VIRGINIA ELECTRIC AND POWER COMPANY
RICHMOND, VIRGINIA 23261

10 CFR 50.90

November 7, 2022

U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, DC 20555-0001

Serial No.: 22-026
NRA/ENC: R0
Docket Nos.: 50-338/339
50-280/281
License Nos.: NPF-4/7
DPR-32/37

VIRGINIA ELECTRIC AND POWER COMPANY (DOMINION ENERGY VIRGINIA)
NORTH ANNA POWER STATION UNITS 1 AND 2
SURRY POWER STATION UNITS 1 AND 2
PROPOSED LICENSE AMENDMENT REQUEST TO
REVISE EMERGENCY PLAN STAFF AUGMENTATION TIMES

Pursuant to 10 CFR 50.90, Virginia Electric and Power Company (Dominion Energy Virginia) is requesting Nuclear Regulatory Commission (NRC) approval of proposed changes to the Renewed Facility Operating License Numbers NPF-4 and NPF-7 for North Anna Power Station (NAPS), Units 1 and 2, respectively, and Renewed Facility Operating License Numbers DPR-32 and DPR-37 for Surry Power Station (SPS), Units 1 and 2, respectively. Dominion Energy Virginia proposes the following changes to the NAPS and SPS Emergency Plans:

- Extension of facility activation time requirements for the Technical Support Center (TSC), Operational Support Center (OSC), and Corporate Emergency Response Center (CERC) to 90 minutes;
- Extension of the augmentation time for Emergency Response Organization (ERO) members to 90 minutes;
- Redefinition of 'minimum staff' positions in the Emergency Response Facilities (ERFs) to align with new facility activation criteria;
- Addition of a definition for 'facility activation' criteria to align with command-and-control functions in the TSC, OSC, and CERC;

- Reorganization of the staffing table based on emergency preparedness (EP) functions to better align to NUREG-0654, Revision 2, Table B-1 guidance;
- Aligning required ERO on-shift personnel with revised regulatory guidance;
- Removal of administrative positions to non-emergency response procedures;
- Removal of the Local Media Center (LMC) at each station as an ERF.

A description and assessment of the proposed changes to the NAPS Emergency Plan is provided in Enclosure 1. A marked-up copy and clean copy of the affected pages of the NAPS Emergency Plan are included in Attachments 1-1 and 1-2, respectively. The tables in Attachment 1-3 compare the NUREG-0654, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," Revision 1, requirements with the current NAPS Emergency Plan and with the changes to the NAPS Emergency Plan proposed in this license amendment request (LAR).

A description and assessment of the proposed changes to the SPS Emergency Plan is provided in Enclosure 2. A marked-up copy and clean copy of the affected pages of the SPS Emergency Plan are included in Attachments 2-1 and 2-2, respectively. The tables in Attachment 2-3 compare the NUREG-0654, Revision 1, requirements with the current SPS Emergency Plan and with the changes to the SPS Emergency Plan proposed in this LAR.

A letter from the Virginia Department of Emergency Management (VDEM) acknowledging and approving the proposed changes is included in Enclosure 3.

The proposed amendment request does not involve a significant hazards consideration as defined in 10 CFR 50.92. The basis for this determination is included in Enclosure 1 for NAPS and Enclosure 2 for SPS.

The proposed change will not result in any significant increase in the amount of effluents that may be released off-site or any significant increase in individual or cumulative occupational radiation exposure. Therefore, the proposed amendment is eligible for categorical exclusion from an environmental assessment as set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment is needed in connection with the approval of the proposed change.

In accordance with 10 CFR 50.90(b)(1), Dominion Energy Virginia is providing a copy of this LAR to the VDEM and Virginia Department of Health.

Dominion Energy Virginia requests NRC approval of the proposed license amendment within one (1) year of the date of this letter with implementation to occur within 180 days of NRC approval.

If you have any questions or require additional information, please contact Mr. Shayan Sinha at (804) 273-4687.

Sincerely,

James E. Holloway
Vice President – Nuclear Engineering & Fleet Support
Dominion Energy Virginia

COMMONWEALTH OF VIRGINIA)
)
COUNTY OF HENRICO)

The foregoing document was acknowledged before me, in and for the County and Commonwealth aforesaid, today by Mr. James E. Holloway, who is Vice President – Nuclear Engineering & Fleet Support, of Virginia Electric and Power Company. He has affirmed before me that he is duly authorized to execute and file the foregoing document in behalf of that company, and that the statements in the document are true to the best of his knowledge and belief.

Acknowledged before me this 7th day of November, 2022.

My Commission Expires: August 31, 2023.

GARY DON MILLER
Notary Public
Commonwealth of Virginia
Reg. # 7629412
My Commission Expires August 31, 2023

Notary Public

Commitments made in this letter: None.

Enclosures:

(1) North Anna Power Station, Units 1 and 2, Discussion and Assessment of Proposed Change
(2) Surry Power Station, Units 1 and 2, Discussion and Assessment of Proposed Change
(3) Letter of Concurrence from the Virginia Department of Emergency Management

Attachments:

1-1 North Anna Power Station, Units 1 and 2, Marked-Up Emergency Plan Pages
1-2 North Anna Power Station, Units 1 and 2, Clean Emergency Plan Pages
1-3 North Anna Power Station, Units 1 and 2, Table B-1 Comparison

2-1 Surry Power Station, Units 1 and 2, Marked-Up Emergency Plan Pages
2-2 Surry Power Station, Units 1 and 2, Clean Emergency Plan Pages
2-3 Surry Power Station, Units 1 and 2, Table B-1 Comparison

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ENCLOSURE 1

North Anna Power Station, Units 1 and 2:

Discussion and Assessment of Proposed Changes

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

Description and Assessment of Proposed Changes

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ATTACHMENTS:

1. Proposed Emergency Plan Sections (Mark-up)
2. Proposed Emergency Plan Sections (Retyped)
3. NUREG-0654 Table B-1 Comparative Chart
4. Off-site Response Organization Concurrence Letter

1.0 SUMMARY DESCRIPTION

In accordance with the provisions of 10 CFR 50.90, Virginia Electric and Power Company (Dominion Energy Virginia) requests Nuclear Regulatory Commission (NRC) approval of changes to the North Anna Power Station (NAPS), Units 1 and 2, Emergency Plan in the form of amendments to Renewed Facility Operating Licenses NPF-4 and NPF-7, respectively. The requested amendments incorporate the following changes to the NAPS Emergency Plan:

1) Extension of facility activation requirements for the Technical Support Center (TSC) and Operational Support Center (OSC) from 60 minutes to 90 minutes, and for the Corporate Emergency Response Center (CERC) from 75 minutes to 90 minutes, following declaration of an emergency event classified as an Alert or higher;

2) Extension of the augmentation time for Emergency Response Organization (ERO) members from 45, 60, and 75 minutes to 90 minutes;

3) Redefinition of 'minimum staff' positions in the Emergency Response Facilities (ERFs) to align with new facility activation criteria;

4) Reorganization of the staffing table based on emergency preparedness (EP) functions to better align to NUREG-0654, Revision 2 [Reference 1], Table B-1 guidance;

5) Reduction in the classification level at which dispatch of Offsite Survey Teams is required from a Site Area Emergency (SAE) to an Alert;

6) Addition of a definition for performance of 'Onsite (out-of-plant) Survey' to describe the area between site buildings and the Protected Area (PA) fence;

7) Addition of a definition for 'facility activation' criteria to align with command-and-control functions in the TSC, OSC, and CERC;

8) Removal of references to chemistry, maintenance, firefighting, first aid/rescue, and site access control and personal accountability functions on-shift from Table 5.1;

9) Removal of the Administrative Support Team, Executive Liaison, Emergency Plan Advisor, and Meteorologist positions from the Emergency Plan;

10) Removal of the list of administrative duties and revision of the Emergency Administrative Director (EAD) position title to Emergency Security Director (ESD);

11) Removal of reference to the Local Media Center (LMC).

Dominion Energy Virginia completed a staffing analysis of on-shift responsibilities resulting from the effects associated with the proposed changes. The proposed changes are based on credit taken for the diverse and redundant nature of the Emergency Core Cooling System (ECCS), described in Section 3.1.2 of this Enclosure, and credit for additional defense-in-depth capabilities for the restoration of safety functions which obviates the need for maintenance activities during the initial response to an event.

In addition, a site-specific procedure analysis, described in Section 3.1.1 of this Enclosure, was completed to determine when activities performed by personnel outside of the Emergency Plan on-shift complement were required in response to adverse conditions as identified in site event

response procedures. The site-specific procedure analysis was used to address the requirements in Regulatory Issue Summary (RIS) 2016-10, "Licensing Amendment Requests for Changes to the Emergency Response Organization Staffing and Augmentation," [Reference 2] for extending augmentation beyond the provisions of NUREG-0654/FEMA-REP-1 (NUREG-0654), Revision 1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," [Reference 3] Table B-1, *Minimum Staffing Requirements for NRC Licensees for Nuclear Power Plant Emergencies*, and the NUREG-0654, Revision 2, [Reference 1] Table B-1, issued in December 2019, and was used to inform the functional analysis of augmented ERO positions based on extended response times. The functional analysis is included in Section 3.2 of this Enclosure.

Revised figures are included in the proposed NAPS Emergency Plan that delineate positions associated with facility activation. This change allows for the transfer of Classification, Notification, Protective Action Recommendation (PAR), and Emergency Exposure functions from the Control Room in advance of 90 minutes when minimum staff positions are met as defined in the proposed Emergency Plan.

The changes in staff augmentation response times and reductions in the number of augmented ERO positions are considered a reduction in Emergency Plan effectiveness as defined in 10 CFR 50.54(q)(1)(iv). In accordance with 10 CFR 50.54(q)(4), changes to a licensee's emergency plan that reduce the effectiveness of the plan may not be implemented without prior NRC approval and are required to be submitted for approval as a license amendment request (LAR) in accordance with 10 CFR 50.90.

2.0 DETAILED DESCRIPTION

2.1 Proposed Changes

Brief descriptions of the proposed NAPS Emergency Plan changes are provided below. The justification for each change is discussed in Section 3.2. The specific wording changes are provided in Attachments 1 and 2 to this Enclosure as marked-up and retyped copies, respectively, of the NAPS Emergency Plan pages.

a. Section 1.0, "Definitions," (1) added definition and criteria for facility activation; and (2) removed references to the LMC.

b. Section 1.1, "Acronyms and Abbreviations," (1) removed LMC; and (2) revised the EAD position title to ESD.

c. Section 2.2, "Emergency Plan," revised to reflect change to facility activation terminology.

d. Section 4.2, "Emergency Classification System," revised to reflect mobilization of offsite monitoring teams at the Alert emergency classification rather than the SAE classification.

e. Section 5.0, "Organizational Control of Emergencies," revised to reflect transition of Station Emergency Manager (SEM) functions by the SEM in the TSC.

f. Section 5.1, "Normal Station Organization," revised to reflect on-shift staffing in accordance with NUREG-0654, Revision 2, [Reference 1] Table B-1, and the proposed changes.

g. Section 5.2, “Emergency Response Organization,” (1) replaced reference to Figure 5.1 with reference to Table 5.1; and (2) revised to reflect on-shift staffing in accordance with NUREG-0654, Revision 2, [Reference 1] Table B-1.

h. Section 5.2, “Emergency Response Organization,” (1) replaced reference to Figure 5.1 with reference to Table 5.1 for on-shift staffing; (2) removed references to performance of non-EP functions on-shift; and (3) removed references to Figure 5.2 which is replaced by separate facility Figures.

i. Section 5.2.1, “Station Emergency Position and Team Descriptions,” revised to remove reference to ‘fully implemented’ as this term is replaced by the facility activation criteria as noted in revised Figures 5.3, 5.4, and 5.5.

j. Section 5.2.1.2, “Emergency Communicator,” revised to reflect TSC staffing and transition of State/local notification functions to the CERC upon activation of that facility.

k. Section 5.2.1.8, “Emergency Administrative Director,” (1) revised the title of this position to ‘Emergency Security Director’; and (2) removed references to administrative activities performed by this position from the Emergency Plan.

l. Section 5.2.1.9, “Radiological Assessment Director,” renumbered section and deleted reference to chemistry sampling as this function is driven by technical specification (TS) requirements.

m. Section 5.2.1.10, “Radiation Protection Supervisor,” revised to remove references to non-EP functions.

n. Section 5.2.1.11, “Operational Support Center Director (OSC Director),” revised to reflect position responsibility for EP-related functions and remove references to specific functions controlled by other licensing processes in accordance with NRC guidance.

o. Section 5.2.1.12, “OSC Support Team,” renumbered section and removed reference to control of Damage Control Teams ‘if activated’ as this criterion is now included in the definition for the facility.

p. Section 5.2.1.13, “Technical Support Team,” renumbered section and revised reference to reflect use of the term ‘activated’.

q. Section 5.2.1.14, “Chemistry Team,” deleted these positions as performance of chemistry activities is governed by site TS requirements.

r. Section 5.2.1.15, “Administrative Support Team,” deleted these positions from the Emergency Plan. These are administrative positions and will be controlled by station Emergency Plan Implementing Procedures (EPIPs).

s. Section 5.2.1.16, “Security Team,” revised to reflect change in title from EAD to ESD.

t. Section 5.2.1.17, “Dose Assessment Team,” renumbered section and added clarification that the dose assessment function transitions from the TSC to the CERC upon activation of the CERC.

u. Section 5.2.1.19, “Evacuation Monitoring Team,” renumbered section and replaced ‘activated’ with ‘staffed’.

v. Section 5.2.1.20, “In-Plant Monitoring Team,” renumbered section and revised to remove references to non-EP functions.

w. Section 5.2.1.21, “Sample Analysis Team,” deleted section as these activities are governed outside the Emergency Plan.

x. Section 5.2.1.22, “Personnel Monitoring and Decontamination Team,” renumbered section and revised to remove references to non-EP functions.

y. Section 5.2.1.23, “Onsite (Out of Plant) Monitoring Team,” renumbered section and revised to reflect the change in the area surveyed from the site boundary to the PA.

z. Section 5.2.1.24, “Fire Brigade,” removed reference to this function as these activities are governed by the site Fire Protection Plan and operating procedures.

aa. Section 5.2.1.25, “First Aid Team,” deleted this reference as this is not an EP function and is managed under the site Fire Protection Program.

bb. Section 5.2.1.27, “Search and Rescue Team,” deleted this reference as this is not an EP function and is managed under the site Fire Protection procedures.

cc. Section 5.2.2, “Corporate Emergency Position and Team Descriptions,” (1) revised to reflect changes associated with facility activation in lieu of ‘fully implemented’ verbiage; (2) changed reference to revised Figure for CERC organizational structure; and (3) revised wording associated with JIC staffing rather than activation as the JIC does not perform command-and-control functions.

dd. Section 5.2.2.1, “Corporate Response Manager,” revised to remove references to positions providing administrative functions. These positions, if needed, will be contained in site EPIPs.

ee. Section 5.2.2.2, “Technical Support Manager,” revised to clarify position description related to performance of the command-and-control responsibilities of State/local notification and PAR development.

ff. Section 5.2.2.6, “Executive Liaison,” removed this position as it performs administrative functions. This position, if needed, will be contained in site EPIPs.

gg. Section 5.2.2.7, “Emergency Plan Advisor,” removed this position as it performs a support function only. This position, if needed, will be contained in site EPIPs.

hh. Section 5.2.2.11, “Accident Assessment Team,” renumbered section and revised reference to applicable section for offsite monitoring teams associated with the proposed change.

ii. Section 5.2.2.12, “Resource Support Team,” deleted reference to Company Meteorologist. MET information is readily available to ERO members via plant computer and environmental monitoring, therefore supplemental staffing in this area in no longer required.

jj. Section 5.2.2.14, “Joint Information Center Support Team,” renumbered and revised to reflect staffing of the facility.

kk. Section 5.3, “Augmentation of Emergency Response Organization,” (1) revised to reflect 90-minute activation for the TSC, OSC, and CERC; (2) added references to revised organizational charts; and (3) added a diagram outlining transfer of command-and-control functions.

ll. Section 5.3.1.5, “Release of Information to News Media,” (1) revised to replace ‘activated’ with ‘staffed’ for the JIC; and (2) removed reference to the LMC.

mm. Section 5.4.6, “Counties and Cities Within the Fifty Mile Ingestion Pathway Zone,” revised to reflect numbering changes on applicable Figures.

nn. Table 5.1, “Minimum Staffing Requirements for Emergencies,” revised to reflect on-shift and augmented staffing in accordance with NUREG-0654, Revision 2, [Reference 1] Table B-1, and staffing positions required for facility activation.

oo. Table 5.2, “Emergency and Recovery Corporate Response Required for Nuclear Station Emergencies,” deleted table and incorporated this information into Table 5.1.

pp. Figure 5.1, “Station Emergency Organization Prior to Augmentation,” deleted figure. This figure duplicated information included in the revised Table 5.1, as well as revised Figures 5.3, 5.4, and 5.5.

qq. Figure 5.2, “Station Emergency Organization Following Augmentation,” deleted. This figure duplicated information included in the revised Table 5.1, as well as revised Figures 5.3, 5.4, and 5.5.

rr. Figure 5.3, “Station to Support Group Interface Prior to Augmentation of the Emergency Organization,” renumbered section and revised to reflect changes in associated figures.

ss. Figure 5.4, “Station to Support Group Interface Following CERC Activation,” renumbered and revised to reflect new numbering, removal of administrative/support positions, and new facility organization chart numbering.

tt. Figure 5.5.a, “Technical Support Center Organization,” renumbered section and revised to reflect proposed staffing and positions required for facility activation.

uu. Figure 5.5.b, “Operational Support Center Organization,” renumbered section and revised to reflect proposed staffing and positions required for facility activation.

vv. Figure 5.5.c, “Radiation Protection Organization,” deleted figure. Radiological Protection (RP) responders incorporated into TSC, OSC, and CERC figures to better reflect response in each facility.

ww. Figure 5.5.d, “Corporate Emergency Response Center Organization,” renumbered section and revised to reflect proposed staffing and positions required for facility activation.

xx. Section 6.3, “Protective Actions,” reworded to reflect transfer of the function to the CERC upon activation of that facility.

yy. Section 6.4.2, “First Aid and Decontamination,” removed references to First Aid team Member training as this information is governed by processes outside the Emergency Plan.

zz. Section 7.0, “Emergency Facilities and Equipment,” removed reference to the LMC.

aaa. Section 7.1.5, “Joint Information Center and Local Media Center,” revised to remove reference to the LMC.

bbb. Section 7.3.6, “Post Accident Sampling,” removed as chemistry sampling requirements are maintained in site TSs.

ccc. Table 7.1, “ERF Communications,” (1) removed reference to the LMC; and (2) added reference to Near-Site Location for Offsite Agency Coordination.

ddd. Table 8.1, “Emergency Preparedness Training,” removed references to positions being deleted.

eee. Table 8.1, “Scope of Training Footnotes,” revised to remove references to training not related to the performance of EP functions and use of facility activation criteria.

