ATTACHMENT 1

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

VIRGINIA ELECTRIC AND POWER COMPANY
(DOMINION ENERGY VIRGINIA)
NORTH ANNA POWER STATION UNITS 1 AND 2
SURRY POWER STATION UNITS 1 AND 2

Response to Request for Additional Information

Proposed Consolidate Emergency Operations Facility License Amendment Request

By letter dated January 16, 2018, Virginia Electric and Power Company (Dominion Energy Virginia), submitted a license amendment request (LAR) (Agencywide Documents Access Management System (ADAMS) Accession No. ML18025B468) to consolidate the NAPS and SPS local emergency operations facilities (EOF), the common back-up central EOF, and the headquarters support organization. The NRC staff determined that the information provided in the LAR is not of sufficient detail to enable the NRC staff to proceed with its detailed technical review regarding the acceptability of the proposed LAR.

In an email dated May 1, 2018, the NRC transmitted a request for additional information (RAI) related to the LAR. The RAI contained the following five questions (numbered RAI-1 through RAI-5) related to the content in Attachment 3 of the LAR:

NRC RAI-1

Attachment 1, "Discussion of Proposed Changes," (page 7 of 30) states, in part:

> If the proposed CERC [Corporate Emergency Response Center] becomes unavailable during an event, the NAPS and SPS TSCs [Technical Support Centers] will have the capability to determine PARs [protective action recommendations] for the public, notify offsite agencies, and perform dose assessments.

However, Attachment 1 (page 8 of 30) also states, in part:

> Upon implementation of the proposed consolidation, the CERC staff will coordinate site field team activities and be the lead facility for dose assessments.

Please clarify whether the respective TSC at each site will also have the capability to coordinate field team activities, in addition to the capabilities listed on pg. 7 of 30 in Attachment 1, if the proposed CERC becomes unavailable.

DOMINION RESPONSE

If the proposed CERC becomes unavailable during an event, the respective TSC at each site will have the capability to determine PARs for the public, notify offsite agencies, and perform dose assessments, including coordination of field team activities supporting the performance of dose assessments.

NRC RAI-2

Section IV.E.8.b to Appendix E of 10 CFR Part 50 discusses provisions that must be made for locating NRC and offsite responders closer to the nuclear reactor site if an emergency response facility is located more than 25 miles from the site(s) that it serves. In addition, Section IV.E.8.b(4) to Appendix E of 10 CFR Part 50 specifically states, in part, that such a facility shall provide, "Access to plant ***data and*** radiological information; and..." [***bold/italics*** added].

Attachment 1, "Discussion of Proposed Changes," (Page 10 of 50) states, in part:

> ...access to plant data and radiological information are also provided....

However, in Section 7.1.7, "Near-Site Location For Offsite Agency Coordination," of both Attachment 5, "Proposed Changed NAPS Emergency Plan Pages," and Attachment 7 "Proposed Changed SPS Emergency Plan Pages," it merely states, in part:

> ...access to plant radiological information.

Please explain the discrepancy between the proposed emergency plans with the description in Attachment 1 regarding the ability of the NAPS and SPS near-site facilities to provide access to both radiological information and plant data.

DOMINION RESPONSE

The ability of the NAPS and SPS near-site facilities to provide access to both radiological information and plant data is correct as described in Attachment 1. The words 'data and' were inadvertently omitted in the drafting of Sections 7.1.7, "Near-Site Location for Offsite Agency Coordination," in Attachments 4, 5, 6 and 7, the marked-up and proposed emergency plan changes for NAPS and SPS, respectively.

For completeness, the updated marked-up and proposed emergency plan changes for NAPS and SPS included in Attachments 2, 3, 4 and 5, respectively, includes the words 'data and' in Section 7.1.7.

NRC RAI-3

Attachment 3, "Additional NAPS and SPS Emergency Plan Changes Requiring NRC Approval," (page 2 of 19) states, in part:

> 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.

Attachment 3 (page 4 of 19) further states, in part:

> 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)....

It is not clear to the staff why this proposed wording to specify a start time for augmentation is part of the license amendment request. Listed below are several excerpts from NRC documents that clearly specify that the start time for augmentation, as approved previously by the NRC, is at an Alert or higher classification:

- The NRC Office of Inspection and Enforcement (IE) Report, "IE Emergency Preparedness Appraisal Reports 50-338/82-05 & 50-339/82-05 on 820216-26," dated July 1, 1982 (ADAMS Legacy No. 8208030486) states, in part:

  > ...assumes the responsibility for dose assessment in the EOF, as shown in Table 5.1 of the Emergency Plan as augmenting the Station staff within 60 minutes of the declaration of an emergency.

- NRC Letter, "Surry and North Anna Proposed Emergency Plan Changes," dated May 18, 1990 (ADAMS Legacy No. 9006070295) states, in part:

  > The proposed revisions would allow the Core/Thermal Hydraulic Engineer position to be augmented in 60 minutes following an emergency declaration....

- NRC Letter, "Review if Proposed Cost Beneficial Licensing Action Request for Emergency Plan Changes for North Anna Power Station (TAC Nos. M93602 and M93603)," dated December 12, 1995 (ADAMS Legacy No. 9512150146) states, in part:

  > With this proposed revision, the licensee also specified a facility activation goal of 60 minutes for the local emergency operations facility (EOF), technical support center (TSC), and operational support center (OSC) at an Alert or higher classification.

- NRC Letter, "Surry Power Station, Units 1 and 2 Emergency Plan Revisions (TAC Nos. M93553 and M93554)," dated December 13, 1995 (ADAMS Legacy No. 9512160044) states, in part:

> With this proposed revision, Virginia Power also specified a facility activation goal of 90 minutes for the local emergency operations facility (EOF) and 60 minutes for the technical support center (TSC), and operational support center (OSC) at an Alert or higher classification.

Please explain why this license amendment proposes to specify that the start time for augmentation is at a declaration of an Alert or higher given that this is already clearly defined in previously approved NRC documents.

DOMINION RESPONSE

Dominion Energy Virginia no longer requires or requests NRC review and approval of Section 2.1, "Emergency Response Organization Augmentation and Emergency Response Facility Activation Goals," submitted in Attachment 3 of the license amendment request (LAR) dated January 16, 2018.

Therefore, a response to RAI-3 is not provided.

However, for completeness, updated marked-up and proposed emergency plan changes for NAPS and SPS are included in Attachments 2, 3, 4 and 5, respectively. The emergency plan updates include revisions to Section 5.3 and Table 5.1 with the clarification of emergency response organization (ERO) augmentation and emergency response facility (ERF) activation goals originally proposed in the LAR removed.

NRC RAI-4

In Attachment 3 (page 2 of 19), Dominion Energy Virginia states, in part: [***bold/italics*** added]

> 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.

In Attachment 3 (page 4 of 19), Dominion Energy Virginia further states, in part: [***bold/italics*** added]

> 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 the 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.

The regulation at 10 CFR 50.47(b)(2) discusses the need for timely augmentation of response capabilities. In addition, the NRC issued Regulatory Issue Summary (RIS) 2016-10, "License Amendment Requests for Changes to Emergency Response Organization Staffing and Augmentation," dated August 5, 2016 (ADAMS Accession No. ML16124A002), to inform licensees of the application of guidance documents to support license amendment requests to change augmenting emergency response organization response times. Specifically, the NRC has identified the need to clarify the application of the Nuclear Energy Institute (NEI) document NEI 10-05, "Assessment of On-Shift Emergency Response Organization Staffing and Capabilities," dated June 23, 2011 (ADAMS Accession No. ML111751698).

RIS 2016-10 states, in part: [***bold/italics*** added]

> The NRC staff has recently received multiple LARs [license amendment requests] that seek to change ERO staffing commitments by extending the augmentation time for certain positions, or eliminating the staffing for positions entirely. ***In each case, the change has been justified primarily by referencing the on-shift staffing analysis developed in accordance with NEI 10-05, or a similar analysis using different accident scenarios. These LARs indicate a misunderstanding on how NEI 10-05 and the associated staffing analysis can be used effectively in the justification of proposed staffing changes.***
>
> The guidance in NEI 10-05 focuses on the capabilities of the on-shift staff, specifically to identify collateral duties that could interfere with the performance of on-shift emergency preparedness (EP) functions/capabilities. ***NEI 10-05 does not consider the capabilities offered by the augmenting ERO staff to relieve and support on-shift staffing for the purposes of providing justification for extension of ERO response times***. An on-shift staffing review using NEI 10-05

should ensure sufficient on-shift staff exists to perform all necessary EP functions and capabilities until augmenting ERO staff arrives, in accordance with the site's emergency plan commitments.

The guidance in NEI 10-05, Section 2.14, "Changes to ERO Response Times," may be used to identify if there is an on-shift position that has the necessary training to perform a major task as described in NUREG-0654, Table B-1, but is not currently credited for performing EP functions and capabilities that are assigned to an augmenting responder. This would allow the assignment of an augmented major task to that on-shift position, thereby maintaining the capability to perform the major task of the emergency plan while eliminating the need for an augmented responder to perform the tasks. The reassignment of these tasks to the on-shift position would need to be reflected in the emergency plan. ***However, an evaluation performed using only the guidance of NEI 10-05 does not satisfy the requirement to identify and evaluate changes to ERO augmentation timing or ERO augmentation staffing that reduces the capability to perform an emergency planning function.*** Following the guidance from RG 1.219, ["Guidance on Making Changes to Emergency Plans for Nuclear Power Reactors," dated July 2016, (ADAMS Accession No. ML16061A104)] LARs that seek approval for changes to on-shift staffing and the augmenting ERO (e.g., staffing levels, response timing) should identify each change and evaluate them individually.

The Dominion Energy Virginia request merely provides a discussion about the OSA and clarification of the approximation of the activation time. Based on the information provided in RAI-3 related to the start time being based on an emergency classification, there is not sufficient justification provided in the request for a time extension for each ERO position at the NAPS and SPS facilities as outlined in RIS 2016-10. Please provide further justification for the proposed extension of the augmentation timing to 75 minutes from event declaration for each ERO position impacted.

DOMINION RESPONSE

Dominion Energy Virginia no longer requires or requests NRC review and approval of Section 2.1, "Emergency Response Organization Augmentation and Emergency Response Facility Activation Goals," submitted in Attachment 3 of the license amendment request dated January 16, 2018.

Therefore, a response to RAI-4 is not provided.

However, for completeness, updated marked-up and proposed emergency plan changes for NAPS and SPS are included in Attachments 2, 3, 4 and 5, respectively. The emergency plan updates include revisions to Section 5.3 and Table 5.1 with the clarification of emergency response organization (ERO) augmentation and emergency response facility (EFR) activation goals originally proposed in the LAR removed.

