen
3	Miscellaneous size plastic bags
30	Pairs of shoe covers (disposable or launderable)
4	Packages of diapers
1	Box of heavy-duty cleanser
1	Roll of tape

**APPENDIX**

**10.6**

**(DELETED)**



**APPENDIX**

**10.7**

**SUPPORTING PLAN CONTACT**

## SUPPORTING PLAN CONTACT

<u>ORGANIZATION</u>	<u>CONTACT</u>
<del>Dominion - Corporate Emergency Response Plan</del>	<del>Dominion Nuclear Emergency Preparedness Department</del>
State Plan (Commonwealth of Virginia Emergency Operations Plan - Hazard- Specific Annex #1 - Radiological Emergency Response)	Virginia Department of Emergency Management, Emergency Operations Center
Louisa County Plan	Sheriff's Dispatcher
Spotsylvania County Plan	Sheriff's Dispatcher
Orange County Plan	Sheriff's Dispatcher
Caroline County Plan	Sheriff's Dispatcher
Hanover County Plan	Sheriff's Dispatcher
Medical College of Virginia Plan	Hospital Superintendent
Department of Energy - FRMAP	Oak Ridge Operations



**APPENDIX**

**10.8**

**ESTIMATION OF EVACUATION TIMES**

**(Maintained on file by Nuclear  
Emergency Preparedness Department.  
Available on request.)**

**APPENDIX**

**10.9**

**RADIATION EMERGENCY PLAN**

**MCVH/VCU - DOMINION POWER**

**(Maintained on file by Nuclear  
Emergency Preparedness Department.**

**Available on request.)**



**APPENDIX**

**10.10**

**FEDERAL RADIOLOGICAL MONITORING AND ASSESSMENT CENTER (FRMAC)**

**OPERATIONS PLAN**

**(Maintained on file by Nuclear**

**Emergency Preparedness Department.**

**Available on request.)**

## **APPENDIX**

### **10.11**

#### **INITIATING CONDITIONS**

#### **EMERGENCY ACTION LEVELS**

This information is presented in the Emergency Action Level Matrix and Emergency Action Level Technical Bases Document. These documents are subject to the same review and approval process as the North Anna Emergency Plan and incorporated by reference.