2.2 Reason for the Proposed Changes

1) *Extension of facility activation requirements for the TSC and OSC from 60 minutes to 90 minutes, and for the CERC from 75 minutes to 90 minutes, following declaration of an emergency event classified as an Alert or higher;*

The proposed changes revise the NAPS license by extending augmentation response timeframes for the augmented ERO. The additional time allows personnel previously precluded from assignment to the ERO as immediate responders due to significant commute times to fill augmented ERO positions. Extending augmentation times and reducing the number of augmented ERO positions increases the number of personnel eligible for assignment and increases the availability of expertise to the ERO overall. The proposed change will not be applied as permission to delay response to an event.

2) *Extension of the augmentation time for Emergency Response Organization (ERO) members from 45, 60, and 75 minutes to 90 minutes;*

To establish the basis for a 90-minute specific response time for NAPS augmented resources, an analysis of site procedures and their bases was completed. The study evaluated event diagnostic/troubleshooting activities that would need to be performed by on-shift resources to address loss of critical safety functions for the first 90 minutes after an event. The analysis evaluated equipment failures to establish the sequence of actions taken in scenarios where Emergency Operating Procedure (EOP) and Abnormal Operating Procedure (AOP) actions alone were not successful in the first 90 minutes after event initiation. Details on the results of this analysis are included in Section 3.1.1 of this Enclosure.

The diverse and redundant nature of the ECCS obviates the need for maintenance activities as part of the initial response to an event. As a result, the proposed change removes references to performance of maintenance activities on-shift. Details associated with the ECCS are addressed in Section 3.1.2 of this Enclosure.

Crediting technological advances, added Beyond Design Basis (BDB) accident mitigation capability, and defense-in-depth capabilities to restore safety functions including: the use of installed safety systems for each unit, the use of non-safety systems, the ability to utilize systems from the unaffected unit, and applicable BDB strategies, ensures actions can be taken by on-shift resources to initiate troubleshooting and repairs of safety functions. Therefore, extending the augmentation response times for TSC, OSC, and CERC positions to 90 minutes are practical and prudent alternate methods of ensuring effective and timely emergency response.

3) *Redefinition of 'minimum staff' positions in the Emergency response facilities (ERFs) to align with new facility activation criteria;*

The TSC, OSC, and CERC positions of Emergency Administrative Director, Emergency Plan Advisor, Material Management Support Coordinator, Safety and Loss Prevention Coordinator, Chemistry Team, and Executive Liaison, and the TSC, OSC, and CERC Administrative Support positions do not perform functions required to implement the Emergency Plan. As a result, Dominion Energy Virginia proposes to remove these positions from the NAPS Emergency Plan and maintain administrative positions in the site implementing procedures as needed.

Details associated with the revised ERO and key responsibilities and tasks as identified in NUREG-0654, Revision 1, [Reference 3] and NUREG-0654, Revision 2, [Reference 1] Table B-1, are included in Section 3.2 of this Enclosure.

4) *Reorganization of the staffing table based on emergency preparedness (EP) functions to better align to NUREG-0654, Revision 2 [Reference 1], Table B-1 guidance;*

NUREG-0654, Revision 2, [Reference 1] Table B-1, placed greater focus on EP functions performed by Operations personnel. In the proposed change, only Operations personnel performing the EP functions of Classification, Notification, Core Damage Assessment (CDA), and on-shift ERO oversight are in included in Table 5-1. On-shift staffing requirements for Operations personnel is specified in the NAPS TSs.

Additionally, the proposed change extends the facility activation timeframe for the TSC, OSC, and CERC to 90 minutes, requiring performance of command-and-control activities by Control Room personnel for an additional 30 minutes. The process for transfer of command-and-control functions is outlined in Section B of the proposed Emergency Plan.

5) *Addition of a definition for 'facility activation' criteria to align with command-and-control functions in the Technical Support Center (TSC), Operational Support Center (OSC), and Corporate Emergency Response Center (CERC).*

The proposed change revises the use of the term 'activated' as it relates to ERF readiness to accept emergency response functions and standardizes the criteria to better align with NRC guidance. The proposed change defines facility activation criteria to clearly identify the positions which must be filled in the TSC, OSC, and CERC such that transfer of command-and-control functions (Classification, Notification, PARs, Dose Assessment, and Emergency Exposure Authorization) from the Control Room can be completed and on-shift personnel can be relieved of these duties. For the OSC, 'activated' corresponds to the position required to transfer oversight of in-plant teams from the Control Room. The term 'staffed' is applied to the JIC which does not have responsibility for any command-and-control actions. Revised figures have been added to the NAPS Emergency Plan that delineate positions associated with facility activation. This change allows for the transfer of command-and-control functions from the Control Room in advance of 90 minutes when minimum staff positions are filled.

6) *Reduction of the classification level at which dispatch of Offsite Survey Teams is required from a Site Area Emergency (SAE) to an Alert.*

The current Plan requires staffing of personnel for one (1) Offsite Monitoring Team and one (1) Onsite (out-of-plant) Monitoring Team at 45 minutes and a second Offsite Monitoring Team at 60 minutes following the declaration of an emergency event classified as an Alert or higher. Dispatch of the Offsite Survey Team is required at the SAE or higher classification. The proposed change would dispatch the teams at an Alert or higher classification, versus SAE, and extend the requirement for the dispatch of the Offsite Monitoring Teams from 60 minutes to 90 minutes following the declaration of an emergency event classified as an Alert or higher.

7) *Addition of a definition for performance of 'Onsite (out-of-plant) Survey' to describe the area between site buildings and the Protected Area (PA) fence;*

The proposed change redefines the area for conducting of Onsite (out-of-plant) Surveys such that it describes the area between plant buildings and the PA fence, rather than the site boundary. This revision aligns the Onsite (out-of-plant) and In-plant functions allowing for more efficient use of RP resources and leveraging the smaller size of the PA footprint as compared to the OCA. The proposed change continues to provide for two (2) RP Technicians on-shift for completion of radiological surveys utilizing plant monitors or by conducting a survey within a short walking distance in support of release determination.

8) *Removal of references to chemistry, maintenance, firefighting, first aid/rescue, and site access control and personal accountability functions on-shift from Table 5.1;*

The proposed change removes references to non-EP functions. These positions are governed

and maintained by TSs, the Fire Protection Plan, and other site procedures as needed.

9) *Removal of the Administrative Support Team, Executive Liaison, Emergency Plan Advisor, and Meteorologist positions from the Emergency Plan;*

   These positions are generally administrative in nature and do not perform any EP functions and will, therefore, be maintained in site procedures as needed. The use of improved technology has eliminated the need for a dedicated Meteorologist as the information once provided by this position is now readily available on site computers.

10) *Removal of the list of administrative duties and revision of the Emergency Administrative Director (EAD) position title to Emergency Security Director (ESD);*

    Revision of the position's title provides better alignment between the title and the security responsibilities currently performed by the position.

11) *Removal of reference to the Local Media Center (LMC).*

    The location will continue to be available as the Near-Site Location for Offsite Agency Coordination, as described in Section 7.1.7 of the NAPS Emergency Plan, and public information will continue to be issued from the JIC.

2.3 NAPS Emergency Plan Background

The NAPS Emergency Plan, Revision 0, was originally reviewed and approved by the NRC as meeting the requirements established in NUREG-0654, Revision 1, [Reference 3] as documented by NRC Safety Evaluation Report (SER), dated May 10, 1983. [Reference 4]

The NAPS Emergency Plan, Revision 18, was reviewed and approved for on-shift and augmented staffing by the NRC as documented by NRC SER, dated December 13, 1995, [Reference 5] and implemented in Table 5.1, *Minimum Staffing Requirements for Emergencies*, of the NAPS Emergency Plan. This table provided a commitment to meet the guidance for on-shift staffing and augmentation goals including 45-minute and 60-minute responders established in Table B-1 of NUREG-0654, Revision 1. [Reference 3] Revision 18 also established a 60-minute activation goal for the Local Emergency Operations Facility (LEOF), OSC, and TSC as part of the approved Emergency Plan.

Revision 48 of the NAPS Emergency Plan implemented a common EOF for NAPS and Surry Power Station (SPS) as was approved by NRC SER, dated February 27, 2019. [Reference 6] This revision also established the CERC activation time of 75 minutes providing for a common response time for the two (2) Virginia based Dominion nuclear sites.

NAPS has five (5) ERFs augmenting the on-shift staff:

1) the Technical Support Center (TSC),
2) the Operational Support Center (OSC),
3) the Corporate Emergency Response Center (CERC),
4) the Joint Information Center (JIC)
5) and the Local Media Center (LMC).

The proposed change removes the reference to the LMC as an ERF. The CERC has been found to be a more effective location for issuance of public information.

NAPS uses four (4) standard levels of emergency classification as described in NUREG-0654, Revision 1 [Reference 3]. During an emergency, the Shift Manager initially assumes emergency response command-and-control until relieved by the SEM. At the Alert or higher emergency classification levels, the TSC, OSC, and CERC are activated. The JIC is activated in accordance with the Commonwealth of Virginia Radiological Emergency Plan.

3.0 TECHNICAL EVALUATION

3.1 Technical Analysis

This section discusses technological changes in plant systems, dose assessment, procedures, and training which have been completed to better support on-shift functions and ease operator burden. An on-shift analysis applying the methodology outlined in NRC endorsed guidance Nuclear Energy Institute (NEI) 10-05, Revision 0, “Assessment of On-Shift Emergency Response Organization Staffing and Capabilities,” [Reference 7] determined that the proposed changes did not result in conflicting duties for on-shift personnel.

3.1.1 Performance-based Procedure Analysis

Emergency response and supporting procedures for NAPS were developed in accordance with NUREG-0737, “Clarification of TMI Action Plan Requirements,” [Reference 8] and Supplement 1 to NUREG-0737, “Clarification of TMI Action Plan Requirements: Requirements for Emergency Response Capability.” [Reference 9]

The required analysis of transients and accidents for the development of emergency procedures discussed in NUREG-0737 [References 8, 9] included a needs analysis based on events contained in the Final Safety Analysis Report (FSAR), loss of instrumentation busses, and natural phenomena such as earthquakes, floods, and tornadoes. Additionally, NUREG-0737 identified the need to consider the following events involving multiple failures:

- Multiple tube failures in a single steam generator and tube rupture in more than one steam generator;
- Failure of Main and Auxiliary Feedwater;
- Failure of high-pressure reactor coolant makeup system;

- An Anticipated Transient Without Scram (ATWS) following a loss of offsite power (LOOP), stuck open relief valve or safety relief valve, or loss of main feedwater; and
- Operator errors of omission or commission.

The analyses were directed to be conducted far enough into the event to assure that all relevant thermal/hydraulic/neutronic phenomena are identified. The analyses were then used to develop guidelines that ensure an appropriate transition through procedures and were subsequently submitted to the NRC for approval. Since initial design approvals for existing sites, improvements have been made to emergency procedures to address other industry issues as they emerge, such as: Station Blackout (SBO), Interfacing System Loss of Coolant Accidents (LOCAs), ECCS Sump Screen Blockage, and Security Design Basis Threat (DBT). Additionally, Severe Accident Management Guidelines (SAMG), Loss of Large Area (LOLA) guidelines, and Diverse and Flexible Coping Strategies (FLEX) guidelines have been developed to provide additional defense-in-depth strategies for response to BDB events. These improvements have been incorporated into NAPS procedures to ensure that plant safety is maintained, even in multiple failure conditions, by operator response using a methodical, symptom-based approach resulting in stabilization of the plant without reliance on external or augmented resources.

In RIS 2016-10, [Reference 2] the NRC documented the need to conduct a detailed review of event response procedures to consider any further augmentation relief under, "*Considerations of the Review Process for Proposed Extension of NUREG-0654, Table B-1, 60-minute ERO Augmentation Times to 90 Minutes.*" This section provides the following guidance on the extension of augmentation times for responders fulfilling Technical Support functions;

> *"Per the guidance of NUREG-0654, Table B-1, "Electrical" and "Mechanical" expertise should be provided by two 60-minute responders under the "Technical Support" major task. To adequately justify an extension of these responders, the licensee should show that on-shift positions are capable of filling these roles during the 90-minute period after an emergency declaration. This will require a review of site procedures to identify the technical tasks requiring electrical and mechanical expertise that must be performed within the first 90 minutes of an emergency. The licensee should then show that there are on-shift positions with the necessary expertise to perform the identified technical support functions, and that such performance will not prevent the timely performance of their other assigned functions, as specified in the Emergency Plan. The justification should identify procedure, training and information technology advances made since the implementation of NUREG-0654 that facilitate technical support assessments by on-shift personnel or obviate the need for such assessments within 90 minutes of an emergency declaration. Additionally, the change justification should address the ability of on-shift positions to perform troubleshooting activities without interfering with their primary emergency duties (e.g., on-shift electrical or mechanical maintenance personnel with supervisory personnel to provide oversight).*

A performance-based analysis of site procedures and their bases was completed to provide the technical justification described in RIS 2016-10 [Reference 2]. This analysis included NAPS emergency response and supporting procedures to determine if additional personnel resources, beyond the proposed on-shift staff, were required to support any plant and radiological response

actions during the first 90 minutes after declaration of an emergency event classified as an Alert or higher.

The procedure analysis demonstrated that on-shift personnel will be able to perform required troubleshooting activities for the first 90 minutes and that there were no technical support activities requiring additional mechanical or electrical expertise needed during this timeframe. In addition, on-shift personnel are trained and provided the necessary procedural guidance to leverage system defense-in-depth capability to restore safety functions including the use of installed safety systems for each unit, the use of non-safety systems, the ability to utilize systems from the unaffected unit, and applicable BDB strategies and equipment to initiate restoration of Subcriticality, Core Cooling, Heat Sink, Containment Integrity and Inventory Control safety functions. The ability to implement response actions using FLEX Strategies during the first 90 minutes effectively protects public health and safety. As a result, performance of event response actions by on-shift personnel for the first 90 minutes is not adversely impacted by the proposed change.

3.1.2 Emergency Core Cooling System (ECCS)

Chapter 3 of the NAPS Updated Final Safety Analysis Report (UFSAR) [Reference 10] states that NAPS Units 1 and 2 were designed in conformance with the Atomic Energy Commission (AEC) *General Design Criteria for Nuclear Power Plants,* published in 1966. Additionally, Chapter 3 of the NAPS UFSAR discusses how NAPS Units 1 and 2 conform to 10 CFR 50, Appendix A, *General Design Criteria for Nuclear Power*, published in 1971. This includes conformance with General Design Criterion (GDC)-35, which states:

> *A system to provide abundant emergency core cooling shall be provided. The system safety function shall be to transfer heat from the reactor core following any loss of reactor coolant at a rate such that (1) fuel and clad damage that could interfere with continued effective core cooling is prevented, and (2) clad metal-water reaction is limited to negligible amounts.*
>
> *Suitable redundancy in components and features, and suitable interconnections, leak detection, isolation, and containment capabilities shall be provided to ensure that for onsite electric power system operation (assuming offsite power is not available) and for offsite electric power system operation (assuming onsite power is not available) the system safety function can be accomplished, assuming a single failure.*

The NAPS ECCS consists of a passive system of accumulators that do not require any external signals or source of power for their operation to cope with the short-term cooling requirements of large reactor coolant pipe breaks. Two (2) independent pumping systems, each capable of the required emergency cooling, are provided for small-break protection and to keep the core submerged after the accumulators have discharged following a large break. Adequate design provisions ensure the performance of the required safety functions even with the loss of a single

component, assuming the electric power is available from either the offsite or the onsite electric power sources.