NRC RAI-5

Dominion Energy Virginia proposes to expand the "off-hours" drill or exercise timeframe to include 4:00 a.m. to 6:00 p.m. on weekends, in addition to the 6:00 p.m. to 4 a.m. timeframe provided in current guidance defining "off-hours." In its justification, Dominion Energy Virginia states:

> 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.

Guidance in NSIR/DPR-ISG-01, "Emergency Planning for Nuclear Power Plants", Section IV.G, "Challenging Drills and Exercises," discusses that criteria for conducting off-hours drills or exercises would be included in the update to NUREG-0654 as Evaluation Criterion N.1.c:

> 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.

Guidance in the joint NRC/Federal Emergency Management Agency (FEMA) document, NUREG-0654/FEMA-REP-1, Rev. 1, Supplement 4, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants, dated October 2011, states, in part:

> NEW EVALUATION CRITERION:
>
> FEMA no longer requires OROs [offsite response organizations] to participate in off-hours and unannounced exercises. In order to retain the requirement for licensees, it has been deleted from Evaluation Criterion N.1.b and moved to a new Evaluation Criterion, N.1.c:
>
> NEW CRITERION N.1.c
>
> 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 8-year exercise cycle. Some drills or exercises should be unannounced.

Draft NUREG-0654/FEMA-REP-1, Revision 2, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," was published for comment on the *Federal Register* (FR) on May 29, 2015 (80 FR 30739). There were no comments made related to proposed guidance in Evaluation Criterion N.1.c.

The justification provided by Dominion Energy Virginia expands the interpretation of the drill and exercise timeframe beyond that which is provided in the guidance. Please

provide further justification as to why the expanded timeframe in the request provides an adequate challenge to ERO augmentation as a drill or exercise initiated during the 6:00 p.m. to 4:00 a.m. timeframe in current guidance, or revise this discussion in accordance with current NRC guidance.

DOMINION RESPONSE

Dominion Energy Virginia no longer requires or requests NRC review and approval of Section 2.6, "Expanding the Time Period for Starting a Drill or Exercise Outside Normal Working Hours," submitted in Attachment 3 of the license amendment request dated January 16, 2018.

Therefore, a response to RAI-5 is not provided.

For completeness, the updated marked-up and proposed emergency plan changes for NAPS and SPS included in Attachments 2, 3, 4 and 5, respectively, removes the words "on a weekday or during a weekend," originally proposed in Section 8.6.1 of the emergency plans when the LAR was submitted.

Serial No. 18-215
Docket Nos. 50-338/339
50-280/281

ATTACHMENT 2

MARKED-UP NAPS EMERGENCY PLAN CHANGES

VIRGINIA ELECTRIC AND POWER COMPANY
(DOMINION ENERGY VIRGINIA)
NORTH ANNA POWER STATION UNITS 1 AND 2
SURRY POWER STATION UNITS 1 AND 2

Dominion®

Emergency Plan

Title: North Anna Power Station Emergency Plan

Revision Number:	**Effective Date:**
# TBD	

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.

[ITEM PREVIOUSLY NUMBERED 3 REMOVED]

3. Elimination of automatic ringdown phones between the EOF and Louisa County, and between the EOF and Spotsylvania County.
4. Replacement of references to "equivalency credit" for required training sessions with reference to administrative processes for training exemptions and equivalent qualifications.
5. 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.
6. Addition of reference to availability of current letters of agreement (LOAs) and removal of LOAs from Appendix 10.1.

[ITEM PREVIOUSLY NUMBERED 8 REMOVED]

Items 1-6 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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1.1	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
~~CEOF~~	~~-~~	~~Central Emergency Operations Facility~~
CERC	-	Corporate Emergency Response Center
~~CERP~~	~~-~~	~~Corporate Emergency Response Plan~~
~~CERT~~	~~-~~	~~Corporate Emergency Response Team~~
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
EPIPs	-	Emergency Plan Implementing Procedures
EPZs	-	Emergency Planning Zones
ERDS	-	Emergency Response Data System
ERF	-	Emergency Response Facility
ERGs	-	Emergency Response Guidelines
ERO	-	Emergency Response Organization
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
~~LEOF~~	~~-~~	~~Local Emergency Operations Facility~~
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
NUREG	-	NRC Report
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
PAR	-	Protective Action Recommendation
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

Part	Subject	Page No.
2.1	Site Specifics	2.2
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

Part	Subject	Page No.
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
EMERGENCY PLAN

SECTION 4

EMERGENCY CONDITIONS

Part	Subject	Page No.
4.0	Emergency Conditions	4.2
4.1	Spectrum of Postulated Accidents	4.2
4.2	Emergency Classification System	4.3
4.3	State and Local County Emergency Classification System	4.8
4.4	Requirements For Written Summaries of Emergency Events	4.8

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 ≤ 200°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°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°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 ≤ 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 ≤ 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 **not** 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 ≤ 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 EPIPs. 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 direct~~s~~ 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 EPIPs 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 Recovery~~CERC 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 ~~LEOF~~CERC.

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 ~~LEOF~~CERC. The Dose Assessment Team will then provide support to the RAD regarding onsite response and interface with the ~~LEOF~~CERC.

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 ~~LEOF~~CERC. 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 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 ~~ONSITE~~ 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. The facility activation goal for the ~~LEOF,~~ TSC and OSC is approximately 60 minutes. The activation time goal for the CERC is within 75 minutes of the declaration of an Alert or higher emergency class, with activation defined as the assembly of required positions in the CERC and the CERC Corporate Response Manager 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 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.~~

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

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 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.

is beyond the scope of this license amendment request.

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 ~~LEOF~~CERC, 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 ~~LEOF~~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 ~~LEOF~~CERC. 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 Approx. 45 Min.	60 Min.
Assessment of Operational Aspects	CR	Supervision of Station Operations and Assessment of Operational Aspects	**Shift Manager-(SRO)**	**1**	-	-
	CR	Plant Operations	**Unit Supervisor (SRO)**	**2**	-	-
			Control Room Operator (RO)	**4**	-	-
			Control Room Operator (AO)	**8**	-	-
Emergency Direction and Control	CR/TSC	Direction and Control of On-Site Emergency Activities	Station Emergency Manager	1[a]	-	1
Notifications and Communications	CR/TSC	Notify Offsite Support Groups and Maintain Communications	Emergency Communicator	2[b]	-	2
Support of Operational Accident Assessment	~~EOF~~ CERC	Management of Emergency Response Resources and Recovery Operations	~~Recovery~~ Technical Support Manager	(Refer to Table 5.2)		
Radiological Accident Assessment	TSC/~~EOF~~ CERC	Radiological Dose Assessment/ Accident Assessment	**Radiological Assessment Director**/ Radiological Assessment Coordinator	**1**[c]	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 Approx. 45 Min.	60 Min.
Radiological Accident Assessment [continued]	In-Plant	In-Plant Surveys and Radiochemistry	**In-Plant Monitoring Team Leader**	**1**	-	-
			In-Plant Monitoring Team Member	-	1	1
		In-Plant Chemistry	Chemistry Team Leader	-	-	1
			Chemistry Team Member	**1**	-	1
Plant Systems Engineering Repair and Corrective Actions	CR/TSC	Operational Technical Support (STA)	**Shift Technical Advisor**	**1[d]**	-	-
			Technical Support Team Member (Operational Advisor)	-	-	1[e]
	TSC	Core and Thermal Hydraulics	Technical Support Team Member	-	-	1[f]
	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[g]	-	2
	OSC	Electrical Maintenance	Damage Control Team Member	1[g]	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	**Personnel Monitoring Team Member**	**1[h]**	-	2

Major Functional Area	Location	Major Tasks	Emergency Title	On Shift	Additional Within Approx. 45 Min.	60 Min.
Firefighting	In-Plant	Firefighting	Fire Brigade Members (Operations)	3[i]	local support	
			Fire Brigade Members (Security)	**2[i]**		
First Aid & Rescue	In-Plant	First Aid	First Aid Team Member	2[j]	local support	
	In-Plant	Search and Rescue	Search and Rescue Team Member	2[j]	-	2[j]
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)

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

TABLE 5.3

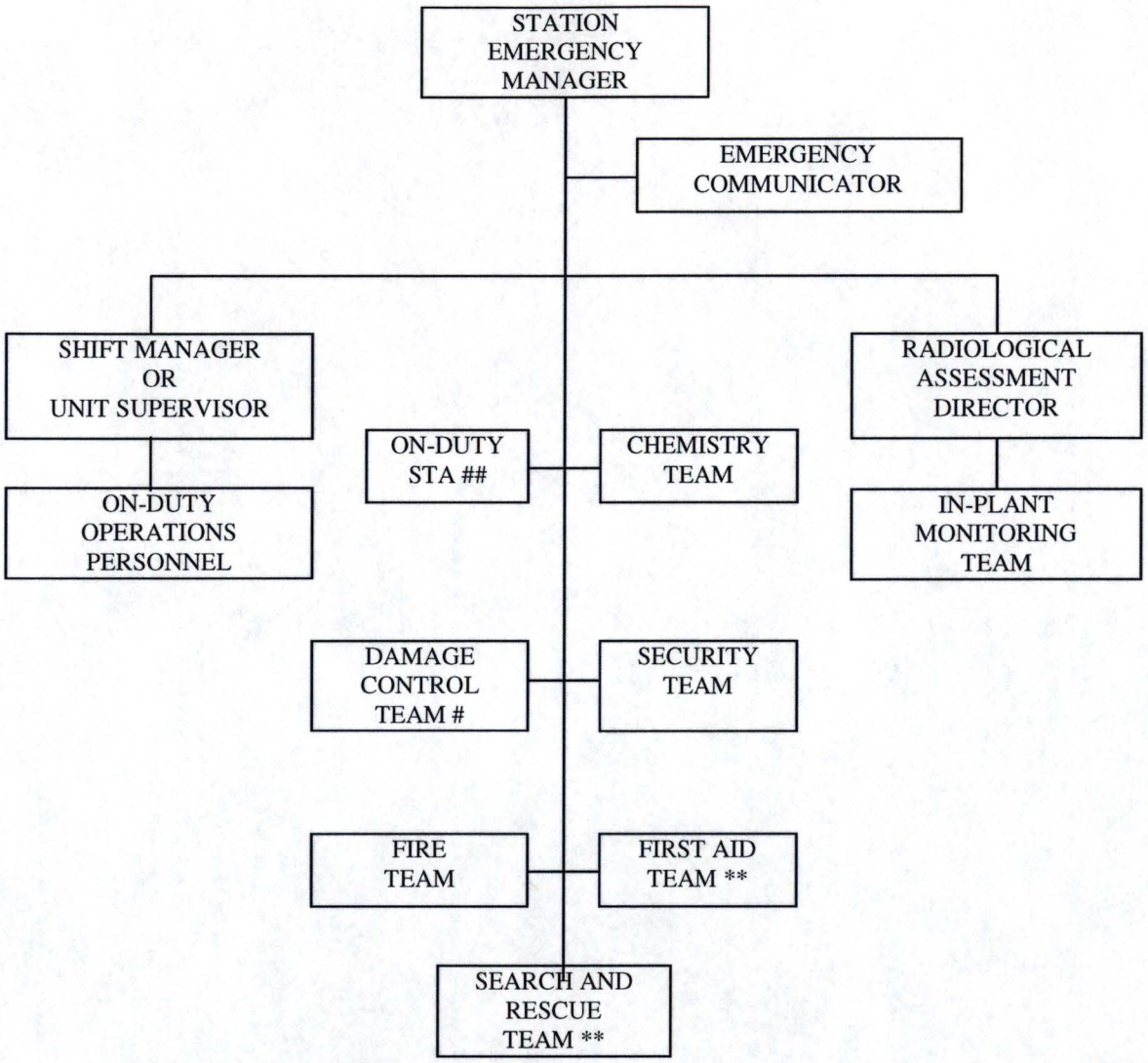
CITIES AND COUNTIES WITHIN THE NORTH ANNA 50 MILE EMERGENCY PLANNING ZONE **

1. City of Charlottesville
2. City of Fredericksburg
3. City of Richmond *
4. Albemarle County
5. Amelia County
6. Buckingham County
7. Caroline County
8. Chesterfield County *
9. Culpeper County
10. Cumberland County
11. Essex County *
12. Fauquier 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 *
21. Louisa County
22. Madison County
23. Nelson County
24. Orange County
25. Page County
26. Powhatan County
27. Prince William County
28. Rappahannock County
29. Rockingham County
30. Spotsylvania County
31. Stafford County
32. Westmoreland 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



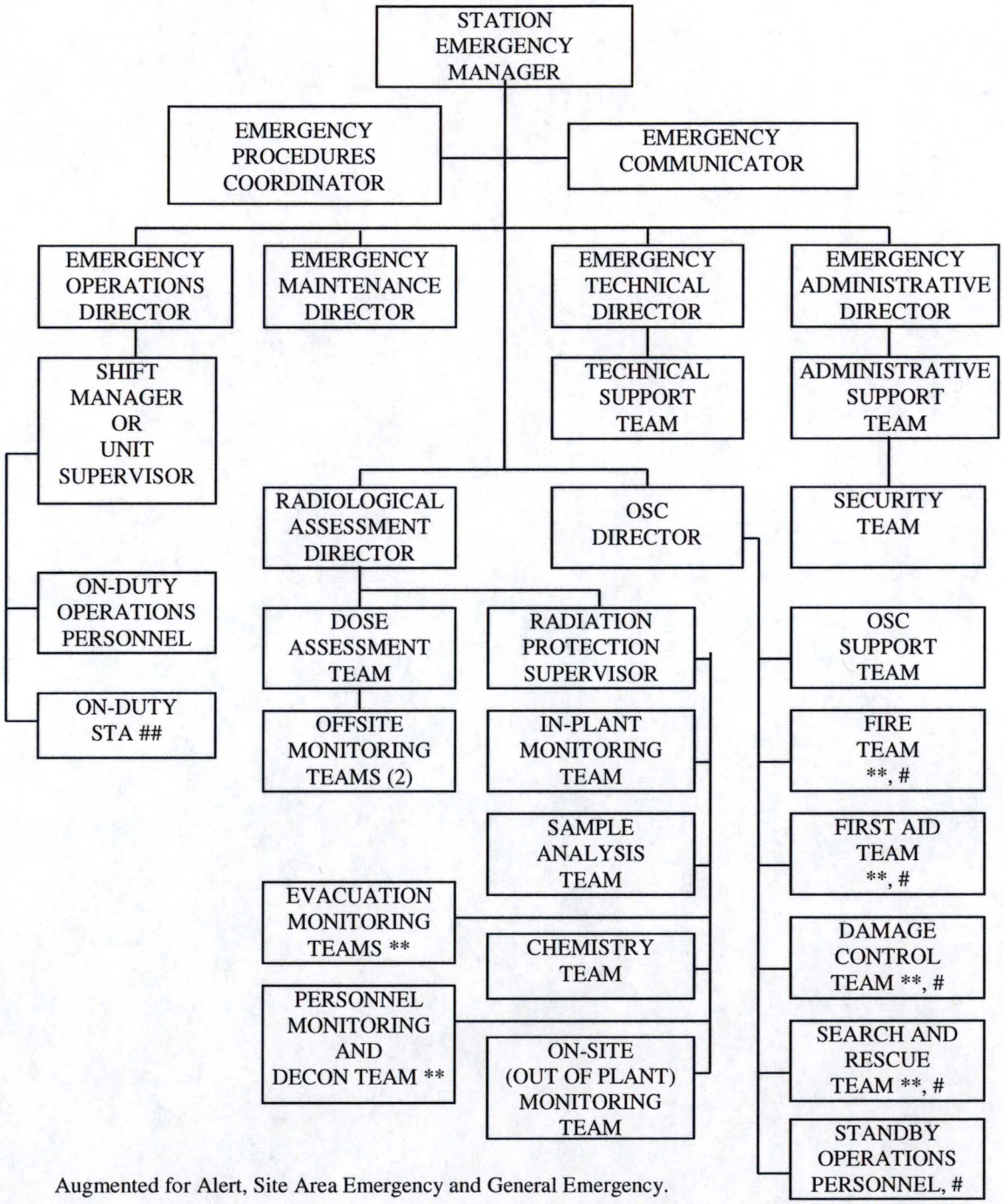
* Augmented for Alert, Site Area Emergency and General Emergency.

** 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

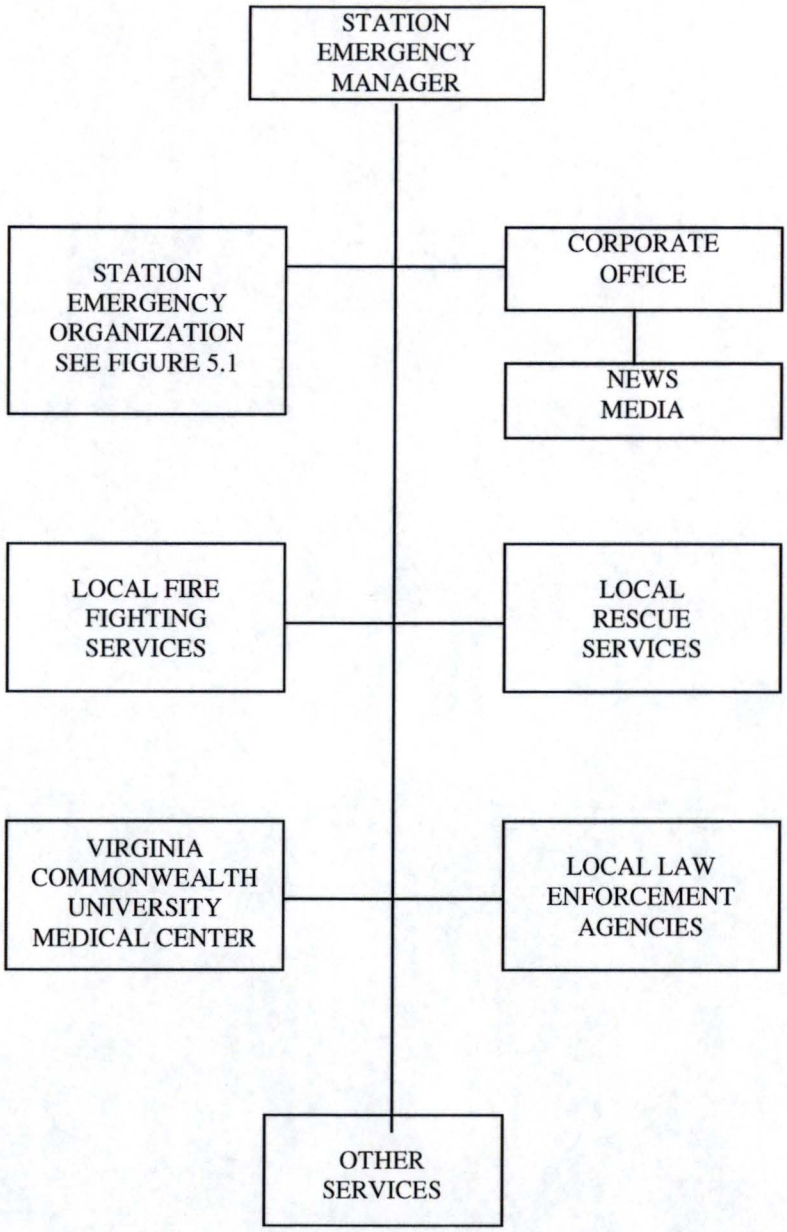


* Augmented for Alert, Site Area Emergency and General Emergency.

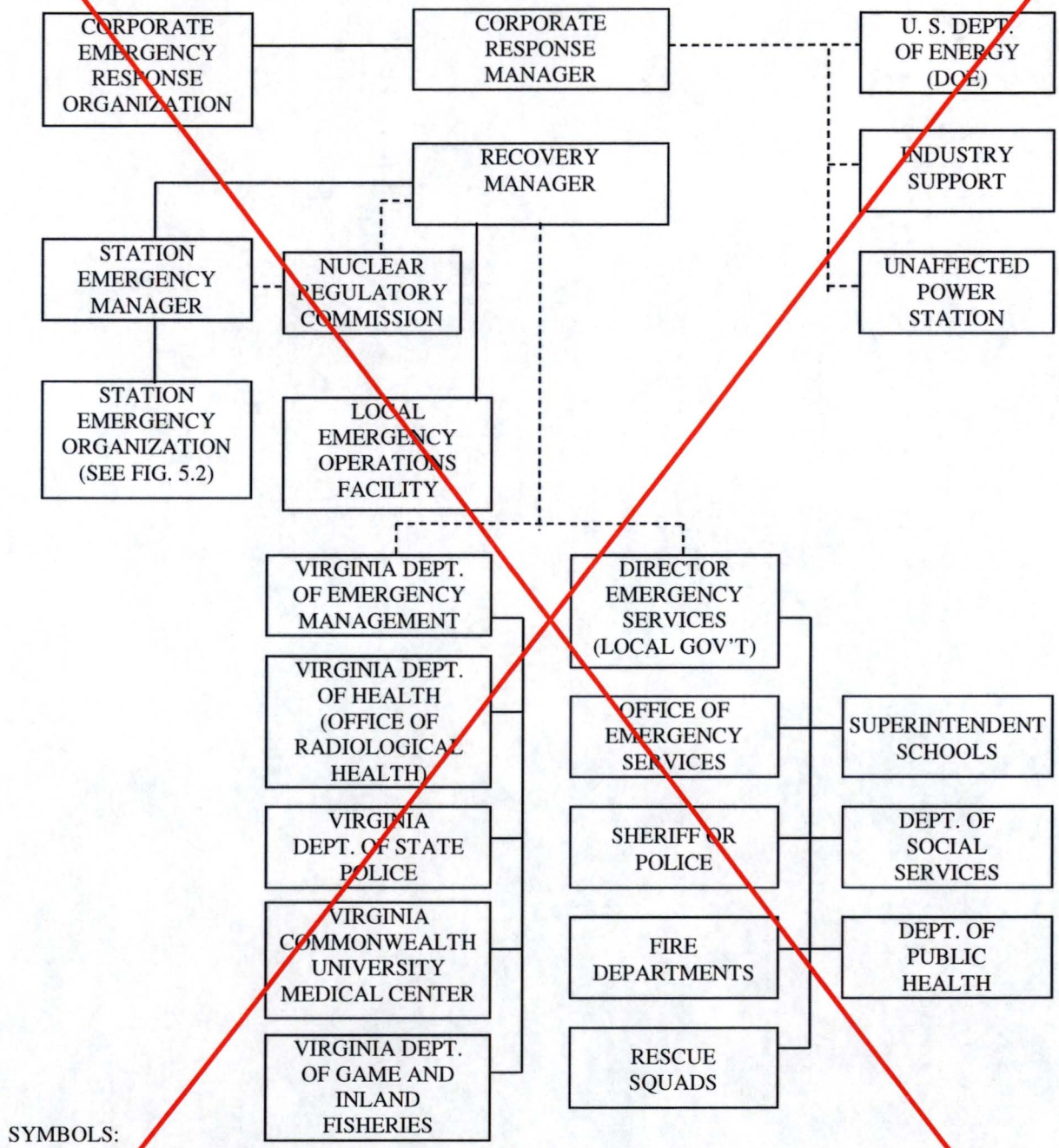
** This team will be activated only if circumstances require this function to be performed.