Relative to Emergency Power for the ECCS, Section 3.1.13 of the NAPS UFSAR [Reference 10] describes the NAPS electrical power system conformance with the 1971 GDC-17 which states:

> *An onsite electric power system and an offsite electric power system shall be provided to permit functioning of structures, systems, and components important to safety. The safety function for each system (assuming the other system is not functioning) shall be to provide sufficient capacity and capability to assure that (1) specified acceptable fuel design limits and design conditions of the reactor coolant pressure boundary are not exceeded as a result of anticipated operational occurrences and (2) the core is cooled, and containment integrity and other vital functions are maintained in the event of postulated accidents.*
>
> *The onsite electric power supplies, including the batteries, and the onsite electric distribution system, shall have sufficient independence, redundancy, and testability to perform their safety functions assuming a single failure.*
>
> *Electric power from the transmission network to the onsite electric distribution system shall be supplied by two physically independent circuits (not necessarily on separate rights of way) designed and located so as to minimize to the extent practical the likelihood of their simultaneous failure under operating and postulated accident and environmental conditions. A switchyard common to both circuits is acceptable. Each of these circuits shall be designed to be available in sufficient time following a loss of all onsite alternating current power supplies and the other offsite electric power circuit, to assure that specified acceptable fuel design limits and design conditions of the reactor coolant pressure boundary are not exceeded. One of these circuits shall be designed to be available within a few seconds following a loss-of-coolant accident to assure that core cooling, containment integrity, and other vital safety functions are maintained.*
>
> *Provisions shall be included to minimize the probability of losing electric power from any of the remaining supplies as a result of, or coincident with, the loss of power generated by the nuclear power unit, the loss of power from the transmission network, or the loss of power from the onsite electric power supplies.*

NAPS employs onsite and offsite power systems that can independently supply the electric power required for the operation of safety-related systems. This capability is maintained even with the failure of any single active component in either the onsite or offsite system. In the unlikely event of total loss of offsite power, the emergency buses are energized by the emergency diesel generators (EDGs). Four (4) EDGs are available for two (2) units. Two (2) diesels are assigned to Unit 1 and two (2) are assigned to Unit 2. There are (2) two redundant buses in each unit serving engineered safety features (ESFs); these buses ensure operation of minimum ESF equipment under all conditions, including a failure of a single component in the onsite power system.

Normal ESF operating status and deviations from this status to include the ECCS and associated power sources is controlled by the NAPS TSs.

System performance is tracked and trended by the site and demonstrates a high degree of reliability. System health requirements are maintained, based on NRC Performance Indicators for system availability and functional failures which are an integral part of the Reactor Oversight Process (ROP). Additionally, reliability is driven by Maintenance Rule performance criteria.

Crediting the robust ECCS capability and protection against single point failures provides the basis for removal of electrical and mechanical maintenance personnel from on-shift.

3.1.3 Plant Computer System

When the NAPS Emergency Plan, Revision 18, was approved in 1996, the site utilized a P250 plant computer and Emergency Response Facility Computer System (ERFCS) which implemented NUREG-0696, “Functional Criteria for Emergency Response Facilities,” [Reference 11] and NUREG-0737 [References 8, 9] requirements. The ERFCS provided plant monitoring, data acquisition, and critical plant data in the form of real-time displays in the Control Room, TSC, LEOF, CERC and Corporate Emergency Operations Facility (CEOF).

In 2002, these systems were replaced with the Plant Computer System (PCS), which distributed information via Local Area Network (LAN) and Wide Area Network (WAN), making information more readily available.

Benefits of the upgraded system include:

- Graphing and trending capabilities
- Provision for historical data recording and retrieval
- Interfaces with equipment and other data sources such as ERDS and SPDS
- Design provides for a high degree of reliability through use of redundant system processes

The Unit 1 and Unit 2 PCS have uninterruptable power supplies (UPS) installed to ensure the computer system availability during a power outage.

3.1.4 Dose Assessment

An automatic data feed from the PCS to the dose projection software is normally used to auto populate the radiological and meteorological data for performing dose projections. In addition, specifically designed displays on the PCS have been developed for obtaining and monitoring the necessary plant, radiological effluent, area radiation monitor, and meteorological information for assessing release status and for manual entry of relevant data for performing dose projections.

<u>Previous on-shift dose assessment</u>

The previous dose assessment capability was based on the VAX MIDAS dose assessment software implemented in 1990. VAX MIDAS calculated dose rates and integrated dose for whole body and thyroid based on plume shine, ground shine, and inhalation for the ingestion pathway. The dose calculation utilized source term values for Xe-133 and I-131 and accounted for decay time from reactor trip and transit time. The VAX MIDAS dose model utilized two dispersion models. One model was based on a straight line, Gaussian plume and the other used a more

detailed segmented plume and included the effects of rainout. This software utilized automatic input of basic meteorological data and radiological data from the PCS or manual input by the user. Additional data was input by the user to complete the dose assessment calculation. The VAX MIDAS ran on dedicated equipment located in the HP office, TSC, LEOF, and Corporate EOF.

Current on-shift dose assessment

In 2006, NAPS implemented PC MIDAS, which is the current dose assessment software. The PC MIDAS dose calculation software has the same dose projection capabilities as VAX MIDAS with a larger isotopic library, an enhanced user interface, and additional output reports. The PC MIDAS software is provided on dedicated workstations in the HP Count Room and in the ERFs. The PC MIDAS software is also loaded on other selected workstations in the ERFs and in the Control Room in the event one or more of the dedicated workstations are unavailable. In addition, the PC MIDAS software can be accessed from any computer that has been loaded with the PC MIDAS software. Meteorological and radiation monitor data is automatically input from the PCS or input manually if the data is not available from the plant computer or is suspect. If manual entry of data is required, then this data can be readily obtained from specialized MIDAS displays on the plant computer. Event Tree selections utilizing drop down menus allow the user to select or modify the mix of isotopes being released from the plant based on selections that address plant conditions and mitigating systems. A user aid is provided to support quick selection of items in the drop-down menus. This dose assessment process is utilized by on-shift and augmented responders. The automated input of meteorological and radiological data into the PC MIDAS software in conjunction with the menu driven data input methodology and supporting job aid supports performance of timely and accurate dose projections by the on-shift and augmented dose assessors.

3.1.5 Procedure Improvements

Emergency Operating Procedures (EOPs) / Abnormal Operating Procedures (AOPs)

Since the original emergency plan approval, the NAPS EOPs have been improved through internal operating experience and industry initiatives. Current EOPs and AOPs use a symptom-based approach that demands less assessment and interpretation of plant conditions by the operating crews. The EOPs and AOPs interface with the PCS to allow for electronic monitoring of Critical Safety Function Status Trees (CSFSTs) which graphically displays plant conditions relative to limits or required actions and provides a recommendation regarding which EOP applies. Overall, the improvements made to EOP and AOP procedures greatly reduces the operator’s reliance on the ERO during the initial phases of any event.

Emergency Plan Implementation Procedures (EPIPs)

In 2008, NAPS updated the classification methodology to NEI 99-01, Revision 4. [Reference 12] Modification of these EALs was approved by the NRC via letters dated January 26, 2011 [Reference 13] and September 25, 2013 [Reference 14]. NEI 99-01, Revision 6, [Reference 15] EALs were approved by the NRC via letter dated December 31, 2019. [Reference 16] NAPS EALs now incorporate guidance that has simplified the classification process, including the use of an

overview matrix of EAL initiating conditions and threshold values that streamlines the process of evaluating EALs against plant conditions, allowing the on-shift operators to focus on event mitigating actions without the aid of the ERO during the initial phases of any event.

3.1.6 Training Improvements

Operations Training

Training is used to strategically drive and sustain improved performance at NAPS. Training is administered through the application of the Systematic Approach to Training (SAT) to ensure that accredited training is conducted to the industry-accepted standards in accordance with INPO ACAD-2-001, “The Objectives and Criteria for Accreditation of Training in the Nuclear Power Industry”.

A dynamic reference plant simulator is used during Operations Training to provide hands-on experience and practice in the operation of the nuclear plant during normal, abnormal, and emergency plant conditions. The site training procedures describe the conduct of crew-specific simulator training. Evaluation scenarios are designed to be realistic and provide an opportunity for performance evaluation during a wide range of plant operating conditions, including emergency conditions that require implementation of the station’s Emergency Plan. The proficiency of the Control Room team is evaluated in the areas of critical task performance, prioritization of activities, communications, accident mitigation, event classification, teamwork, and communications.

Shift Technical Advisor (STA) Training

The Shift Technical Advisor (STA) training program was developed to train the STA as an advisor to the Control Room team in accordance NUREG-0737 [Reference 8] guidelines. In 1990, INPO developed additional training guidelines as detailed in INPO 90-003, “Guidelines for Training and Qualifications of Shift Technical Advisors.” In 2014, INPO issued updated STA Training Guidance, INPO ACAD 14-002, “Guidelines for Training and Qualifications of Shift Technical Advisors,” which incorporated industry experience and addressed the STA role in BDB strategies. The STA performs independent assessments of plant parameters, monitors status trees, provides recommendations on appropriate corrective actions to restore plant parameters to acceptable values, and assesses whether core damage has occurred or appears imminent. The STA also assists the SM with Operability, Risk, and Reportability determinations.

3.1.7 Technical Summary

By crediting the diverse and redundant ECCS design, defense-in-depth capability through use of non-safety systems and systems from the unaffected unit, BDB strategies, as well as the results of the PBP Analysis of troubleshooting and repair/corrective action activities it is demonstrated that the proposed change is a reasonable and prudent means to ensure no degradation or loss of function results from the extension of augmented response times to 90 minutes. Additionally, improvements in dose assessment software allow for the dedicated on-shift dose assessor to

determine the impacts of offsite releases more efficiently. This, combined with the continued ability to determine dose based on survey data, ensures that there is no degradation or loss of dose assessment function resulting from the proposed change.

3.2 Functional Analysis

This analysis evaluates the effect of extending the augmentation times on the ability of the on-shift staff to perform the major tasks for the Major Functional Areas of the NAPS Emergency Plan. The analysis demonstrates that no degradation or loss of function would occur as a result of the proposed change.

The following is the result of the functional analysis performed for the Major Functional Areas as described in NUREG-0654, Revision 1, [Reference 3] Table B-1, as well as the NUREG-0654, Revision 2, [Reference 1] Table B-1. In general, the analysis is organized to provide details for each functional area as follows:

A. NAPS Emergency Plan, Revision 18,
B. the current NAPS Emergency Plan, and
C. the proposed NAPS Emergency Plan.

3.2.1 Plant Operations and Assessment of Operational Aspects

NUREG-0654, Revision 1, [Reference 3] assumes the Major Functional Area of *Plant Operations and Assessment of Operational Aspects* is performed by on-shift staff throughout the emergency while NUREG-0654, Revision 2 [Reference 1], placed greater focus on EP functions performed by Operations personnel. The *Plant Operations and Assessment of Operational Aspects* Major Functional Area in Revision 1, Table B-1 [Reference 3] was replaced with the *Command and Control* and *Emergency Classifications* EP Functions in the revised Table B-1 in Revision 2.

In the proposed change, only Operations personnel performing EP functions of Classification, Notification, CDA, and on-shift ERO oversight are included in Table 5.1. On-shift staffing of Operations personnel is maintained under documents outside of the Emergency Plan. This change is aligned with the NUREG-0654, Revision 2, [Reference 1] Table B-1, as noted in Attachment 3, “Table B-1 Comparative Chart”.

3.2.2 Emergency Direction and Control (Command and Control, Emergency Classification)

NUREG-0654, Revision 1, [Reference 3] guidance indicates that the on-shift Emergency Coordinator assumes this function as a collateral duty where responsibility for overall direction of facility response may be transferred when ERFs are activated. NUREG-0654, Revision 2, [Reference 1] Table B-1, identifies a position responsible for overall command-and-control of the ERO, EAL approval, and authorization of personnel dose extensions, as well as a position responsible for evaluation of plant conditions and classification recommendations as an ancillary duty.

A. In Revision 18 of the NAPS Emergency Plan, the Shift Supervisor would assume the duties of SEM and would be responsible for emergency response efforts until relieved, in accordance with station procedures. A goal of 60 minutes for activation of the LEOF, OSC, and TSC was included in this revision. In Revision 28 of the NAPS Emergency Plan, the Shift Manager (SM) position was added to the on-shift staff to better support performance of timely event classification. Revision 48 of the NAPS Emergency Plan implemented the use of the CERC as a common emergency operations facility for NAPS and SPS. This change was approved in an NRC SER, dated February 27, 2019. [Reference 6] This change maintained the 60-minute activation time for the TSC and OSC and extended the activation time requirements for the CERC from 60 minutes to 75 minutes.

B. The current NAPS Emergency Plan maintains the Revision 48 augmentation times and transition of event responsibilities from the Control Room to the TSC and subsequently to the CERC.

C. The proposed change maintains event classification as a function of the SM/SEM, extends TSC and OSC activation time from 60 minutes to 90 minutes and extends activation of the CERC from 75 minutes to 90 minutes after declaration of an emergency event classified as an Alert or higher. On-shift staffing for SROs includes a third SRO who is SM/SEM qualified. This individual is not included in the 10 CFR 50.54(m)(2)(i) requirement and is a resource continuously available for oversight and direction of emergency response.

Classification

The proposed change extends the timeframe during which event classification is performed by the SM/SEM by 30 minutes. The procedure analysis demonstrated that oversight of the plant is maintained by the two (2) Unit Shift Supervisors, allowing the SM/SEM to maintain focus on event classification. Additionally, the proposed change maintains the STA position for performance of the CDA function and providing support to the SM/SEM for performance of the classification function. The availability of Unit Shift Supervisors and the STA position provides the needed support to allow the SM/SEM to perform the classification function for the first 90 minutes after an event without conflicts. Upon activation of the TSC, the SEM in that facility relieves the SM/SEM of the Classification function.

Command-and-Control

The proposed change impacts the command-and-control function in that it adds a definition for ‘facility activation’ and extends for 30 minutes the timeframe during which responsibility for oversight of on-shift ERO and event command-and-control functions, including PAR development and authorization of personnel dose extensions, is performed by the SM/SEM.

On-shift ERO oversight activity is limited to two (2) communicators in the Control Room, two (2) RP Technicians in the RP office and a third RP Technician assigned to perform the dose assessment function. These positions are readily available to the SM/SEM such that extension of augmented response times by 30 minutes for TSC and OSC personnel

responsible for ERO oversight does not result in conflicting duties for the on-shift SM/SEM.

Upon activation of the TSC, OSC, and CERC at the Alert or higher classification, State/local Notification, PAR and Dose Assessment functions transfer from to the Control Room and the CERC while event Classification, Federal Notification, and Emergency Exposure Authorization functions transfer from the Control Room to the TSC. Responsibility for oversight of the ERO in the plant transitions from the Control Room to the OSC. As noted in the February 27, 2019, NRC SER [Reference 6] the TSC is staffed to allow for transfer of State/local Communications and PARs either directly from the Control Room, or from the CERC should the CERC become unavailable during an event.

The proposed change defines 'facility activation' and clearly identifies the positions which must be filled in the TSC, OSC, and CERC so that transfer of command-and-control functions (Classification, Notification, PAR, Dose Assessment, Emergency Exposure Authorization) from the Control Room can be completed and on-shift personnel can be relieved of these duties. For the OSC, 'activated' corresponds to the OSC Director position that is required to transfer oversight of on-shift ERO from the Control Room. The proposed change also replaces 'activated' for the JIC with 'staffed' as there are no command-and-control functions associated with these facilities.

The proposed definition for 'facility activation' is based on responder availability to perform response actions in each facility and provides the following required minimum staff positions associated with command-and-control as noted in revised Figures 5.1, 5.2, and 5.3:

- Station Emergency Manager (TSC)
- Emergency Operations Director (TSC)
- Radiological Assessment Director (TSC)
- Dose Assessment Team Leader (TSC)
- Reactor Engineer (TSC)
- NRC Emergency Communicator (TSC)
- State/local Communicator (TSC)
- OSC Director (OSC)
- Technical Support Manager (CERC)
- Radiological Assessment Coordinator (CERC)
- Operational Support Coordinator (CERC)
- Dose Assessor (CERC)
- State/local Communicator (CERC)

This change allows for the transfer of command-and-control functions from the Control Room in advance of 90 minutes when minimum staff positions are filled. The availability of the on-shift dose assessor to support PAR and exposure control and the limited number of positions requiring oversight enable performance of the command-and-control function by the SM/SEM for the initial 90 minutes after an event. This definition of 'facility activation' continues to be aligned with NSIR/DPR-ISG-01 guidance. [Reference 17]

3.2.3 Notification/Communication Function

Per NUREG-0654, Revision 1, [Reference 3] the *Notification/Communication* Major Functional Area included the Major Task to notify licensee, State, local and Federal personnel and maintain communications. NUREG-0654, Revision 2, [Reference 1] Table B-1, maintains the function as described in NUREG-0654, Revision 1.

Licensee Notification

A. Revision 18 of the NAPS Emergency Plan identified notification of licensee off-duty personnel as a responsibility of the Shift Supervisor/SEM. This notification was completed by Station Security personnel at an Alert or higher classification or when deemed necessary by the SEM.

B. The current NAPS Emergency Plan maintains the Revision 18 performance of ERO notification by Station Security at an Alert or higher classification.

C. No revisions to the ERO notification function are proposed in this change.

State, Local and Federal Notification

A. In Revision 18 of the NAPS Emergency Plan, State/local and Federal notifications were performed by two (2) on-shift individuals as an ancillary duty, augmented by two (2) 60-minute responders.

B. The current NAPS Emergency Plan maintains the on-shift and augmented organization for the State/local and federal notification functions as described in Revision 18.

C. The proposed change identifies two (2) on-shift resources that are available for performance of state/local and federal notification functions and extends the 60-minute response time for augmented personnel performing State/local and Federal notifications to 90 minutes. Performance of the Notification function was validated during the staffing analysis to ensure that there were no conflicting duties for on-shift personnel as a result of the proposed change. The use of two (2) on-shift resources for performance of notification activities ensures there is no loss of capability resulting from extending this responsibility for an additional 30 minutes until augmented resources are available. Operations personnel responsible for performance of the notification function are in excess of site TS requirements as established in 10 CFR 50.54(m)(2)(i). Upon activation of the TSC and EOF, the Control Room staff is relieved of these functions. The proposed change is aligned with RIS 2016-10 [Reference 2] guidance for staffing for 90-minute augmented response times for this function.