\# 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.

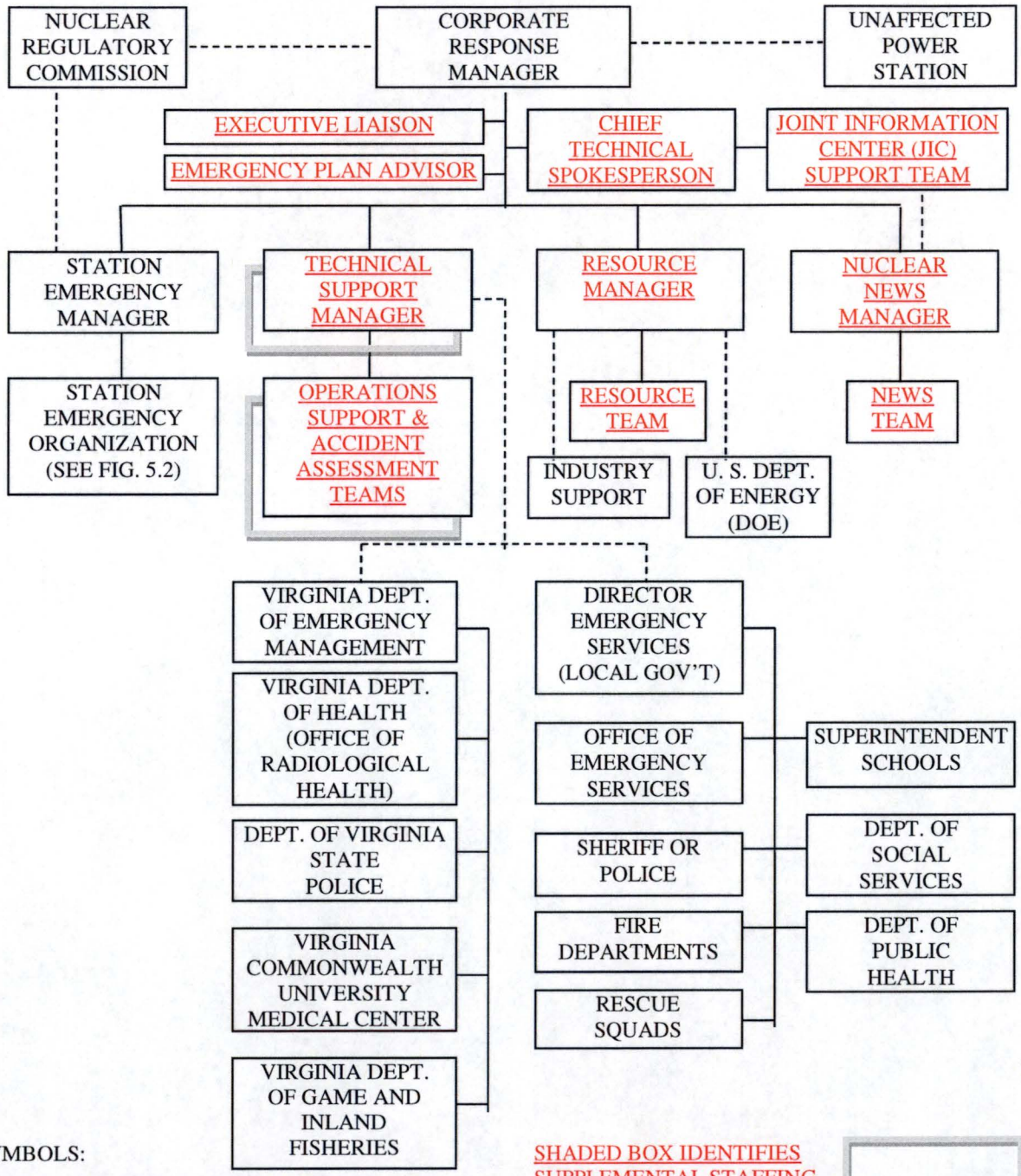
STATION TO SUPPORT GROUP INTERFACE
PRIOR TO AUGMENTATION OF THE EMERGENCY ORGANIZATION
FIGURE 5.3