3.2.4 Radiological Accident Assessment and Support of Operational Accident Assessment Function (Dose Assessments/Projections, Field Monitoring Teams, Radiation Protection)

Per NUREG-0654, Revision 1, [Reference 3] the *Radiological Accident Assessment and Support of Operational Accident Assessment* Major Functional Area includes: the (i) Emergency Operations Facility (EOF) Director, (ii) Off-site Dose Assessment, (iii) Off-site, On-site (Out-of-

plant) and In-plant surveys, and (iv) Chemistry/Radiochemistry Major Tasks. NUREG-0654, Revision 2, [Reference 1] Table B-1, changed the functions associated with Radiological Accident Assessment to address the radiological aspects only.

EOF Director Major Task

Revision 18 of the NAPS Emergency Plan included simultaneous staffing of the TSC, OSC, and LEOF at the Alert or higher classification. Initial direction and coordination of onsite emergency operations functions were transitioned from the Shift Supervisor/SEM in the Control Room to the SEM in the TSC, and ultimately to the Recovery manager in the LEOF. Details regarding Direction and Control of Emergencies are discussed in Section 3.2.2 of this Enclosure.

Off-site Dose Assessment Major Task

A. In Revision 18 of the NAPS Emergency Plan, initial performance of dose assessment on-shift was an ancillary duty of on-shift personnel. The dose assessment function was subsequently transitioned to the Dose Assessment Team in the TSC under the direction of the Radiological Assessment Director (RAD) upon activation of that facility. The function then transitioned to the LEOF under the direction of the Radiological Assessment Coordinator (RAC) upon staffing of that facility.

   In Revision 48, the LEOF was replaced by the CERC as a common emergency operations facility for NAPS and SPS. This change was approved by NRC SER dated, February 27, 2019. [Reference 6] This Revision 48 specified performance of the dose assessment function by on-shift personnel and the transition to the TSC and subsequently to the CERC upon activation of those facilities.

B. The current Plan maintains the Revision 48 on-shift and augmented responsibilities for performance of the dose assessment function.

C. In the proposed change performance of the dose assessment function by the third RP on-shift is maintained and the response time for the TSC and CERC dose assessor positions is extended to 90 minutes.

   Radiological dose assessment has benefited from technological advances that make it simpler and less time consuming. As noted in Section 3.1.4, recent improvements in dose assessment capability have resulted from the implementation of PC MIDAS which includes an expanded isotopic library, enhanced user interface and additional output reporting capability. These improvements provide additional support for the extended performance time of this function by the on-shift dose assessor. Additionally, the procedure used by the on-shift dose assessor is identical to that used by the dose assessor in the TSC and CERC resulting in maintained capability for performance of the dose assessment function during the extended response time.

   Performance of the dose assessment function by the third RP technician was evaluated in the on-shift staffing analysis using the time motion study methodology. The analysis demonstrated that the function can be performed on-shift without conflicts.

   Given the technical improvements in the dose assessment process and performance of

dose projections by a dedicated on-shift resource and maintained capability for performance of the function, performance of this function by on-shift staff for the first 90 minutes after an event does not result in conflicts in the performance of on-shift duties and does not adversely impact performance of the dose assessment function.

Offsite Surveys Major Task

A. In Revision 18 of the NAPS Emergency Plan, Offsite monitoring was initiated at the SAE or higher classification by two (2) 45-minute and two (2) 60-minute augmented responders who reported to the Dose Assessment Team in the TSC or the LEOF.

   In Revision 48, the LEOF was replaced by the CERC as a common emergency operations facility for NAPS and SPS. This change was approved by NRC SER dated, February 27, 2019. [Reference 6]

B. The current NAPS Emergency Plan maintains the Revision 48 requirements for staffing of augmented responders within 45 and 60 minutes after declaration of an Alert or higher classification, and dispatch of the offsite monitoring teams after declaration of a SAE or higher classification.

C. In the proposed change, dispatch of the two (2) Offsite Monitoring Teams (OMTs) to initiate offsite monitoring is extended by 30 minutes, however, it occurs at an Alert rather than the SAE classification. The dispatch of OMTs at an Alert or higher classification, combined with improvements in monitoring capability and the use of updated dose assessment software as discussed in Section 3.1.4 provides the means for assessing radioactive releases in the early stages of an event. Additionally, prior to the arrival of the OMTs, one of the on-shift RP Technicians are able to perform on-site (out-of-plant) surveys as a means of early identification of releases and provide data inputs to dose assessment. These capabilities serve as the basis for extending the augmentation response time from 60 to 90 minutes.

Onsite (out-of-plant) and In-Plant Surveys Major Task

A. Revision 18 of the NAPS Emergency Plan identified two (2) on-shift HP, Chemistry/Decontamination individuals as responsible for in-plant monitoring and sample collection as directed by the RP Supervisor, and monitoring of Search and Rescue, Damage Control, Fire and First Aid Team personnel as needed. These resources were augmented by an HP Technician within 45 minutes and an additional HP Technician within 60 minutes after the declaration of an Alert or higher classification.

B. The current NAPS Emergency Plan maintains the Revision 18 requirement for two (2) on-shift HP Technicians and the Revision 18 requirement for augmented response by an additional HP Technician within 45 minutes and a second HP Technician within 60 minutes after an Alert or higher classification.

C. The proposed change redefines the area for completion of Onsite (out-of-plant) Surveys to the area between the plant buildings and the PA fence, rather than the site boundary. The proposed change aligns the Onsite (out-of-plant) and In-plant functions allowing for more efficient use of RP resources and leveraging the small size of the PA footprint. The

proposed change continues to provide for two (2) on-shift RP Technicians to complete radiological surveys utilizing plant monitors or through conducting surveys within a short walking distance in support of release determination. Additionally, the proposed change extends the response time for the two (2) additional RP technicians from 45 and 60 minutes to 90 minutes after declaration of an Alert or higher classification.

Improvements in plant radiological monitoring computer systems as described in Section 3.1.3 of this Enclosure provides for easy access to plant area radiation and process monitoring data. The PCS allows RP Technicians to monitor and trend radiological conditions throughout the plant from multiple locations including ERFs and RP office areas. This monitoring capability allows the on-shift technicians to quickly provide radiological information to the SM/SEM, including changes in radiological conditions that could impact response activities, and therefore has reduced the burden on on-shift personnel to acquire this information while ensuring dose savings for a spectrum of incidents with the potential to produce offsite dose in exceedance of Federal Protective Action Guidelines (PAGs).

RIS 2016-10 [Reference 2] notes that augmentation of additional RP qualified resources for performance of in-plant protective actions is needed to ensure radiological protection of added on-shift maintenance and technical staff to compensate for the extended augmentation timeframe. As discussed in Section 3.1.1, augmentation of existing on-shift resources is not required in advance of 90 minutes after the declaration of an Alert or higher classification. As a result, the need for additional RP qualified resources for performance of in-plant surveys can also be extended to 90 minutes consistent with staffing times of other responding disciplines. Improved in-plant monitoring capability allows for determination of release status without requiring area-specific surveys.

<u>Chemistry/Radiochemistry Major Task</u>

A. Revision 18 of the NAPS Emergency Plan identified an on-shift Chemistry Technician responsible for chemistry sampling and analysis. This on-shift resource was augmented by two (2) additional Chemistry Technicians at 60 minutes.

B. The current NAPS Emergency Plan maintains the Revision 18 requirement for one (1) on-shift Chemistry Technician and augmentation by two (2) additional Chemistry Technicians at 60 minutes.

C. The proposed change removes references to performance of chemistry sampling by the on-shift Chemistry Technician and during periods after event declaration because this activity is governed by site documents outside the purview of the Emergency Plan. These changes are aligned with the guidance contained in NUREG-0654, Revision 2, [Reference 1] Table B-1.

3.2.5 Plant System Engineering, Repair and Corrective Actions Function

Per NUREG-0654, Revision 1, [Reference 3] the *Plant System Engineering, Repair and Corrective Actions* Major Functional Area includes: (i) Technical Support and (ii) Repair and Corrective Actions Major Tasks. NUREG-0654, Revision 1, Table B-1, notes that Mechanical

Maintenance/Radwaste Operator and Electrical Maintenance/Instrument and Control Technician expertise may be provided by shift personnel assigned other functions.

Technical Support Major Task

A. Revision 18 of the NAPS Emergency Plan included an STA position who advised the Shift Supervisor on operations activities and provide engineering support prior to staffing of the TSC. The position was augmented at 60 minutes after an Alert by the Technical Support Team in the TSC.

B. The current NAPS Emergency Plan maintains the Revision 18 requirement for the Reactor Engineer position augmented at 60 minutes from an Alert or higher classification. The Reactor Engineer is responsible for supporting the technical team in the TSC in analyzing reactor physics, hydraulic, and thermodynamic problems and development of solutions. Staffing by Electrical and Mechanical Engineering continues to take place at 60 minutes after the event.

C. The proposed change maintains performance of the core/thermal hydraulics function as the responsibility of the STA on-shift and extends the response time of the TSC Reactor Engineer from 60 to 90 minutes. The procedure analysis demonstrated that the on-shift STA was able to perform required troubleshooting activities for the first 90 minutes after an event through implementation of event response procedures designed for restoration of safety functions to include use of defense-in-depth capabilities as needed. The analysis showed that there were no technical support activities requiring additional mechanical or electrical expertise needed during the first 90 minutes after event initiation. As a result, the analysis demonstrated that on-shift resources, as noted in Table 5.1 of the proposed change, are capable of taking actions to restore safety functions and support the extension of augmented response to 90 minutes after declaration of an emergency event classified as an Alert or higher.

   To ensure continued performance of the CDA function for the first 90 minutes after the declaration of an emergency event classified as an Alert or higher, the site will implement provision of access to and training of the STA on-shift with core damage assessment capability that is functionally equivalent to that used by the Reactor Engineer in the TSC.

   Upon activation of the TSC, the Reactor Engineer relieves the STA of the core damage assessment function. Additionally, the Mechanical and Electrical Engineers assume responsibility for development of troubleshooting and repair strategies as well as transition from defense in depth applications to use of installed plant safety systems.

Repair and Corrective Actions Major Task

A. Revision 18 of the NAPS Emergency Plan identified maintenance activities as being performed by personnel available on a 16-hour per day, 7-day per week basis, with coverage during remaining hours being provided as an ancillary duty of other on-shift personnel. These positions were augmented by additional Electrical and I&C Maintenance technicians at 45 minutes and Mechanical, Electrical, and I&C Maintenance technicians and a Radwaste Operator within 60 minutes of an Alert or higher classification.

In Revision 38, the on-shift RWO position, an ancillary duty of the existing on-shift staff, was subsumed into the increased count of operations personnel in Table 5.1. The augmented RWO position was replaced with an additional Mechanical Maintenance responder. This change maintained the site requirement for four (4) augmented positions related to the Repair and Corrective Actions function.

B. The current NAPS Emergency Plan maintains the Revision 38 on-shift maintenance craft staffing requirements and augmented maintenance response requirements at 45 and 60 minutes at an Alert or higher classification.

C. The proposed change removes the reference to on-shift maintenance activities and revises the augmented response to include one (1) Electrical Maintenance, one (1) Mechanical Maintenance, and one (1) I&C Maintenance responder at 90 minutes. As discussed in the technical evaluation, the robust design of ECCS and proven system reliability serve as the basis for removal of on-shift personnel for the purposes of performing maintenance activities from on-shift. The procedure analysis demonstrated that there were no repair or corrective activities required for the first 90 minutes after an event with the exception of installing jumpers to support actions directed by 1/2-ECA-3.3, *SGTR Without Pressurizer Pressure Control*, and 1/2-FR-H.3, *Response to Steam Generator High Level*. This conflict will be resolved by training operations personnel to install the specified jumpers and revising the affected procedures. As a result, upon completion of identified training, performance of repair and corrective action activities by maintenance augmented responders at 90 minutes continues to support performance of the Repair and Corrective Action function. Additionally, in the unlikely event of a failure of ECCS system capabilities at an impacted unit, additional defense in depth is provided by NAPS procedures that address a loss of a safety function using installed non-safety plant systems and equipment at the affected unit, the ability to cross-connect some systems with the unaffected unit, and BDB strategies and equipment.

   Once the OSC is staffed the Maintenance Coordinators assume responsibility for development of repair strategies for installed plant equipment. As installed plant equipment is restored, the plant can transition from the use of defense-in-depth strategies.

3.2.6 Protective Actions (In-Plant) Function

Per NUREG-0654, Revision 1, [Reference 3] the *Protective Actions* Major Functional Area includes the Radiation Protection Major Task, specifically: (a) Access Control, (b) HP coverage for repair and corrective actions, search and rescue, first aid, and firefighting, (c) Personnel monitoring, and (d) Dosimetry. NUREG-0654, Table B-1, notes that HP Technician expertise may be provided by shift personnel assigned other functions. NUREG-0654, Revision 2, [Reference 1] Table B-1 combined this function with the Radiation Protection function.

A. Revision 18 of the NAPS Emergency Plan provided for performance of in-plant protective actions as an ancillary duty of the two (2) on-shift HP Technicians. These positions were augmented by an additional HP Technician at 45 minutes and three (3) additional HP

Technicians at 60 minutes.

In Revision 38, an additional position was added to the on-shift staff in support of this function.

B. The current Plan maintains the on-shift and augmented RP staffing numbers as stated in Revision 38 of the NAPS Emergency Plan.

C. The proposed change combines the Protective Action and Radiological Assessment functions and utilizes the two (2) on-shift RP Technicians for performance of these tasks as noted in NUREG-0654, Revision 2, [Reference 1] Table B-1, guidance and extends the response time for the augmented RP Technicians from 45 and 60 minutes to 90 minutes after declaration of an Alert or higher classification. These positions will continue to provide coverage for:

- Access Control / Dosimetry
- HP Coverage for Repair and Corrective Actions, Search and Rescue First Aid and Firefighting
- Personnel Monitoring / Habitability

RIS 2016-10 [Reference 2] notes that augmentation of additional RP qualified resources for performance of protective actions is needed to ensure radiological protection for added on-shift maintenance and technical staff to compensate for the extended augmentation time. As demonstrated in the procedure analysis and discussed in Section 3.1.1, existing on-shift resources are able to perform troubleshooting activities to initiate restoration of a loss of safety function for the first 90 minutes after the declaration of an Alert or higher classification without conflicts once specifically identified procedure revisions and training actions are completed. The arrival of augmented RP technicians coincides with the response times for maintenance craft and ensures necessary job coverage is available. As a result, the augmented RP qualified resources for performance of in plant protective actions can also be extended to 90 minutes to coincide with response times of other disciplines.

3.2.7 Firefighting Function (Not Applicable)

Per NUREG-0654, Revision 1, [Reference 3] the *Firefighting* Major Functional Area is addressed by use of a Fire Brigade and managed in accordance with site TSs. NUREG-0654, Revision 2, [Reference 1] Table B-1, does not address the Firefighting function as this is performed under the site Fire Protection Plan.

A. In Revision 18 of the NAPS Emergency Plan, firefighting response by on-shift personnel was the responsibility of the five (5) member Fire Brigade responsible for performance of this function as an ancillary duty. Augmented support from offsite resources was available as needed.

B. The current NAPS Emergency Plan maintains the Revision 18 requirement for five (5) on-shift Fire Brigade members and augmentation by local fire support resources.

C. The proposed change removes the reference to the Firefighting function in Table 5.1 as this is addressed under the NAPS Technical Requirements Manual (TRM). This change is aligned with the guidance provided in NUREG-0654, Revision 2, [Reference 1] Table B-1.

3.2.8 Rescue Operations and First-Aid Function (Not Applicable)

NUREG-0654, Revision 1, [Reference 3] Table B-1, notes that this function may be provided by shift personnel assigned other functions. NUREG-0654, Revision 2, [Reference 1] Table B-1, removed rescue operations and first aid as these tasks are outside the purview of the Emergency Plan.

A. NAPS Emergency Plan, Revision 18, provided for first aid treatment of injured personnel by qualified on-shift personnel as an ancillary duty. Search and rescue functions were provided by first aid and fire brigade personnel.

B. The current NAPS Emergency Plan maintains this commitment through the use of on-shift First Aid Responders.

C. The proposed change removes the reference to the Rescue Operations and First Aid function in Table 5.1 as this is a responsibility of the Fire Brigade and is maintained in accordance with the site Fire Protection Plan. This change is aligned with guidance provided in NUREG-0654, Revision 2, [Reference 1] Table B-1.

3.2.9 Site Access Control and Personnel Accountability Function (Not Applicable)

NUREG-0654, Revision 1, [Reference 3] the *Site Access Control and Personnel Accountability* Major Functional Area is addressed by Security personnel in accordance with the Dominion Fleet Security Plan. NUREG-0654, Revision 2, [Reference 1] Table B-1, removed site access control and personal accountability areas as these are under the purview of the Dominion Fleet Security Plan.

A. In NAPS Emergency Plan Revision 18, [Reference 5] site access control and accountability was identified as a function of the Security Team Members.

B. The current NAPS Emergency Plan maintains the Revision 18 requirement.

C. The proposed change removes the reference to the Site Access Control and Personal Accountability function in Table 5.1 as actions associated with this function are addressed in accordance with the Dominion Fleet Security Plan. This change is aligned with guidance provided in NUREG-0654, Revision 2, [Reference 1] Table B-1.

3.3 Conclusions

The proposed changes continue to support the functional areas of the Emergency Plan, continue to ensure the protection of the health and safety of the public and site personnel, and will not

present a significant burden to on-shift personnel.

Elimination of on-shift Maintenance positions and extending augmented response times, given the diverse and redundant capabilities of plant systems and the results of the procedure analysis, will not adversely affect the site's ability to respond to an event or delay performance of maintenance functions.

Reduction, re-alignment, and extension of the RP Technician staffing requirements and augmentation response times from a total of eight (8) RP individuals at 45 and 60 minutes to a total of six (6) RP individuals at 90 minutes does not adversely affect the performance of the radiological assessment or protective action functions associated with event response. Dominion Energy Virginia has incorporated technologies in installed in-plant monitoring capability and the use of telemetry which ensures the emergency response functions identified in the NAPS Emergency Plan will continue to be performed in a timely manner. The proposed changes do not result in a reduced capability to effectively respond to an emergency.

The proposed change extends the times at which the offsite monitoring teams are dispatched by 30-minutes. However, offsite monitoring teams will be dispatched at an Alert or higher classification rather than at a Site Area Emergency or General Emergency. Initiation of offsite monitoring at a lower classification will continue to support timely performance of the function even with the extended dispatch time.

Removal of references to chemistry positions that do not perform EP functions and chemistry activities that are performed as required by site TSs is consistent with NRC guidance. Similarly, removal of references to administrative/support positions are included in the proposed change. These positions and functions will be maintained in the site EPIPs.

A procedure analysis demonstrated that on-shift personnel would be able to initiate troubleshooting activities during the first 90 minutes and that there are no technical support or corrective action activities requiring additional mechanical or electrical expertise during this timeframe after certain specifically identified procedure revisions and training are completed. The analysis concludes that the proposed extension of augmented response to 90 minutes would result in no conflicts in the performance of on-shift tasks.

Therefore, the proposed changes continue to ensure the NAPS Emergency Plan will meet the requirements of 10 CFR 50.54(q)(2), 10 CFR 50, Appendix E, and the planning standards of 10 CFR 50.47(b).

4.0 REGULATORY EVALUATION

4.1 Applicable Regulatory Requirements/Criteria

Title 10 Code of Federal Regulations 50.47(b)(1) and (2):

(b) The onsite and, except as provided in paragraph (d) of this section, off-site emergency response plans for nuclear power reactors must meet the following standards:

(1) Primary responsibilities for emergency response by the nuclear facility licensee and by State and local organizations within the Emergency Planning Zones have been assigned, the emergency responsibilities of the various supporting organizations have been specifically established, and each principal response organization has staff to respond and to augment its initial response on a continuous basis.

(2) On-shift facility licensee responsibilities for emergency response are unambiguously defined, adequate staffing to provide initial facility accident response in key functional areas is maintained at all times, timely augmentation of response capabilities is available and the interfaces among various onsite response activities and Off-site support and response activities are specified.

The existing NAPS Emergency Plan includes onsite and off-site emergency response plans that meet the requirements listed above. This LAR proposes to remove maintenance personnel from on-shift and extend staff augmentation response times from 45 and 60 minutes to 90 minutes. The NAPS Emergency Plan will continue to have onsite and off-site emergency response plans that meet 10 CFR 50.47(b).

Title 10 Code of Federal Regulations 50.54(q)

Relevant portions are as follows:

(q) Emergency Plans

(1)(iv) Reduction in effectiveness means a change in an emergency plan that results in reducing the licensee's capability to perform an emergency planning function in the event of a radiological emergency.

(2) A holder of a license under this part, or a combined license under part 52 of this chapter after the Commission makes the finding under § 52.103(g) of this chapter, shall follow and maintain the effectiveness of an emergency plan that meets the requirements in appendix E to this part and, for nuclear power reactor licensees, the planning standards of § 50.47(b).

(4) The changes to a licensee's emergency plan that reduce the effectiveness of the plan as defined in paragraph (q)(1)(iv) of this section may not be implemented without prior approval by the NRC. A licensee desiring to make such a change after February 21, 2012 shall submit an application for an amendment to its license. In addition to the filing requirements of §§ 50.90 and 50.91, the request must include all emergency plan pages affected by that change and must be accompanied by a forwarding letter identifying the change, the reason for the change, and the basis for concluding that the licensee's emergency plan, as revised, will continue to meet the requirements in appendix E to this part and, for nuclear power reactor licensees, the planning standards of § 50.47(b).

The existing NAPS Emergency Plan meets the planning standards of 10 CFR 50.47(b) and

10 CFR 50, Appendix E, as required by 10 CFR 50.54(q)(2). This LAR proposes to remove maintenance personnel from shift and extend staff augmentation response times from 45/60 minutes to 90 minutes. These proposed changes are considered a reduction in effectiveness as defined in 10 CFR 50.54(q)(1)(iv) and require submittal based on 10 CFR 50.54(q)(4). Therefore, Dominion Energy Virginia is submitting this LAR pursuant to 10 CFR 50.90.

The NAPS Emergency Plan will continue to meet the requirements of 10 CFR 50.54(q)(2) by maintaining the effectiveness of the Emergency Plan such that it meets the requirements of 10 CFR 50, Appendix E, and the planning standards of 10 CFR 50.47(b).

Title 10 Code of Federal Regulations Part 50, Appendix E.IV

Relevant portions are as follows:

A. Organization

The organization for coping with radiological emergencies shall be described, including definition of authorities, responsibilities, and duties of individuals assigned to the licensee's emergency organization and the means for notification of such individuals in the event of an emergency. Specifically, the following shall be included:

A.9. By December 24, 2012, for nuclear power reactor licensees, a detailed analysis demonstrating that on-shift personnel assigned emergency plan implementation functions are not assigned responsibilities that would prevent the timely performance of their assigned functions as specified in the emergency plan.

The existing NAPS Emergency Plan includes a description of the organization, including definition of authorities, responsibilities, and duties of individuals. The current Emergency Plan (Revision 52) [Reference 18] complies with 10 CFR 50, Appendix E.IV.A.9. This LAR proposes to remove maintenance personnel from shift and extend staff augmentation response times from 45/60 minutes to 90 minutes. A staffing analysis has been performed to demonstrate continued compliance with 10 CFR 50, Appendix E.IV.A.9. The staffing analysis supports acceptability of the 90-minute staff augmentation times. The proposed changes to the NAPS Emergency Plan will continue to describe the authorities, responsibilities, and duties of these individuals. Therefore, with the changes proposed in the LAR, the requirements of 10 CFR 50, Appendix E, continue to be met.

NUREG-0654/FEMA-REP-1, Revision 1

NUREG-0654/FEMA-REP-1, Revision 1, [Reference 3] Section II.B.5 states, in part:

> *"Each licensee shall specify the positions or title and major tasks to be performed by the persons to be assigned to the functional areas of emergency activity. For emergency situations, specific assignments shall be made for all shifts and for plant staff members, both onsite and away from the site. These assignments shall cover the emergency functions in Table B-1 entitled, 'Minimum Staffing Requirements for Nuclear Power Plant*

Emergencies.' The minimum on-shift staffing levels shall be as indicated in Table B-1. The licensee must be able to augment on-shift capabilities within a short period after declaration of an emergency. This capability shall be as indicated in Table B-1."

NUREG-0654, Revision 1, [Reference 3] and NUREG-0654, Revision 2, [Reference 1] Table B-1, state general guidance concerning the onsite emergency organization to allow licensees some flexibility in the number of on-shift staff required by emergency plans for response to emergency events. NUREG-0654, Revision 1, guidance recommends that there be, in addition to on-shift personnel, 30-minute and 60-minute responders. NUREG-0654, Revision 2, Table B-1, provides for augmented response times of 60 and 90 minutes. The augmented ERO responders assume many managerial, engineering, and administrative duties from the on-shift personnel, allowing on-shift personnel to focus more fully on plant operations. NUREG-0654, Revision 2, also provides the guidance that augmentation time be measured from the declaration of the emergency. The current NAPS Emergency Plan staffing in Table 5.1 meets the intent of NUREG-0654, Revision 1, Table B-1. This LAR proposes to remove maintenance personnel from shift and extend staff augmentation response times from 45 and 60-minute response to 90 minutes. The proposed changes have been evaluated in a staffing analysis performed to meet 10 CFR 50, Appendix E.IV.A.9 requirements. The proposed changes to the NAPS Emergency Plan meet the intent of NUREG-0654, Revision 2, Table B-1. (i.e., continues to cover the emergency functional areas in Table B-1).

4.2 Precedent

The proposed NAPS Emergency Plan changes are similar to changes approved for other licensees, including: Susquehanna (ML030830543), Fermi (ML102700478), River Bend (ML012710218), Watts Bar (ML041810056), Point Beach (ML16118A154), Duane Arnold (ML17220A026), Monticello (ML17349A916), Prairie Island (ML17362A202), South Texas Project (ML18159A212), Sequoyah (ML18159A461) and Diablo Canyon (ML19196A309). Furthermore, the proposed NAPS Emergency Plan changes and evaluation documented in this submittal continue to meet the standards of 10 CFR 50.47(b) and the requirements of 10 CFR 50, Appendix E.

4.3 No Significant Hazards Considerations Determination

In accordance with the requirements of 10 CFR 50.90, Dominion Energy Virginia requests an amendment to facility Renewed Facility Operating Licenses NPF-4 and NPF-7 for North Anna Power Station, Units 1 and 2 respectively, to revise the Emergency Plan. Completion of an on-shift staffing analysis of the ERO supported the removal of maintenance personnel from shift and extend staff augmentation response times from 45/60-minute response to 60/90 minutes. Dominion Energy Virginia proposes to revise the ERO staff augmentation response times in the NAPS Emergency Plan.

Dominion Energy Virginia has evaluated the proposed amendment against the standards in 10 CFR 50.92 and has determined that the operation of NAPS in accordance with the proposed amendment presents no significant hazards. The Dominion Energy Virginia evaluation against

each of the criteria in 10 CFR 50.92 follows.

1. *Does the proposed change involve a significant increase in the probability or consequences of an accident previously evaluated?*

   Response: No.

   The proposed increase in staff augmentation times has no effect on normal plant operation or on any accident initiator or precursors and does not impact the function of plant structures, systems, or components (SSCs). The proposed change does not alter or prevent the ability of the ERO to perform their intended functions to mitigate the consequences of an accident or event. The ability of the ERO to respond adequately to radiological emergencies has been demonstrated as acceptable through a staffing analysis as required by 10 CFR 50, Appendix E.IV.A.9.

   Therefore, the proposed Emergency Plan changes do not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. *Does the proposed change create the possibility of a new or different kind of accident from any accident previously evaluated?*

   Response: No.

   The proposed change does not impact the accident analysis. The change does not involve a physical alteration of the plant (i.e., no new or different type of equipment will be installed), a change in the method of plant operation, or new operator actions. The proposed change does not introduce failure modes that could result in a new accident, and the change does not alter assumptions made in the safety analysis. This proposed change increases the staff augmentation response times in the Emergency Plan, which are demonstrated as acceptable through a staffing analysis as required by 10 CFR 50, Appendix E.IV.A.9. The proposed change does not alter or prevent the ability of the ERO to perform their intended functions to mitigate the consequences of an accident or event.

   Therefore, the proposed change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. *Does the proposed change involve a significant reduction in a margin of safety?*

   Response: No.

   Margin of safety is associated with confidence in the ability of the fission product barriers (i.e., fuel cladding, reactor coolant system pressure boundary, and containment structure) to limit the level of radiation dose to the public. The proposed change is associated with the Emergency Plan staffing and does not impact operation of the plant or its response to transients or accidents. The change does not affect the TSs. The proposed change does not involve a change in the method of plant operation, and no accident analyses will be affected by the proposed change. Safety analysis acceptance criteria are not affected by this proposed change.

   Therefore, the proposed change does not involve a significant reduction in a margin of safety.

Conclusion

Dominion Energy Virginia has evaluated the proposed change against the applicable regulatory requirements and acceptance criteria. The proposed NAPS Emergency Plan changes continue to assure that regulatory requirements and emergency planning standards associated with emergency response are met. The revised Emergency Plan will continue to provide the necessary response staff with the proposed change. A staffing analysis and a functional analysis were performed for the proposed change on the timeliness of performing major tasks for the functional areas of Emergency Plan. The analysis concluded that an extension in staff augmentation times would not significantly affect the ability to perform the required Emergency Plan tasks. Therefore, the proposed change is determined to not adversely affect the ability to meet the requirements of 10 CFR 50.54(q)(2), 10 CFR 50, Appendix E, and the emergency planning standards as described in 10 CFR 50.47 (b).

Based on the above evaluation, Dominion Energy Virginia has determined that operation of the facility in accordance with the proposed change does not involve a significant hazards consideration as defined in 10 CFR 50.92(c), in that it does not: (1) involve a significant increase in the probability or consequences of an accident previously evaluated; (2) create the possibility of a new or different kind of accident from any accident previously evaluated; or (3) involve a significant reduction in a margin of safety.

5.0 ENVIRONMENTAL CONSIDERATION

Dominion Energy Virginia has determined that the proposed change would not revise a requirement with respect to installation or use of a facility or component located within the restricted area, as defined in 10 CFR 20, nor would it change an inspection or surveillance requirement. The proposed amendment does not involve:

(i) a significant hazards consideration, or

(ii) authorize a significant change in the types or a significant increase in the amounts of any effluent that may be released Off-site, or

(iii) result in a significant increase in individual or cumulative occupational radiation exposure.

Accordingly, the proposed amendment meets the eligibility criterion for a categorical exclusion set forth in 10 CFR 51.22(c)(9). Therefore, Dominion Energy Virginia concludes that pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment needs to be prepared in connection with the proposed amendment.

6.0 REFERENCES

1) 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,” December 2019. (ADAMS Accession No. ML19347D139)

2) NRC 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)

3) NUREG-0654/FEMA-REP-1, Revision 1, “Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants,” November 1980. (ADAMS Accession No. ML040420012)

4) NRC Letter to Virginia Electric and Power Company, “NUREG-0737 Item III.A.2.1 Emergency Plan Upgrade to Meet Rule, North Anna Power Station, Units No. 1 and No. 2,” dated May 10, 1983. (ADAMS Accession No. ML20076C761)

5) NRC Letter to Virginia Electric and Power Company, “Review of Proposed Cost Beneficial Licensing Action Request for Emergency Plan Changes for North Anna Power Station,” dated December 18, 1995. (TAC Nos. M93602 and M93603)

6) NRC Letter to Virginia Electric and Power Company, “North Anna Power Station, Unit Nos. 1 and 2, and Surry Power Station, Unit Nos. 1 and 2 – Issuance of Amendment Nos. 281, 264, 284, and 294 to Consolidate Emergency Operations Facilities and Associated Emergency Plan Changes (EPID L-2018-LLA-0014),” dated February 27, 2019. (ADAMS Accession ML19031B227)

7) NEI 10-05, Revision 0, “Assessment of On-Shift Emergency Response Organization Staffing and Capabilities,” dated June 2011. (ADAMS Accession No. ML111751698)

8) NUREG-0737, Final Report, “Clarification of TMI Action Plan Requirements,” dated November 1980. (ADAMS Accession No. ML051400209)

9) NUREG-0737, Supplement 1, “Clarification of TMI Action Plan Requirements: Requirements for Emergency Response Capability,” dated January 1983. (ADAMS Accession No. ML102560009)

10) North Anna Power Station, Units 1 and 2, Updated Final Safety Analysis Report, Revision 54.

11) NUREG-0696, Final Report, “Functional Criteria for Emergency Response Facilities,” dated February 1981. (ADAMS Accession No. ML051390358)

12) NEI 99-01, Revision 4, “Development of Emergency Action Levels for Non-Passive Reactors,” January 2003. (ADAMS Accession No. ML ML030230250)

13) NRC Letter to Virginia Electric and Power Company, “North Anna Power Station, Units Nos. 1 and 2 (NAPS), and Surry Power Station, Unit Nos. 1 and 2 (Surry) – Issuance of Amendments for Changes to the Emergency Plan (TAC Nos. ME3383, ME3384, ME3385, and ME3386),” dated January 26, 2011. (ADAMS Accession No. ML103220114)

14) NRC Letter to Virginia Electric and Power Company, “North Anna Power Station, Units No 1 and 2 (NAPS), and Surry Power Station, Units No. 1 and 2 (Surry) – Issuance of Amendments for Changes to the Emergency Action Level Revisions (TAC Nos. ME9754, ME9754, ME9755, ME9756),” dated September 25, 2013. (ADAMS Accession No. ML131186A197)

15) NEI 99-01, Revision 6, “Development of Emergency Action Levels for Non-Passive Reactors,” November 2012. (ADAMS Accession No. ML12326A805)

16) NRC Letter to Virginia Electric and Power Company, “Millstone Power Station Units 1, 2, and 3, North Anna Power Station Units 1 and 2, and Surry Power Stations Units 1 and 2 – Issuance of Amendments re: Adoption of Emergency Action Level Schemes Pursuant to NEI 99-01, Revision 6,” dated December 31, 2019. (ADAMS Accession No. ML19305D248)

17) NSIR/DPR-ISG-01, “Interim Staff Guidance, Emergency Planning for Nuclear Power Plants,” Revision 0, November 2011. (ADAMS Accession No. ML113010523)

18) North Anna Emergency Plan (NAEP), Revision 52, dated October 30, 2020.