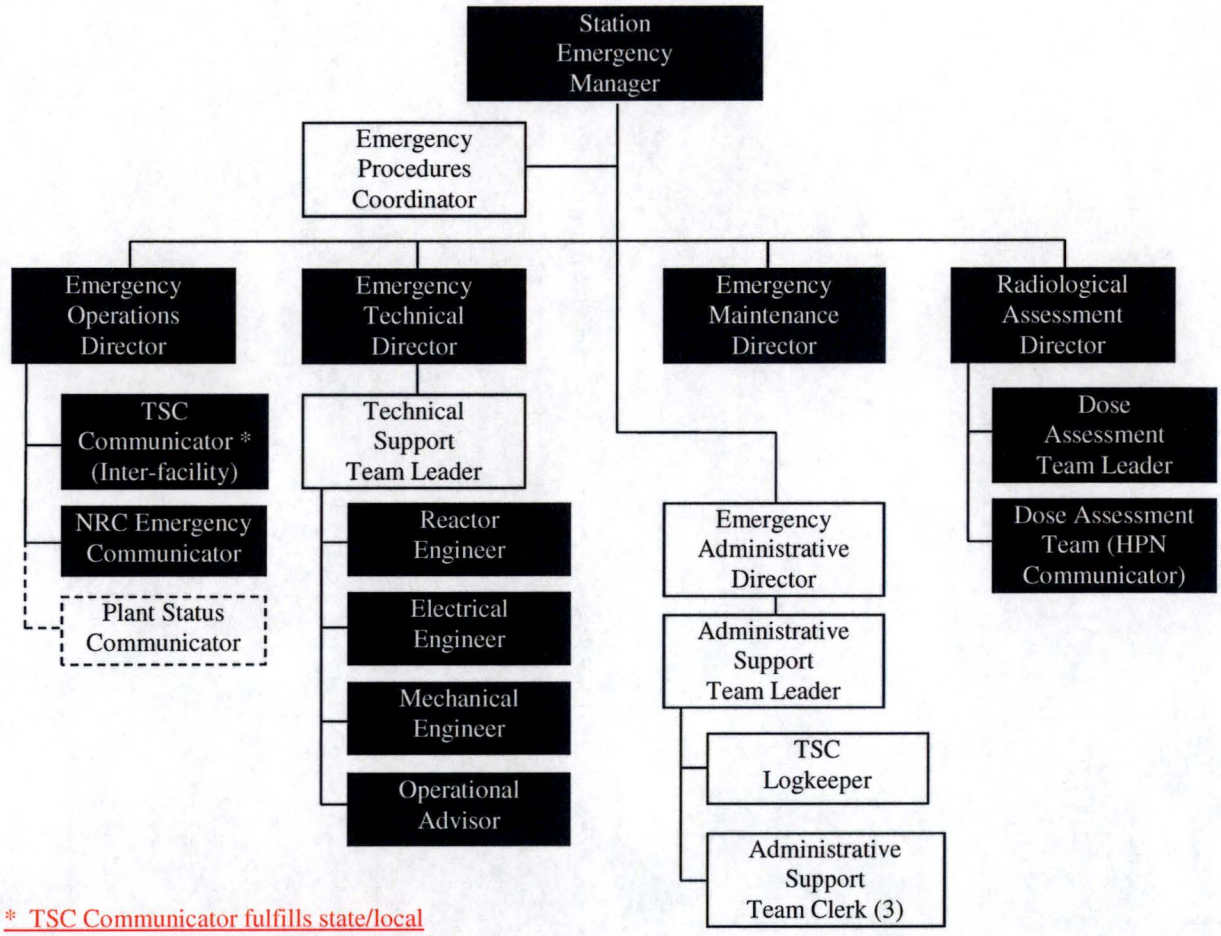
STATION TO SUPPORT GROUP INTERFACE
FOLLOWING LEOF ACTIVATION
FIGURE 5.4



STATION TO SUPPORT GROUP INTERFACE
FOLLOWING ~~LEOF~~CERC ACTIVATION
FIGURE 5.4



TECHNICAL SUPPORT CENTER ORGANIZATION
FIGURE 5.5.a



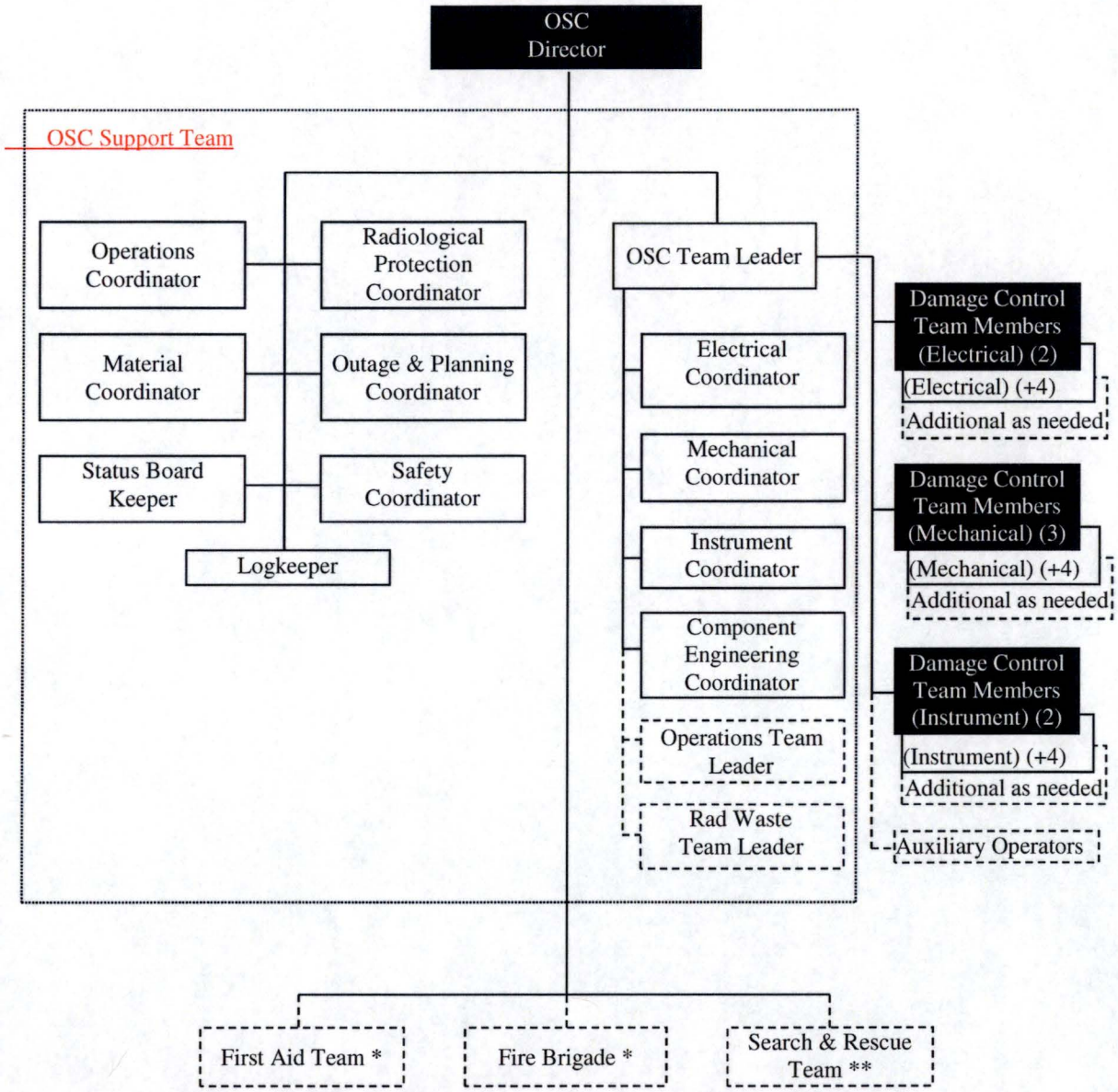
* TSC Communicator fulfills state/local notification function if EOF unavailable.

■ Indicates positions necessary for facility activation.

□ Indicates fully augmented organization positions.

⬚ Indicates position established if needed.

OPERATIONAL SUPPORT CENTER ORGANIZATION
FIGURE 5.5.b



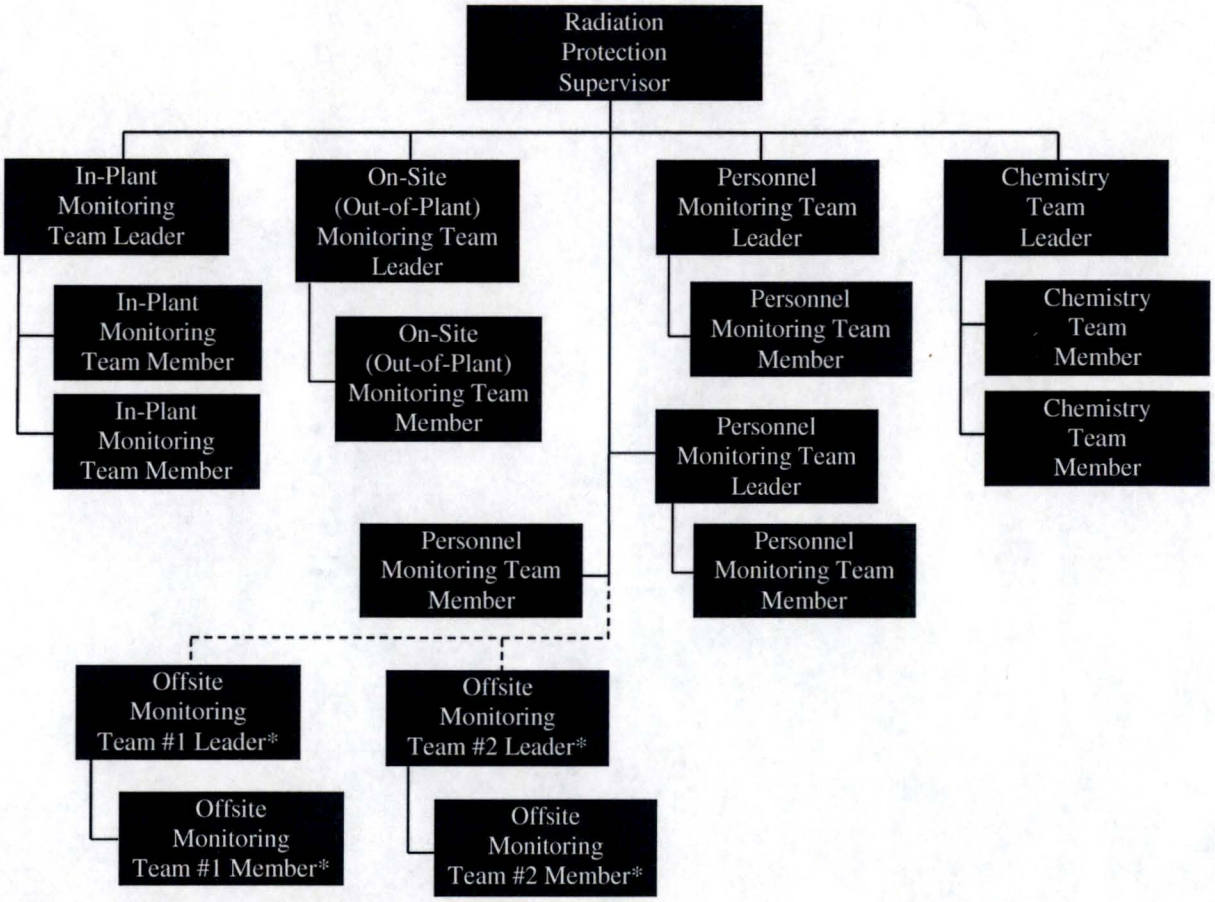
* First Aid Team and Fire Brigade functions are addressed by on-shift personnel.
Additional qualified personnel who report to the OSC may be designated for these functions.
** Search & Rescue Team formed from Fire Brigade/First Aid Team/Security staff as appropriate.

■ Indicates positions necessary for facility activation.

□ Indicates fully augmented organization positions.

⬚ Indicates team established as needed.

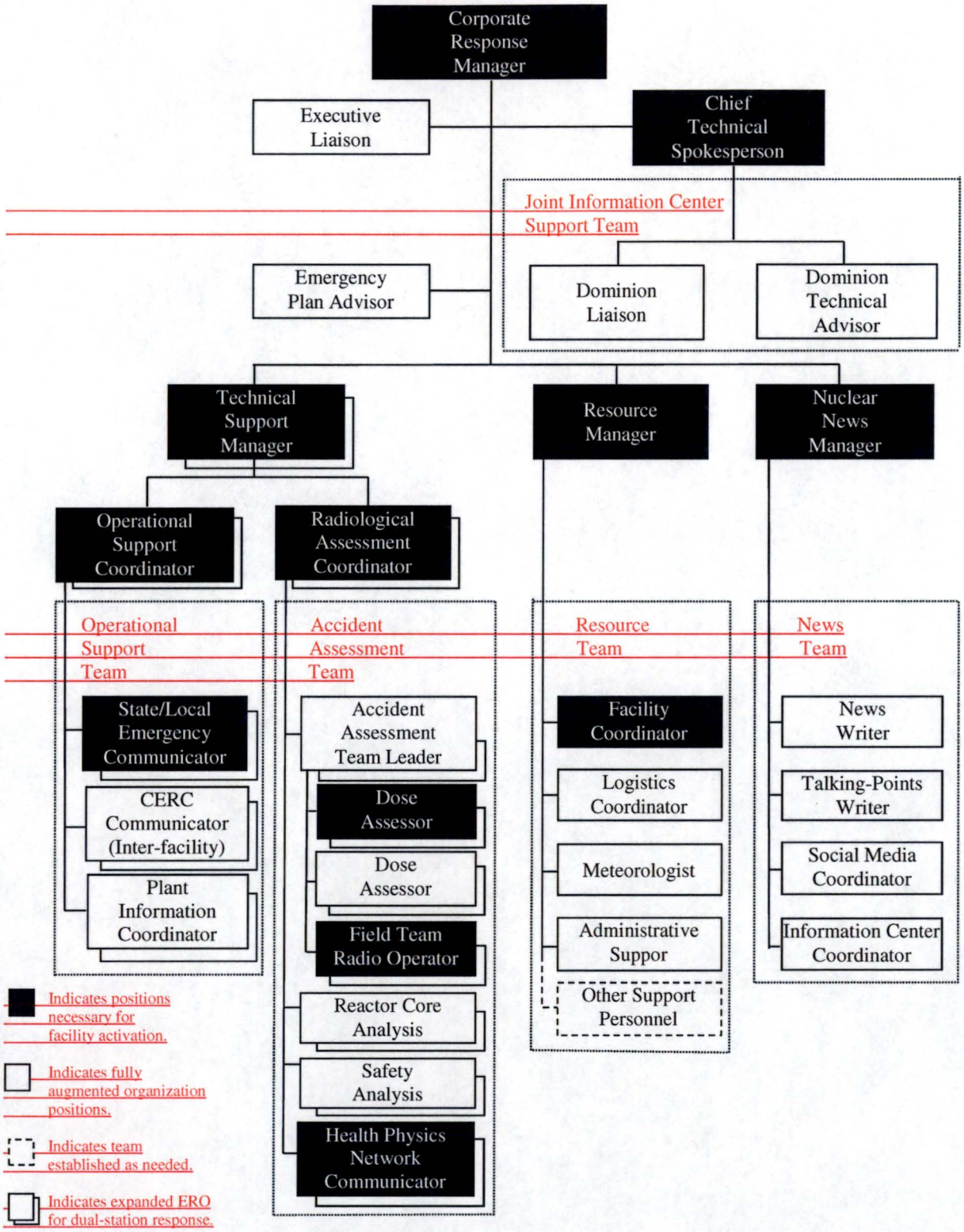
RADIATION PROTECTION ORGANIZATION
FIGURE 5.5.c



■ 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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6.3.2	Onsite Criteria for the Exclusion Area	6.5
6.3.3	Use Onsite of Protective Equipment and Supplies	6.6
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6.3.3.2	Protective Clothing	6.6
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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 EPIPs 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.