ATTACHMENT 1-1

North Anna Power Station, Units 1 and 2:

Marked-up Emergency Plan Pages

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

Emergency Plan

Title: North Anna Power Station Emergency Plan

Revision Number:	**Effective Date:**
XX	TBD

Approvals on File

- 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.
- Facility Activation – An Emergency Response Facility is activated when the minimum staff per Figures 5.3, 5.4 and 5.5 are available and the facility is ready to assume assigned functions. Although the facility may be ready, the on-shift staff may prioritize completion of critical tasks prior to turnover.
- General Emergency - Events are in progress or have occurred which involve actual or imminent substantial core degradation or melting with potential for loss of containment integrity or HOSTILE ACTION that results in an actual loss of physical control of the facility. Releases can be reasonably expected to exceed 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 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 progress or have occurred which indicate a potential degradation of the level of safety of the plant or indicate a security threat to facility protection has been initiated. No releases of radioactive material requiring offsite response or monitoring are expected unless further degradation of safety related structures, systems, or components 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.

1.1 ACRONYMS AND ABBREVIATIONS

AC	-	Alternating Current
Asst.	-	Assistant
cc	-	Cubic Centimeter
Ce	-	Cerium
CDE	-	Committed Dose Equivalent
CEDE	-	Committed Effective Dose Equivalent
CERC	-	Corporate Emergency Response Center
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
DEENS	-	Dominion Energy Emergency Notification System
DEPT.	-	Department
DOE	-	Department of Energy
E~~A~~SD	-	Emergency ~~Administrative~~Security 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

~~LMC~~	~~-~~	~~Local Media Center~~
LOCA	-	Loss of Coolant Accident
LW	-	Liquid Waste System
MCL	-	Management Counterpart Link
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

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 augmentation~~activation~~ of the ~~full~~emergency response organization. They also provide techniques for estimating the consequences of offsite releases and making recommended Protective Action Recommendations.

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 emergency response facilities. Mobilization of the Offsite Monitoring Teams occurs at this point.

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.

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 and is updated as to the status of the unit, the emergency actions taken, and the current status of the emergency. Following this relief,~~by the Station Emergency Manager ~~function may shift to~~in the onsite Technical Support Center (TSC).

The Corporate Emergency Response Center (CERC) is activated concurrent with the TSC. The CERC is staffed by corporate personnel, including the Corporate Response Manager and Technical Support Manager, who direct the activities of this facility. The Technical Support Manager is responsible for ensuring the 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 for dispatch of any special assistance or services requested by the station. The Corporate Response Manager has the ultimate authority to commit company resources and set policy as part of managing the long term recovery effort.

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 performing EP functions is comprised of Operations and~~,~~ 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). Dominion Energy's Nuclear Facility Quality Assurance Program Description (Topical Report DOM-QA-1) provides the details of the normal station organization.

5.2 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~~Table 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 normal duty functions until their emergency planning 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 designated station personnel to commence callout of supplementary emergency response personnel. Table 5.1 also represents the minimum number of personnel that are required to activate the TSC, OSC and CERC~~augment emergency operations~~ and the estimated response times of these personnel.

The responsibilities of the emergency response personnel assigned EP functions on shift and those who make up the augmentation crews are consistent with ~~meet~~ the staffing level goals ~~functions identified in~~promulgated by NRC Revised 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~~ consists of at least the positions discussed below. Reporting relationships are as depicted in Figure 5.3~~.2~~, 5.4 and 5.5. 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 operates from the Technical Support Center. The SEM ultimately reports to the 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 CERC Technical Support Manager will be responsible for assuming the non-delegable 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 Communicators

The Emergency Communicators report to the SEM in the Control Room prior to activation of the TSC and CERC~~, and to the TSC SEM after its activation~~. The primary duties of the Emergency ~~c~~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. Responsibility for Notification of State and local governments will transfer to the TSC or CERC upon activation of these facilities~~staff after its activation~~.

5.2.1.3 Emergency Procedures Coordinator

The Emergency Procedures Coordinator (EPC) reports to the SEM in the TSC, or wherever is necessary to support the SEM and emergency response operations, 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 Security~~Administrative~~ Director

The Emergency Security~~Administrative~~ Director (ES~~A~~D) reports to the SEM in the TSC as part of the augmentation of the on-shift emergency organization. He acts as the liaison between site Security and the TSC and 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 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 functions~~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 staffed~~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 planning, scheduling and material requisitioning in support of damage control tasks.~~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 accountability, dispatch and control of response teams.~~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~~2~~ 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 TSC is activated.~~eam 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.~~

5.2.1.14~~6~~ Security Team

The Security Team reports to the ES~~A~~D. 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.

5.2.1.15~~7~~ 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 CERC upon full staffing of that facility. The Dose Assessment Team will then provide support to the RAD regarding onsite response and interface with the CERC.

5.2.1.168 Offsite Monitoring Teams

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

5.2.1.179 Evacuation Monitoring Team

This Team is under the direction of Radiation Protection Supervisor and is staffed~~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.

5.2.1.1820 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.~~

5.2.1.1922 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.

5.2.1.2023 Onsite (Out of Plant) Monitoring Team

An RP~~This Team~~ Technician reports to the RPS and operates out of the Station HP Office. The RP Technician~~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.~~

5.2.1.2~~1~~6 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~~ consists of at least the positions discussed below. Reporting relationships are as depicted in Figure 5.3~~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 staffed~~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 Support Manager, the Nuclear News Manager, and 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 the command functions related to~~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 and~~;~~ assessing and providing protective action recommendations to offsite authorities. The TSM is also responsible for~~;~~ 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 Support Manager

The Resource Support Manager (RSM) reports to the CRM and is responsible for logistical and administrative support for the CERC. The RSM supervises the Resource Support 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.~~

5.2.2.6~~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.

5.2.2.79 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.

5.2.2.810 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.

5.2.2.911 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 5.2.1.158, and establish the Health Physics Network (HPN) when requested by the NRC.

5.2.2.102 Resource Support Team

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

5.2.2.113 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.

5.2.2.124 Joint Information Center Support Team

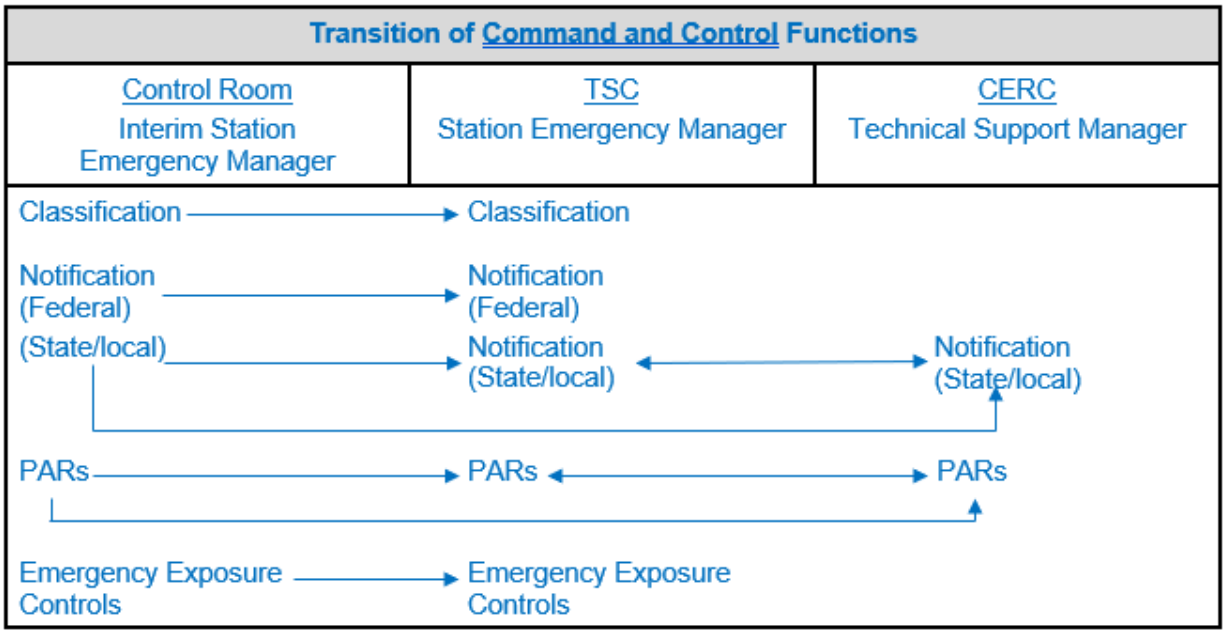
The Joint Information Center Support Team will assist the CTS by providing technical advice and interface with offsite response organization public information staff at the JIC, when staffed~~activated~~.

5.3 AUGMENTATION OF 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 in Appendix 10.1 of this Plan.

If conditions at the Station require an Alert or higher classification, the CERC, TSC and OSC shall be activated. The facility activation goal for the TSC, ~~and~~ OSC and CERC is approximately ~~6~~90 minutes~~. The~~

~~activation time goal for the CERC is within 75 minutes of~~ from the declaration of an Alert or higher emergency classification.~~, 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 Corporate Response Manager located in the CERC (See Figure 5.54). Additional resources shall be obtained through personnel assigned to the CERC. Those additional personnel directed to report to the site during the emergency shall report to the Station Emergency Manager for assignment. Figures 5.3, 5.4, and 5.5~~5.a-d~~ display minimum staff required for activation for each facility. The transition of command and control functions from the Control Room to the TSC and CERC is outlined below.



5.3.1 Notification and Response

The emergency response organization (ERO) is notified to augment in the event of an Alert, Site Area Emergency or General Emergency. The following functions 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 CERC.

5.3.1.2 Logistics Support for Emergency Personnel

The CERC Resource Support 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 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.

5.3.1.4 Interface with Governmental Authorities

CERC management is responsible for contacting governmental agencies when coordinating mobilization of resources or requesting additional support. The 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 staffed~~activated, at the Local Media Center in the North Anna Nuclear Information Center (NANIC)~~.

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, 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:

- Virginia Department of General Services, Division of Consolidated Laboratory Services, Richmond, VA (75 minutes)
- 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.

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 DEENS. If the DEENS 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 5.2~~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.

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.	Additional Within Approx. 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	CERC	Management of Emergency Response Resources and Recovery Operations	Technical Support Manager	(Refer to Table 5.2)		
Radiological Accident Assessment	TSC	Radiological Dose Assessment	**Radiological Assessment Director**	1[c]	1	–
	CERC	Accident Assessment	Radiological Assessment Coordinator	(Refer to Table 5.2)		
	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.	Additional Within Approx. 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[i]	local support	
	In-Plant	Search and Rescue	Search and Rescue Team Member	2[i]	–	2[i]
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).

Major Functional Area	Major Tasks	Position Title/Expertise	Proposed On-Shift	Capability for Additions 90 min
Emergency Direction and Control	Oversight	Unit Shift Supervisor (SRO)	2	-----
		Technical Support Manager (CERC)	------	1
	Classification	Shift Manager (SRO)	1	-----
		Station Emergency Manager (TSC)	------	1
		Emergency Operations Director (TSC)	------	1
Notification/ Communication	Licensee, Local/State Federal personnel and maintain communication	Emergency Communicator (SRO/RO/NO)	2	-----
		State/local Communicator (CERC)	------	1
		NRC Emergency Communicator (TSC)	------	1
		State/local Communicator (TSC)	------	1
Radiological Accident Assessment	Offsite Dose Assessment	RP Technician	1	-----
		Rad Assessment Coordinator (CERC)	------	1
		Dose Assessment Team Member (CERC)	------	1
		Operational Support Coordinator (CERC)	------	1
		Radiological Assessment Director (TSC)	------	1
		Dose Assessment Team Leader (TSC)	------	1
	Offsite Surveys	Offsite Monitoring Team Leader	------	2
		Offsite Monitoring Team Member	------	2
	In-plant/Onsite (out-of-plant) Surveys	RP Technician	1	2
	Protective Actions	RP Technician	1	4
Plant System Engineering	Technical Support	Shift Technical Advisor (SRO/STA)	1	-----
		Reactor Engineer (TSC)	------	1
		Electrical Engineer (TSC)	------	1
		Mechanical Engineer (TSC)	------	1
Repair and Corrective	Repair and Corrective Actions	Mechanical Maintenance (OSC)	------	1
		Electrical Maintenance (OSC)	------	1
		I&C Maintenance (OSC)	------	1
		OSC Director (OSC)	------	1
		Mech. Maint. Coordinator (OSC)	------	1
		Elec. Maint. Coordinator (OSC)	------	1
		I&C Maint. Coordinator (OSC)	------	1
		RP Coordinator (OSC)	------	1
Total			**9**	**32**

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 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.
Health Physics & Chemistry (Radiological Assessment Coordinator)	Report to the Technical Support Manager to conduct radiological assessment activities.	75 min.
Technical Support (Technical Support Manager)	Reports to the Corporate Response Manager to provide technical and evaluation support.	75 min.
Plan/Design/Construction (Resource Support Manager)	Reports to the Corporate Response Manager to provide engineering technical and vendor support in areas dealing with construction or design changes.	75 min.
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.