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[1]

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)	
Radionuclide	Half life (days)	Radionuclide	Half life (days)	Radionuclide	Half Life (days)
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

Direction/Sector	Population	2-Mile Ring	5-Mile Ring	10-Mile Ring
Direction: North	Permanent Resident	76	367	1181
Sector: A	Transient	0	159	0
Direction: North Northeast	Permanent Resident	21	282	1305
Sector: B	Transient	150	35	0
Direction: Northeast	Permanent Resident	12	142	1678
Sector: C	Transient	0	0	0
Direction: East Northeast	Permanent Resident	0	163	1720
Sector: D	Transient	0	0	0
Direction: East	Permanent Resident	63	263	1258
Sector: E	Transient	0	58	0
Direction: East Southeast	Permanent Resident	20	378	1064
Sector: F	Transient	0	0	0
Direction: Southeast	Permanent Resident	29	231	931
Sector: G	Transient	0	0	0
Direction: South Southeast	Permanent Resident	64	341	1184
Sector: H	Transient	0	0	0
Direction: South	Permanent Resident	92	261	1714
Sector: J	Transient	0	0	0
Direction: South Southwest	Permanent Resident	39	128	861
Sector: K	Transient	0	0	0
Direction: Southwest	Permanent Resident	11	220	1598
Sector: L	Transient	0	0	0
Direction: West Southwest	Permanent Resident	12	142	1683
Sector: M	Transient	0	0	0
Direction: West	Permanent Resident	149	188	750
Sector: N	Transient	0	0	0
Direction: West Northwest	Permanent Resident	41	546	812
Sector: P	Transient	0	0	2000
Direction: Northwest	Permanent Resident	0	405	1429
Sector: Q	Transient	0	390	98
Direction: North Northwest	Permanent Resident	58	161	980
Sector: R	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: _____ (24-hr time) AVE Wind Speed _____ mph ; AVE Wind Direction from _____ degrees (0° to 360°)

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).

SAMPLE

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 ≥ 5 Rem Thyroid CDE.

The time is _____ (24-hr time).

This is _____ / Emergency Communicator.

Message received by: Virginia EOC Watch Officer (name) _____.

SAMPLE

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: Unit

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.):		

SAMPLE

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 (hr): _____; ☐ Unknown

Release Pathway: _____; ☐ Unknown Release Duration (hr): _____; ☐ Unknown

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

Average Lower Wind direction is from _____ degrees (1 to 360°)

Average Lower Wind Speed is _____ mph; Downwind Sector is _____

Average Upper Wind direction is from _____ degrees (1 to 360°)

Average Upper Wind Speed is _____ mph; Downwind Sector is _____

Stability Class is _____; Ambient Temperature is _____ degrees F

Precipitation: ☐ None; ☐ Rain; ☐ Sleet; ☐ 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

SAMPLE

FIGURE 6.5

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

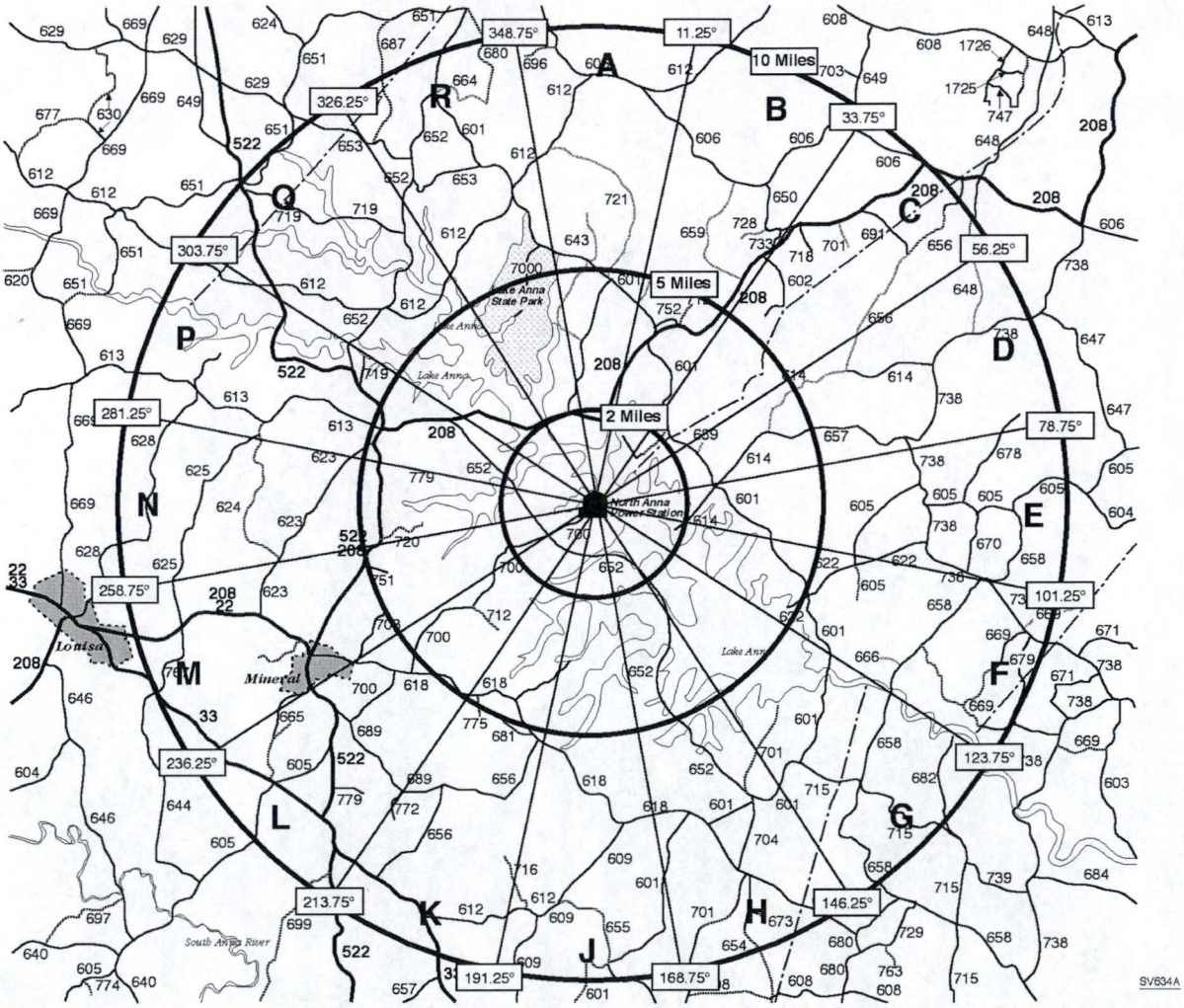
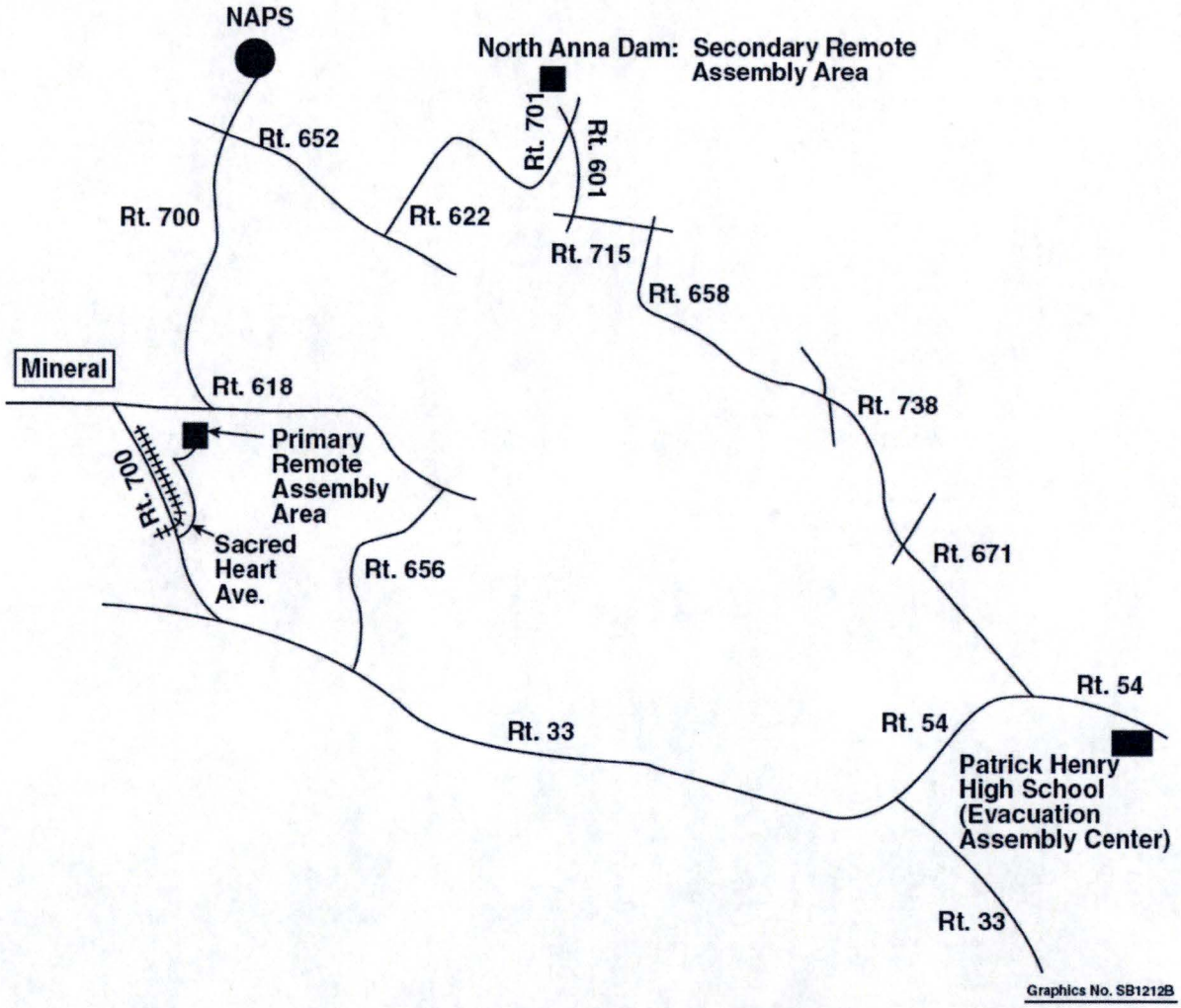


FIGURE 6.6

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, 3rd 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~~ The facility provides 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 facility~~CERC, control room, and plant security. The ~~CEOF, 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 data and 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~~/CEOF~~, 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.

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 ~~LEOF~~CERC.
- 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 ~~LEOF~~CERC.
- Reactor Safety Counterpart Link (RSCL): Allows for internal NRC discussions regarding plant and equipment conditions. RSCL lines are located in the TSC and ~~LEOF~~CERC.
- 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 ~~LEOF~~CERC.
- 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 ~~LEOF~~CERC.
- Local Area Network (LAN) Access: Provides access to the NRC local area network. Telephone jacks are provided in the TSC and ~~LEOF~~ CERC 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 ~~LEOF~~CERC.

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 $5X10^{-8}$ 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:

LOCATION	ORGANIZATION	DISTANCE FROM NORTH ANNA (MILES)
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[1]

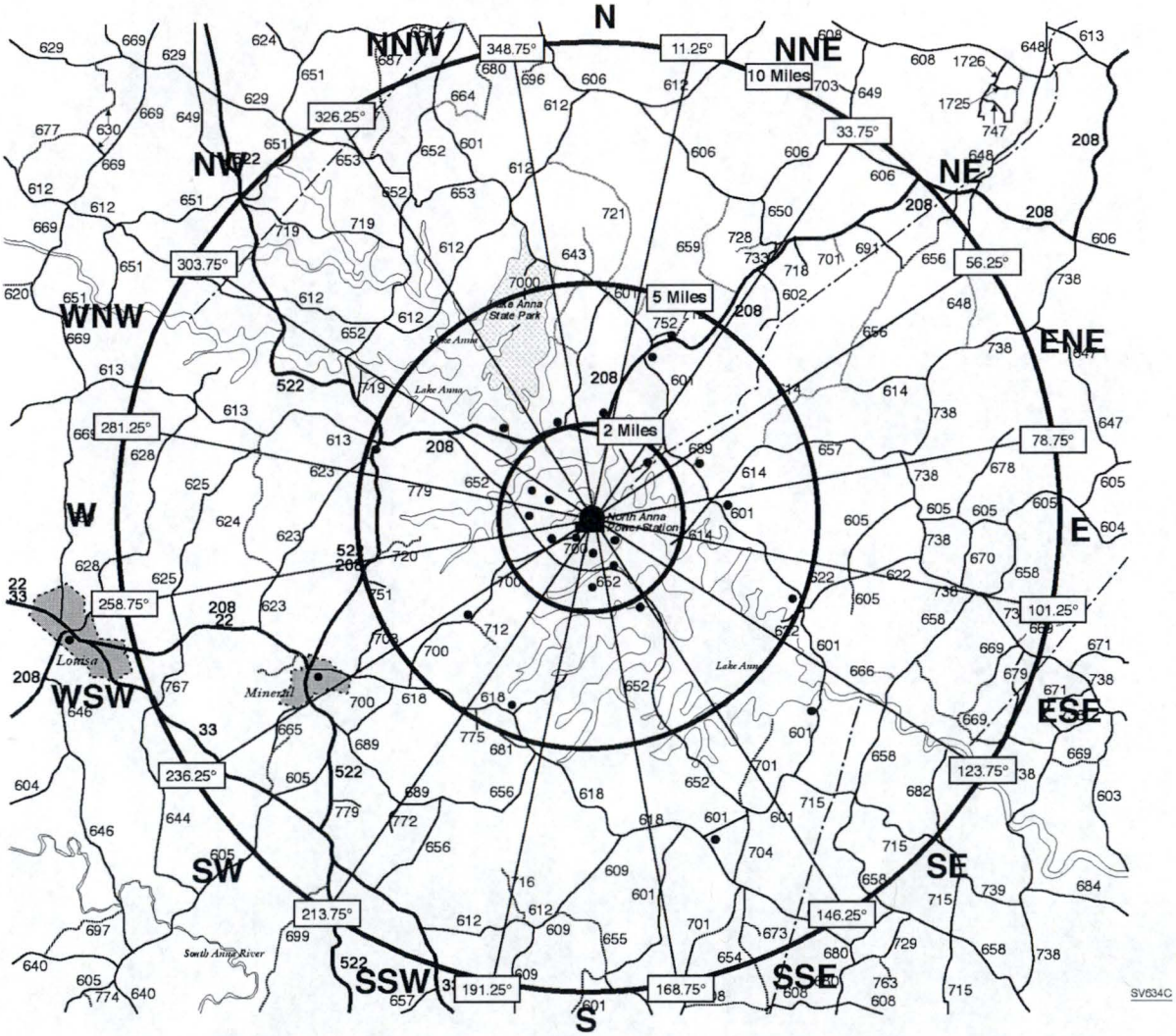
Measurement	Primary Tower 48.4 Meters.	Primary Tower 10 Meters	Ground	Backup Tower 10 Meters.	Control Rm. Readout
Wind Speed	X	X		X	X
Wind Direction	X	X		X	X
Sigma-theta	X	X		X	X[2]
Temperature		X			X
Differential Temperature	X	X			X
Dew Point Temperature		X			
Precipitation			X		

(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*

Sample Media	Location	Station #	Distance (miles)	Direction	Remarks
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 EPIPs 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 EPIPs.

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.

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.

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 ~~LEOF~~CERC, 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. 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, ~~EOF~~CERC, 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

EMERGENCY RESPONSE POSITION	SCOPE OF TRAINING (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
Corporate Response Manager and Technical Support Manager	1, 13, 16, 17
Nuclear News Manager and News Team	1, 13, 17, 18
Chief Technical Spokesperson and JIC Support Team	1, 13, 17, 18
Executive Liaison	1, 13, 16, 17
Operations Support Coordinator and Operations Support Team	1, 13, 15, 17
Radiological Assessment Coordinator	1, 9, 10, 13, 15, 17

Accident Assessment Team dose assessors	1, 9, 13, 17
HPN Communicator	1, 3, 13, 17
State & Local Emergency Communicator (CERC)	1, 3, 13, 17
CERC positions not listed above	1, 13, 17
Information Center Coordinators	1, 13, 19

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

Part	Subject	Page No.
9.0	Recovery	9.2
9.1	Recovery Methodology	9.2
9.2	Population Exposure	9.2
Figure 9.1	Example Recovery Organization	9.X

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 implementating and administering the recovery plan and organization~~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

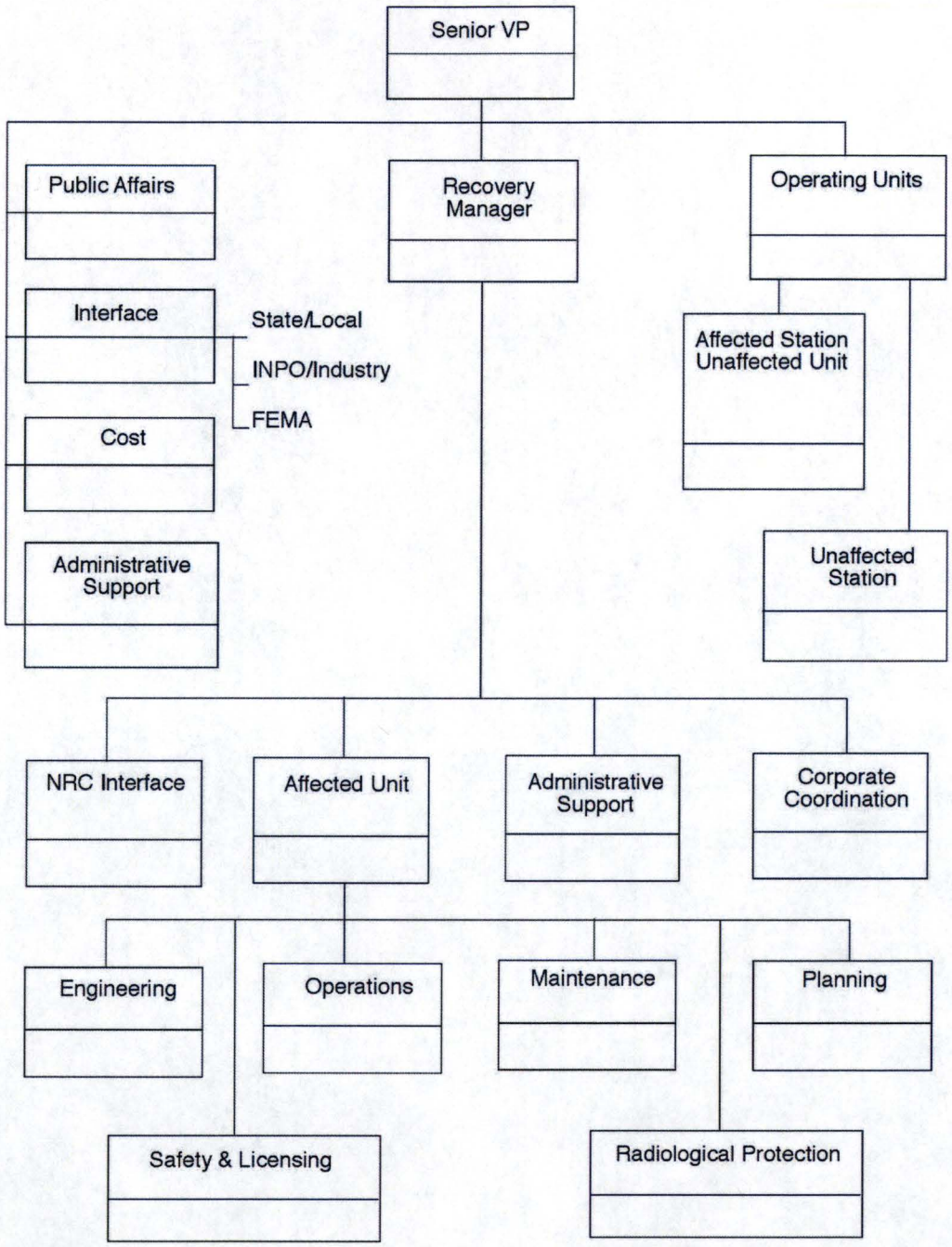
Total population doses shall be periodically estimated in the affected sectors and zones utilizing population distribution data from within the emergency planning zones.

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

Graphic No: NB47

NORTH ANNA POWER STATION
EMERGENCY PLAN

SECTION 10
APPENDICES

Part	Subject
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 supersedes 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.

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

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.

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 should you have any questions or require additional information relating to this correspondence.

Sincerely,

for DL Levine

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) Flaherty
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

Department of Game and Inland Fisheries

Molly J. Ward
Secretary of Natural Resources

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 extend 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,

Robert W. Duncan
Executive Director

RWD/GFM/ag

C: Captain Clark Greene, Acting Chief, DGIF Law Enforcement Division

7870 Villa Park Drive, Ste 400, P.O. Box 90778, Henrico, VA 23228-0778
(804) 367-1000 (V/TDD) ***Equal Opportunity Employment, Programs and Facilities***

VCU Health

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

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.