TABLE 5.23

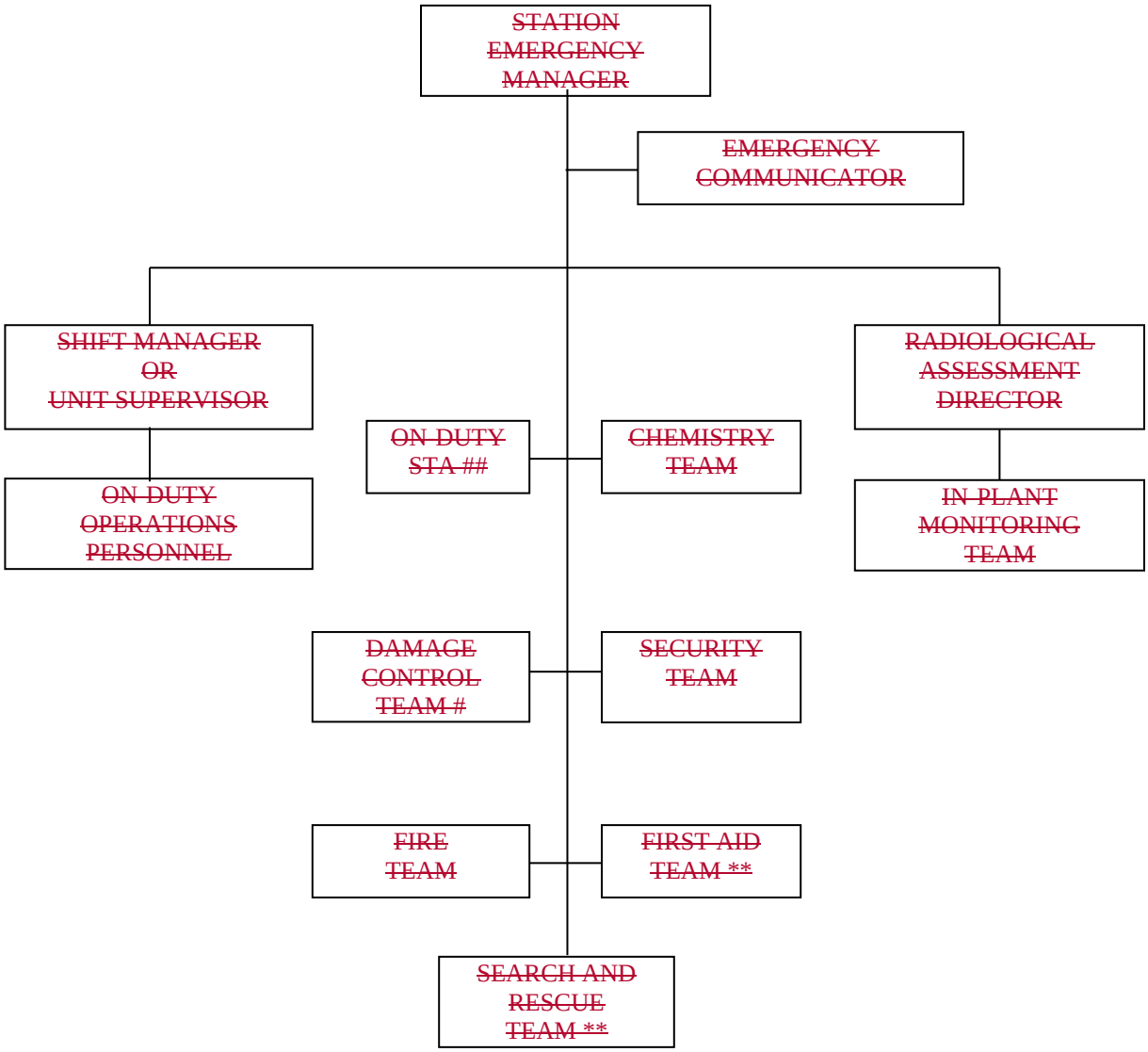
CITIES AND COUNTIES WITHIN THE NORTH ANNA 50 MILE EMERGENCY PLANNING ZONE **

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~~



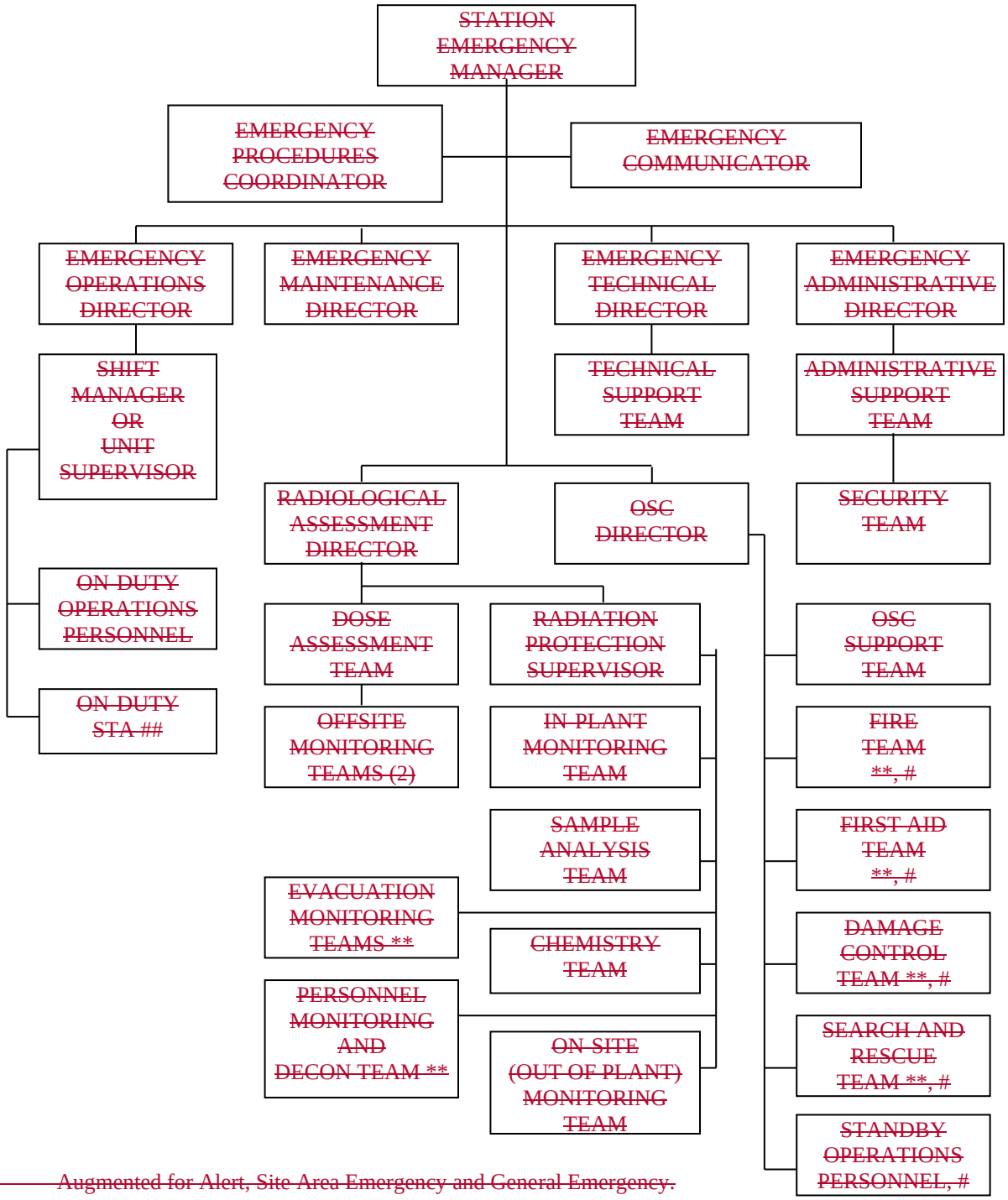
~~* Augmented for Alert, Site Area Emergency and General Emergency.~~

~~** 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~~

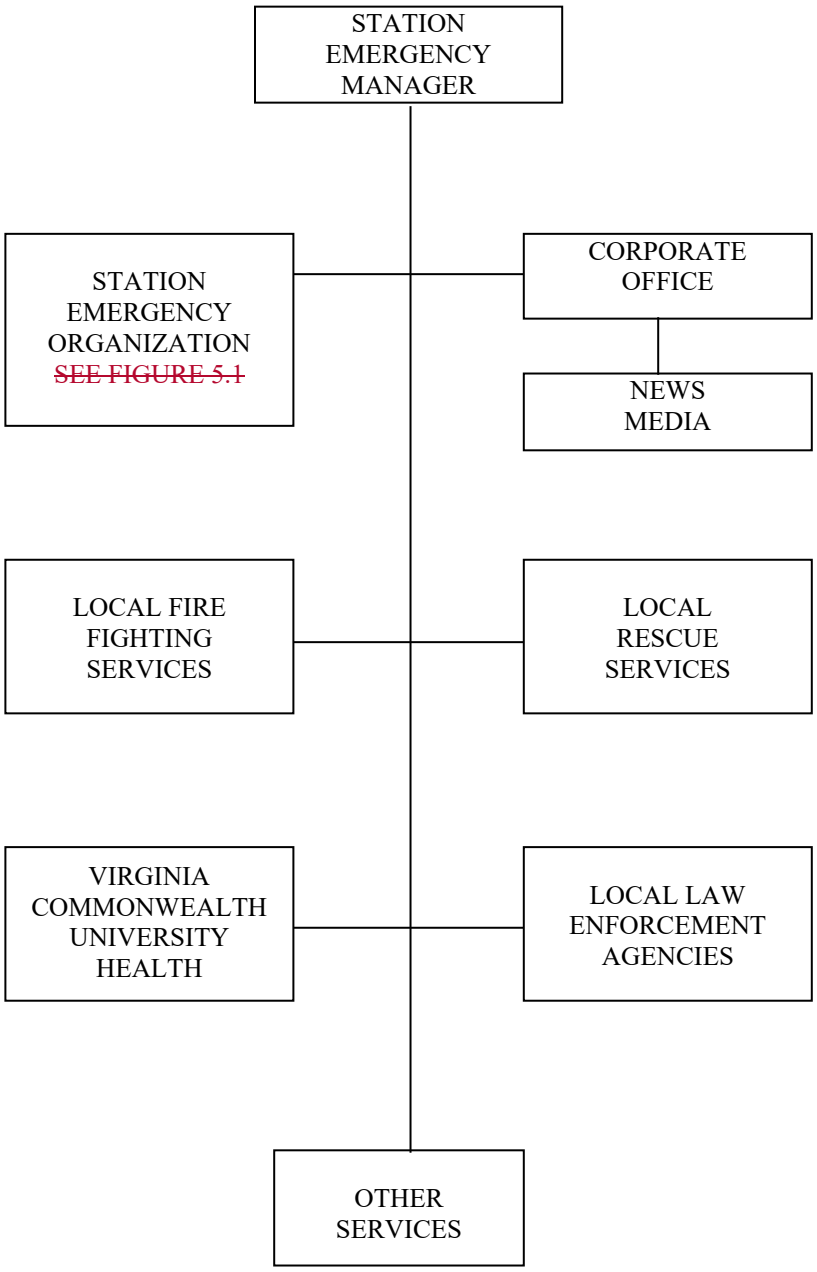


~~* Augmented for Alert, Site Area Emergency and General Emergency.~~

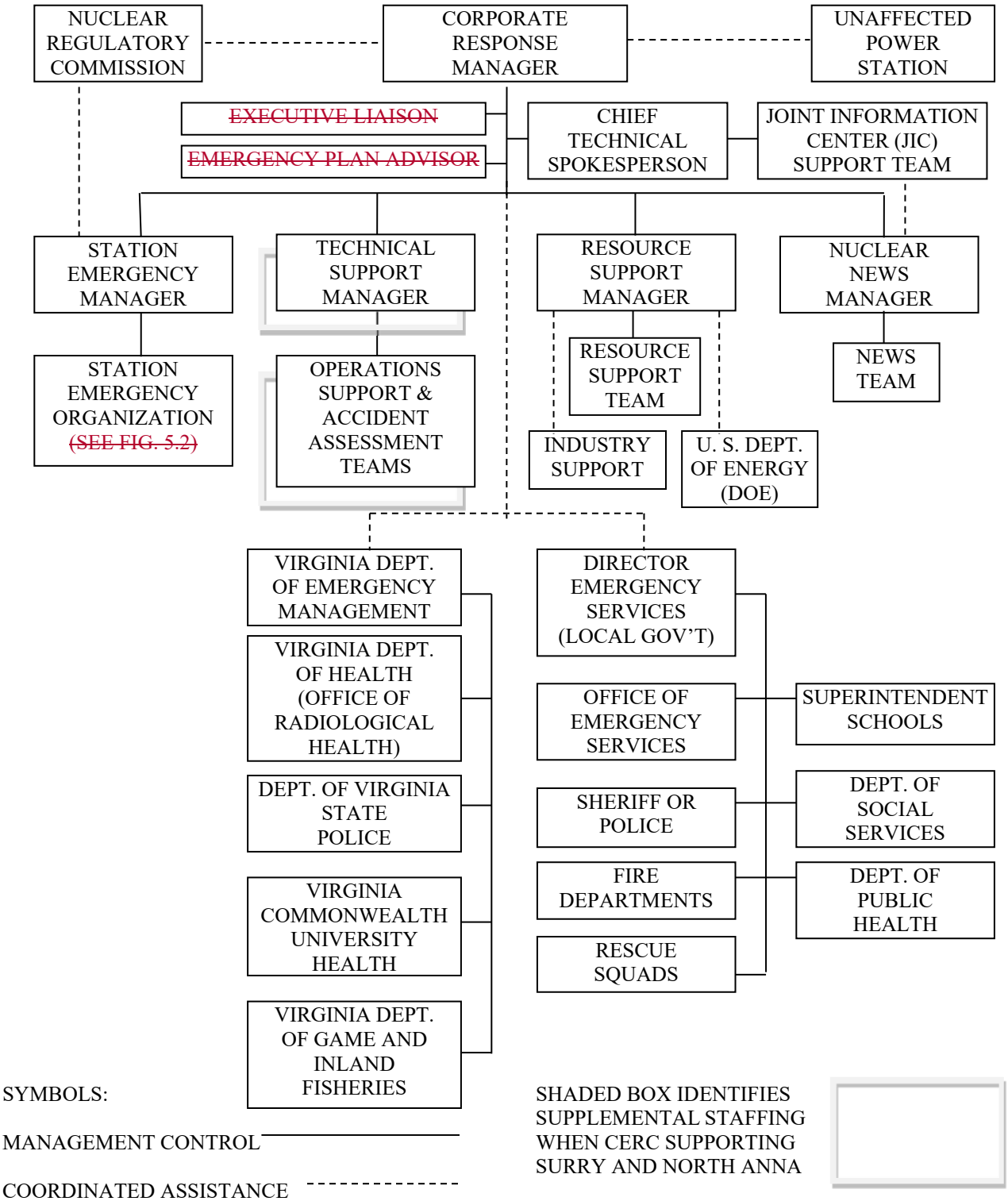
~~** This team will be activated only if circumstances require this function to be performed.~~

~~# 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.~~

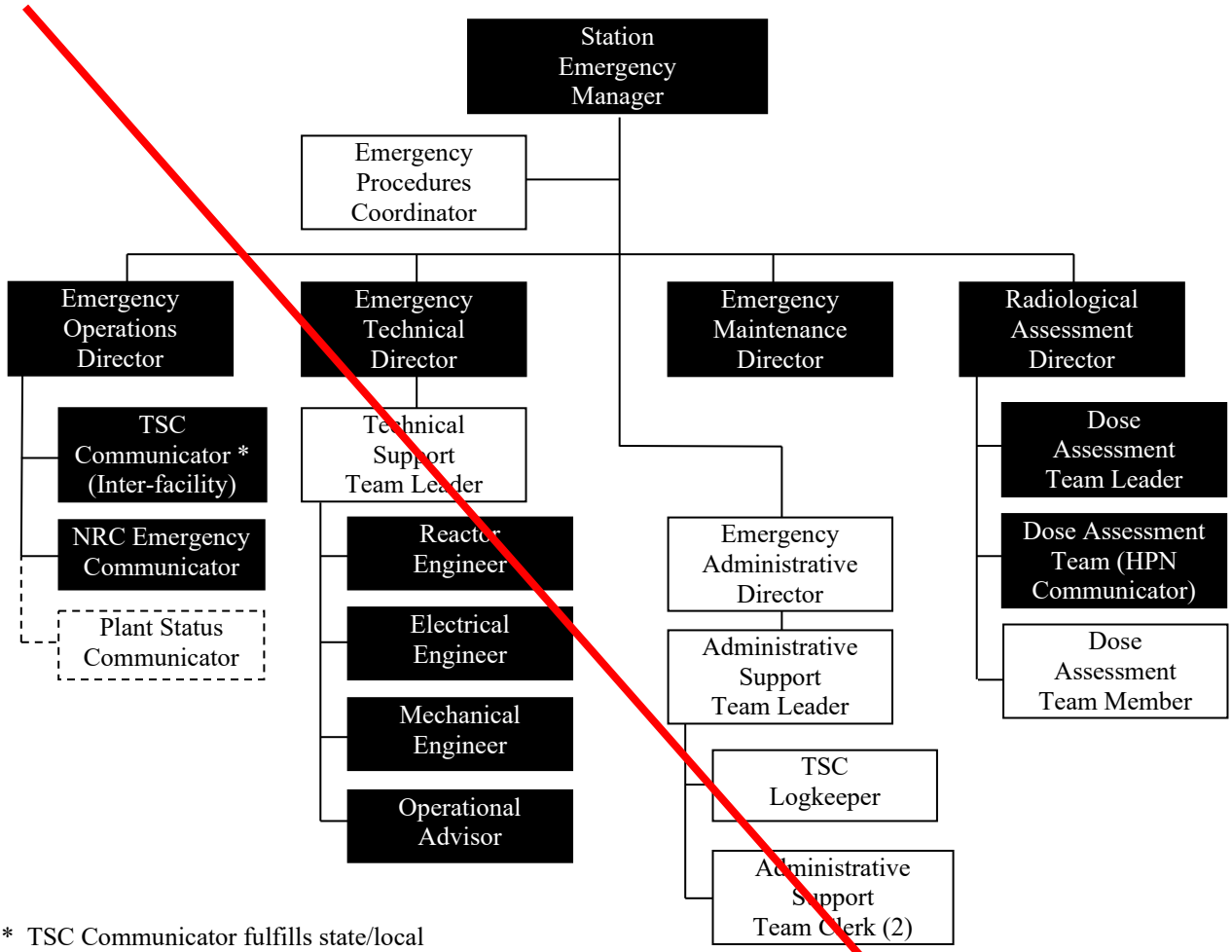
STATION TO SUPPORT GROUP INTERFACE
PRIOR TO AUGMENTATION OF THE EMERGENCY ORGANIZATION
FIGURE 5.1~~3~~



STATION TO SUPPORT GROUP INTERFACE FOLLOWING CERC ACTIVATION FIGURE 5.24



TECHNICAL SUPPORT CENTER ORGANIZATION
FIGURE 5.35~~.a~~

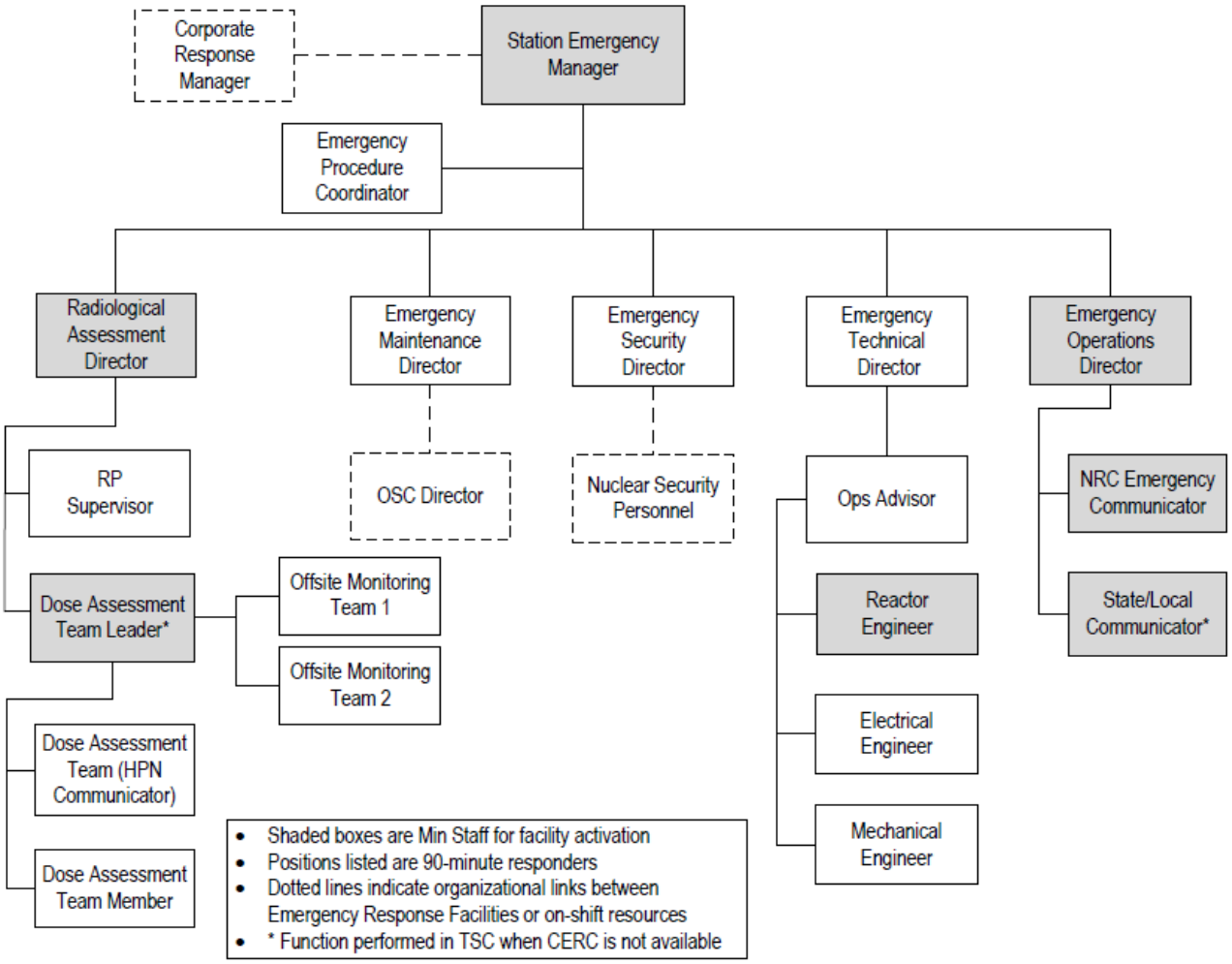


* TSC Communicator fulfills state/local notification function if EOF unavailable.