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,

Deborah W. Davis

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.

1 Woolfolk Avenue • Post Office Box 160 • Louisa, Virginia 23093
(540) 967-0401 • (866) 325-4131

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

1 Woolfolk Avenue • Post Office Box 160 • Louisa, Virginia 23093
(540) 967-0401 • (866) 325-4131

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 combined 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.

R L Harris — 9/13/16
Signature — **Date**

SHERIFF
Title

County of Spotsylvania

Board of Supervisors

GREG CEBULA
GREG BENTON
TIMOTHY J. McLAUGHLIN
DAVID ROSS
GARY F. SKINNER
PAUL D. TRAMPE
CHRIS YAKABOUSKI

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) 582-6957

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,

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,

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
112 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.

233 West Broaddus Avenue • Bowling Green, VA 22427
Phone: 804-633-9831 • Fax: 804-633-9832

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.

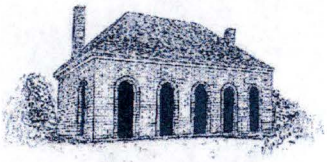
We understand that the combined license application Dominion submitted to the proposed North Anna Unit 3 remains under review by the Nuclear Regulatory Commission

Sincerely,

A. A. "Tony" Lippa, Jr.
Sheriff

AAL/tmw

BOARD OF SUPERVISORS
AUBREY M. STANLEY, CHAIRMAN
BEAVERDAM DISTRICT
ANGELA KELLY-WIECEK, VICE-CHAIRMAN
CHICKAHOMINY 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. HAUKSEN, 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.

COUNTY OF HANOVER

MEMBER OF
VIRGINIA STATE SHERIFF'S ASSN.

Virginia Law Enforcement Professional Standards Commission

OFFICE OF SHERIFF
COLONEL DAVID R. HINES
P.O. BOX 40
HANOVER, VIRGINIA 23069
804-365-6110 804-730-6110

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

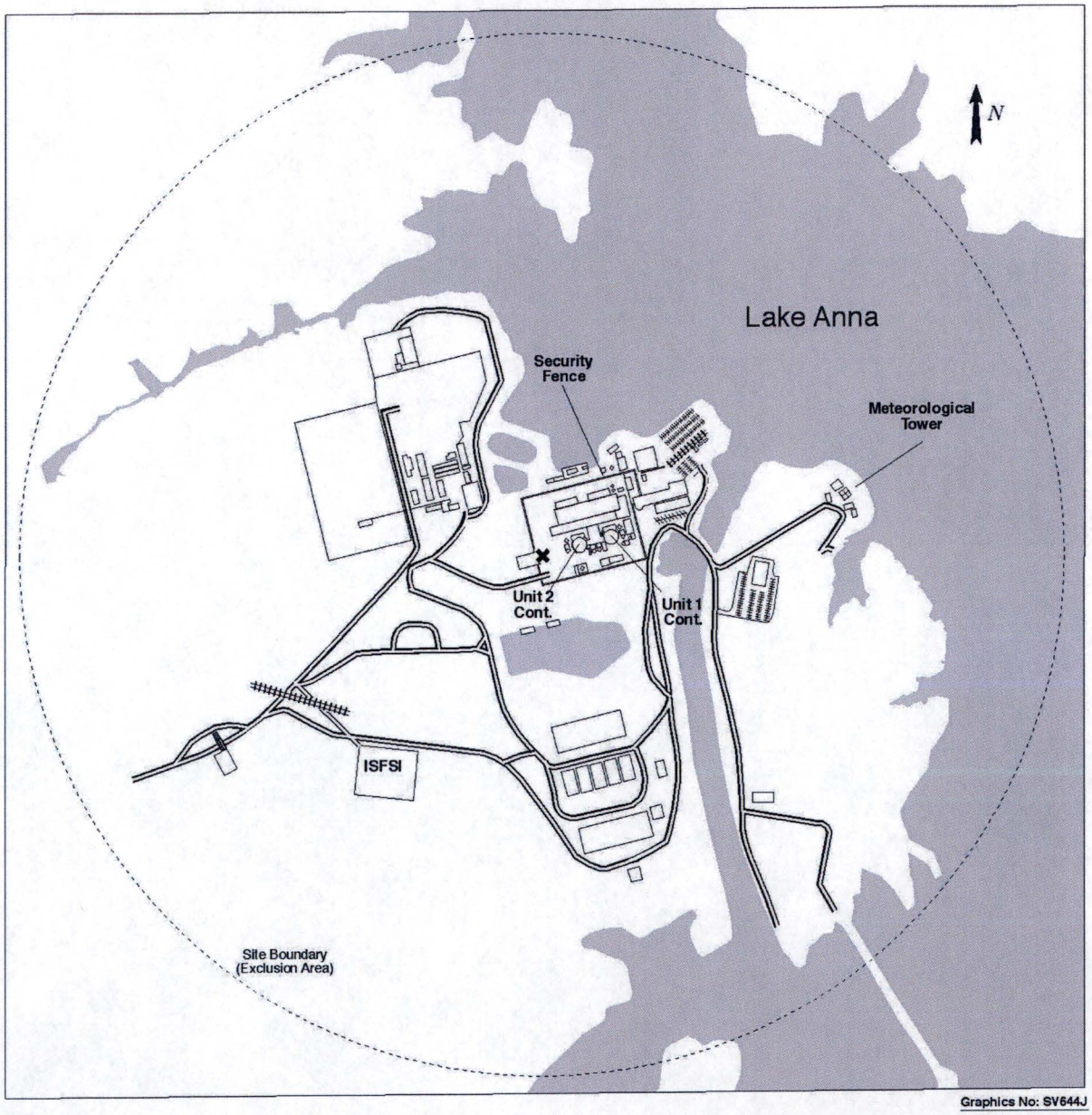
(DELETED)

APPENDIX

10.3

MAPS OF EXCLUSION AREA, LOW POPULATION AND EMERGENCY PLANNING ZONE BOUNDARIES

NORTH ANNA POWER STATION
EXCLUSION AREA

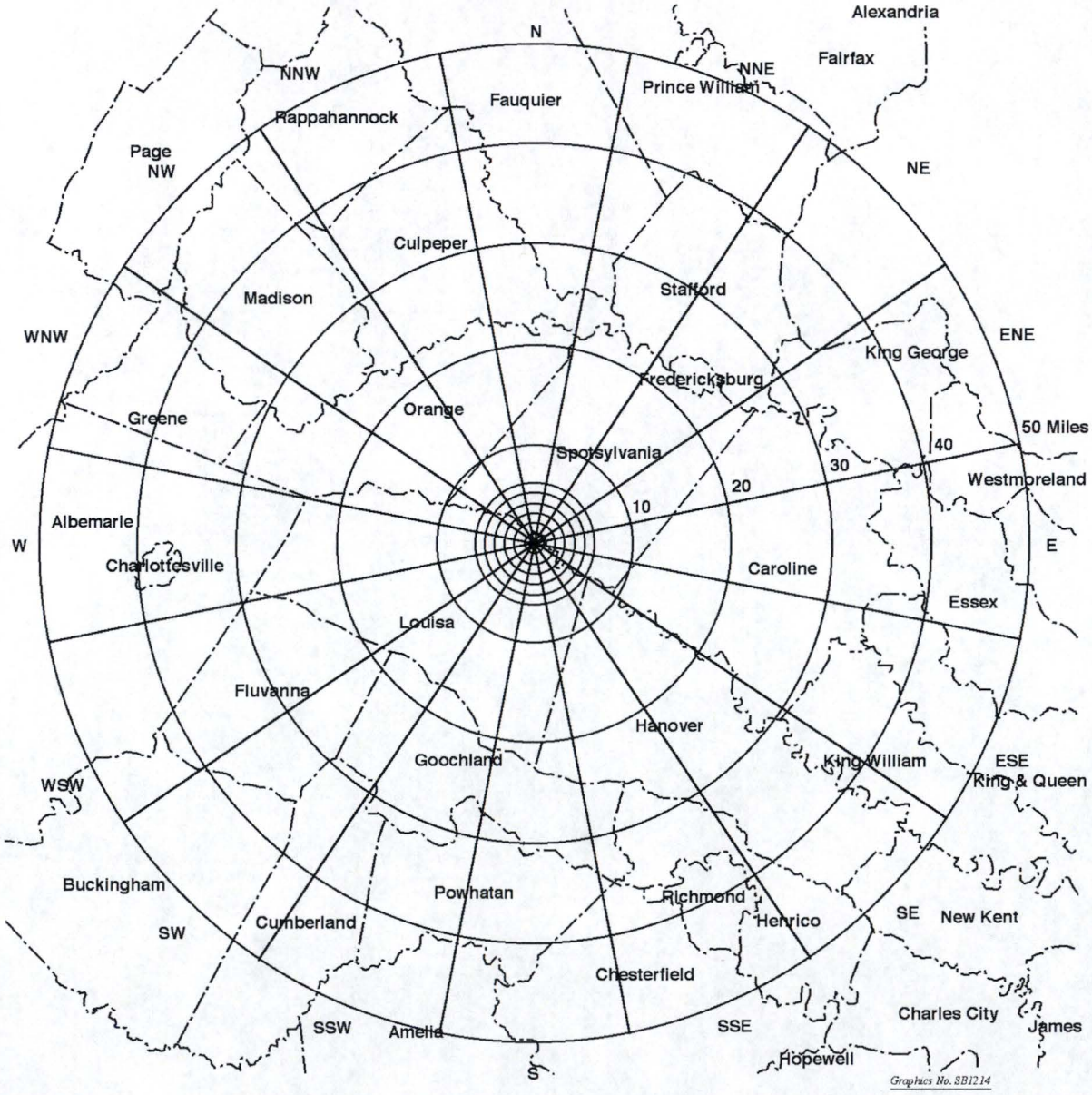


Graphics No: SV644J

NORTH ANNA POWER STATION
LOW POPULATION ZONE
10 MILE EMERGENCY PLANNING ZONE

Graphics No. SB1213

NORTH ANNA POWER STATION
50 MILE RADIUS



APPENDIX

10.4

LISTING OF EPIPs

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*

NAEP SECTION NUMBER	IMPLEMENTED BY	EPIP NUMBER
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, 3.06, 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.

Emergency Kits for Offsite Monitoring Teams

NOTE: Each kit shall contain at least the following items:

Quantity	Description
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.

Emergency Kits
TSC, OSC, and ALT OSC~~, and LEOF~~

NOTE: Each kit shall contain at least the following items:

Quantity	Description
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:

Quantity	Description
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

ORGANIZATION	CONTACT
~~Dominion - Corporate Emergency Response Plan~~	~~Dominion Nuclear Emergency Preparedness Department~~
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.