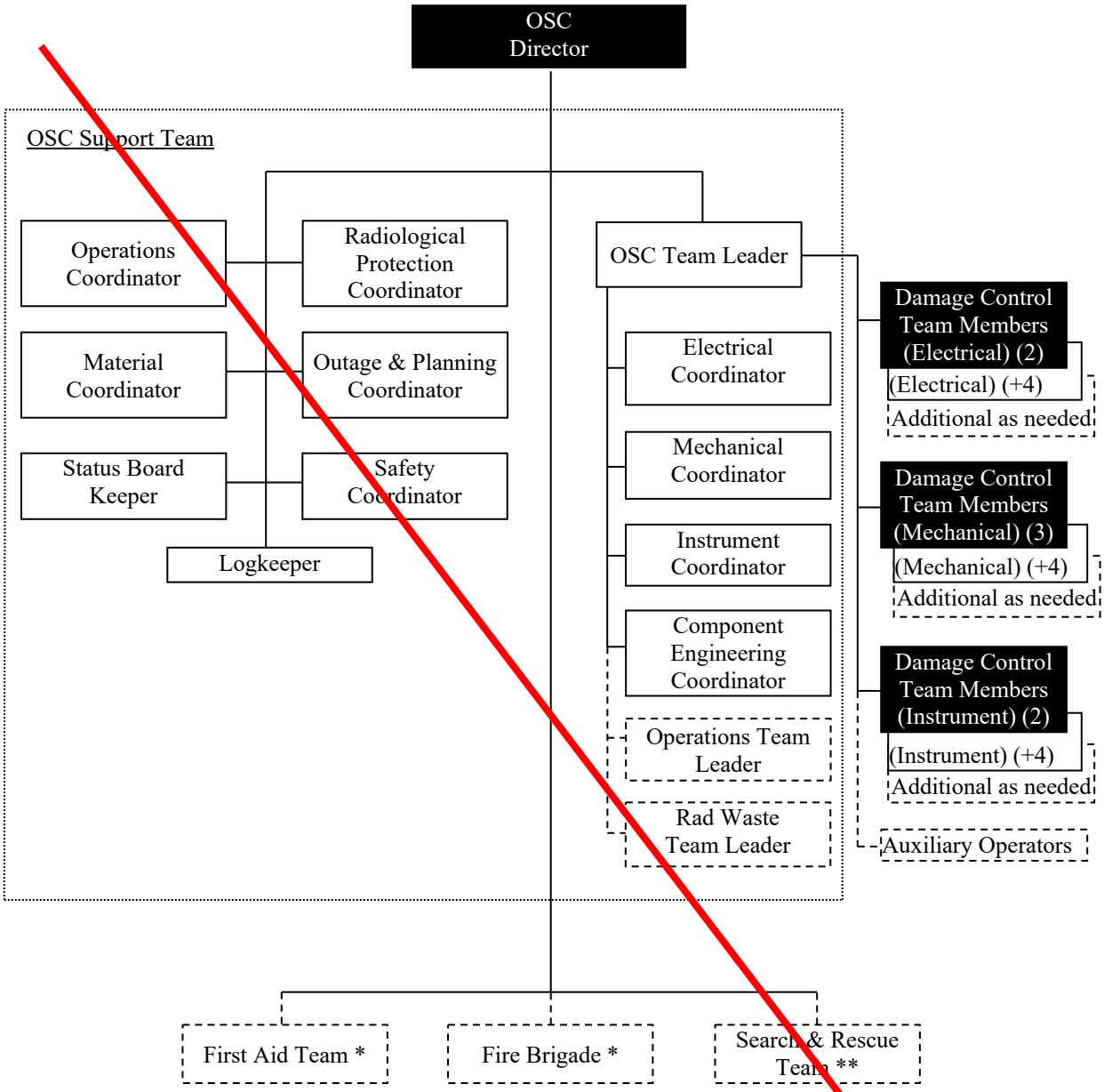
■ Indicates positions necessary for facility activation.

□ Indicates fully augmented organization positions.

⬚ Indicates position established if needed.


Corporate Response Manager
Station Emergency Manager
Emergency Procedure Coordinator
Radiological Assessment Director
Emergency Maintenance Director
Emergency Security Director
Emergency Technical Director
Emergency Operations Director
RP Supervisor
OSC Director
Nuclear Security Personnel
Ops Advisor
NRC Emergency Communicator
Dose Assessment Team Leader*
Offsite Monitoring Team 1
Offsite Monitoring Team 2
Reactor Engineer
State/Local Communicator*
Dose Assessment Team (HPN Communicator)
Electrical Engineer
Dose Assessment Team Member
Mechanical Engineer
• Shaded boxes are Min Staff for facility activation
• Positions listed are 90-minute responders
• Dotted lines indicate organizational links between Emergency Response Facilities or on-shift resources
• * Function performed in TSC when CERC is not available

OPERATIONAL SUPPORT CENTER ORGANIZATION
FIGURE 5.4~~5.b~~

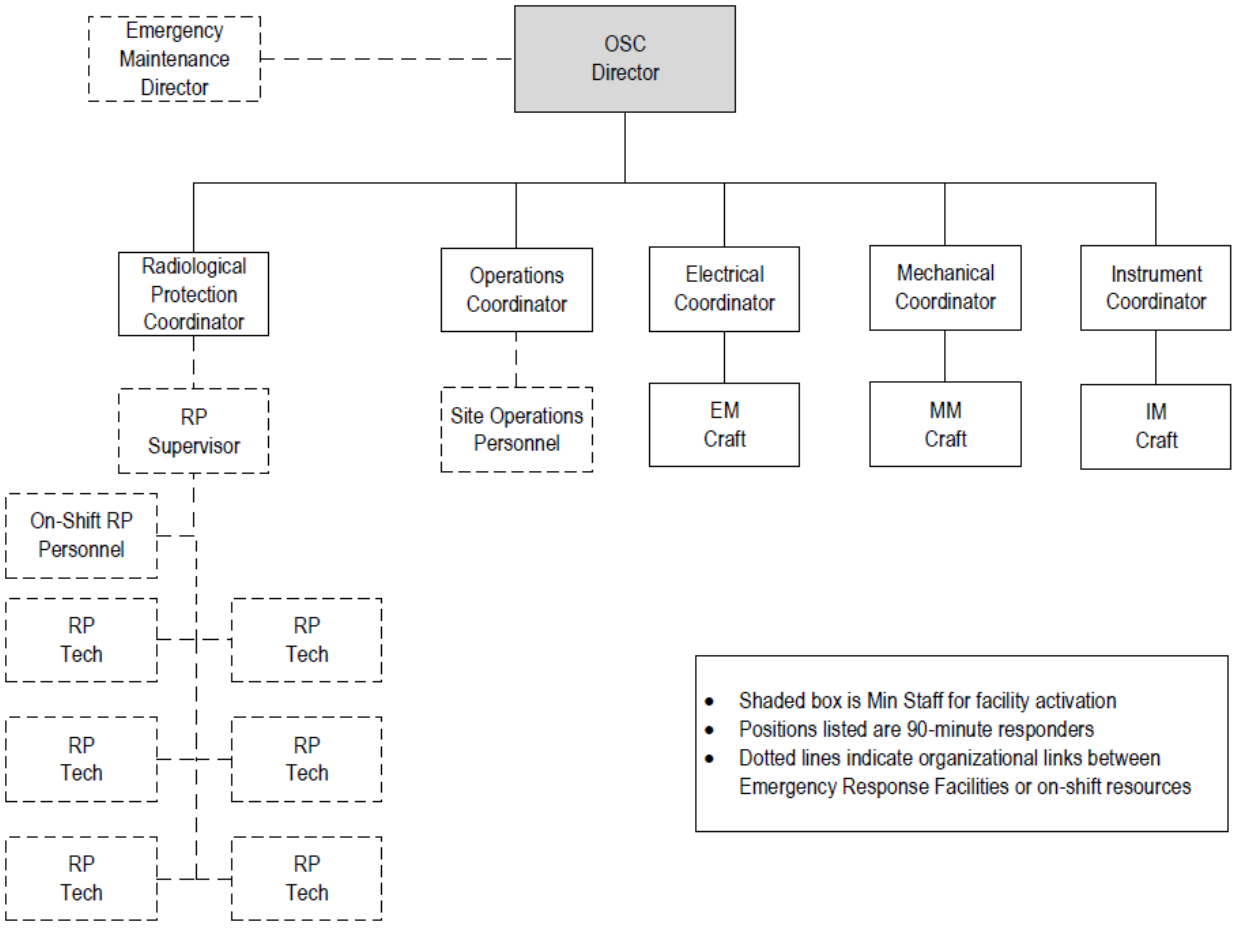


* First Aid Team and Fire Brigade functions are addressed by on-shift personnel.
Additional qualified personnel who report to the OSC may be designated for these functions.
** Search & Rescue Team formed from Fire Brigade/First Aid Team/Security staff as appropriate.

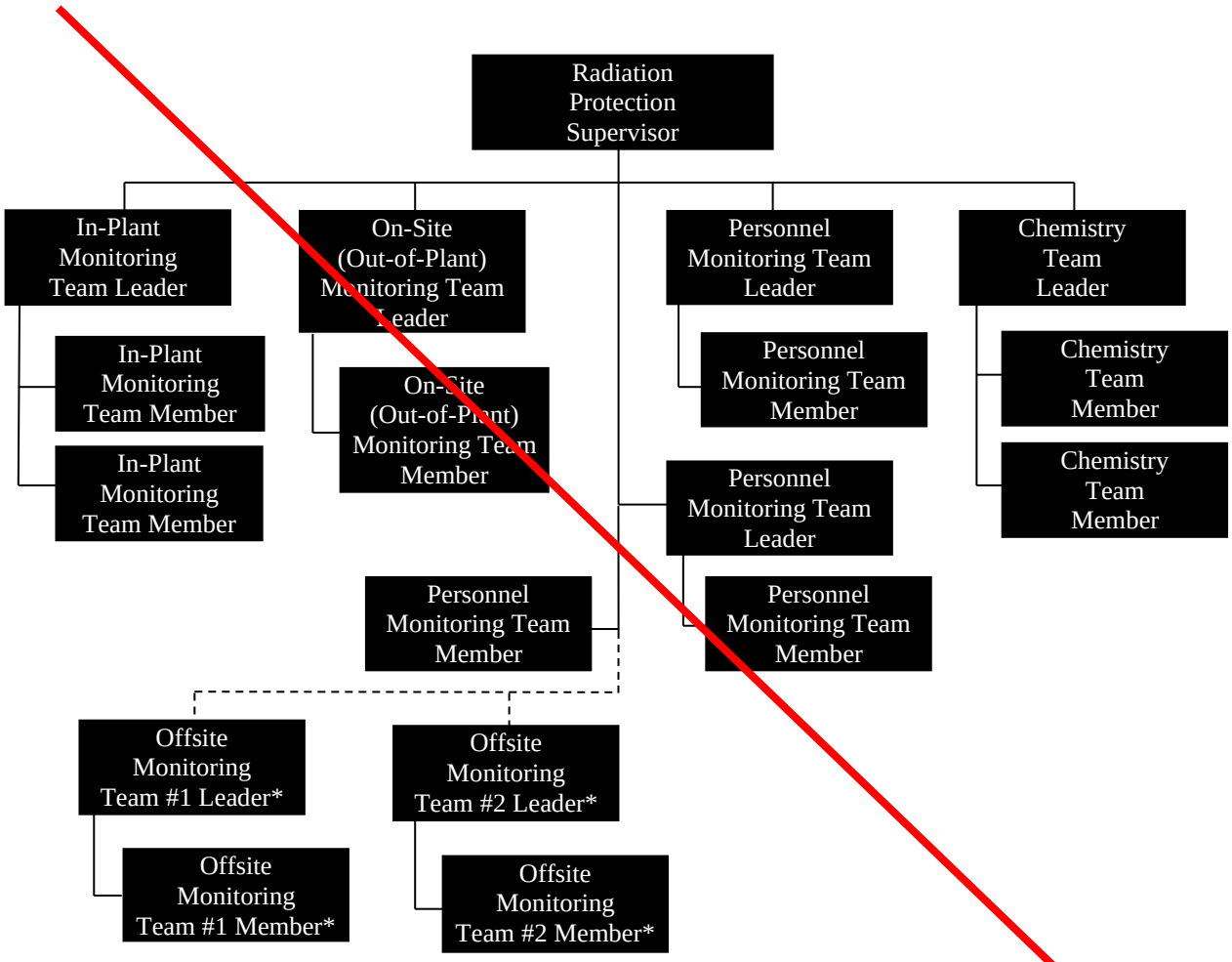
■ Indicates positions necessary for facility activation.

□ Indicates fully augmented organization positions.

⬚ Indicates team established as needed.


Emergency Maintenance Director
OSC Director
Radiological Protection Coordinator
Operations Coordinator
Electrical Coordinator
Mechanical Coordinator
Instrument Coordinator
RP Supervisor
Site Operations Personnel
EM Craft
MM Craft
IM Craft
On-Shift RP Personnel
RP Tech
RP Tech
RP Tech
RP Tech
RP Tech
RP Tech
• Shaded box is Min Staff for facility activation
• Positions listed are 90-minute responders
• Dotted lines indicate organizational links between Emergency Response Facilities or on-shift resources

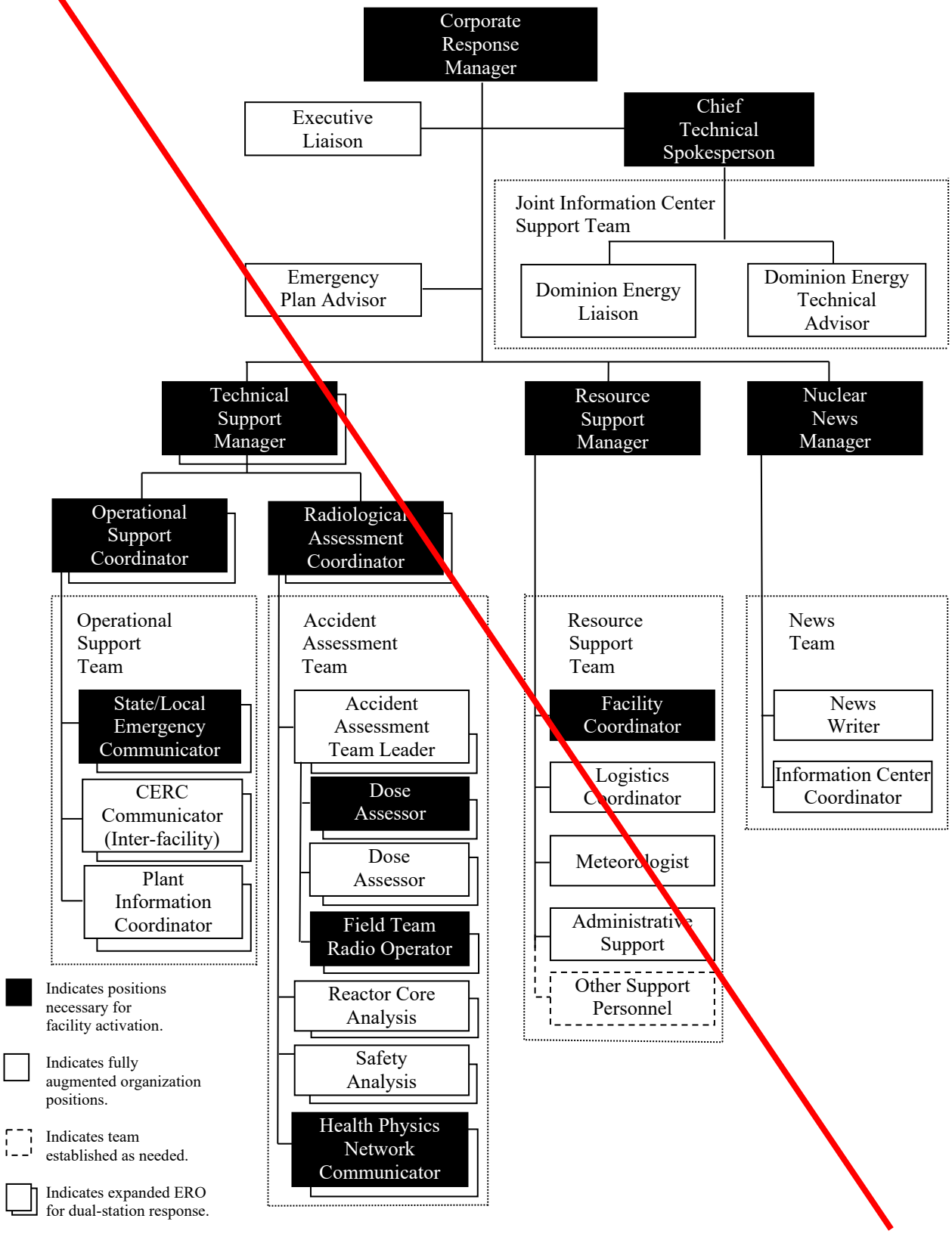
~~RADIATION PROTECTION ORGANIZATION~~
~~FIGURE 5.5.c~~

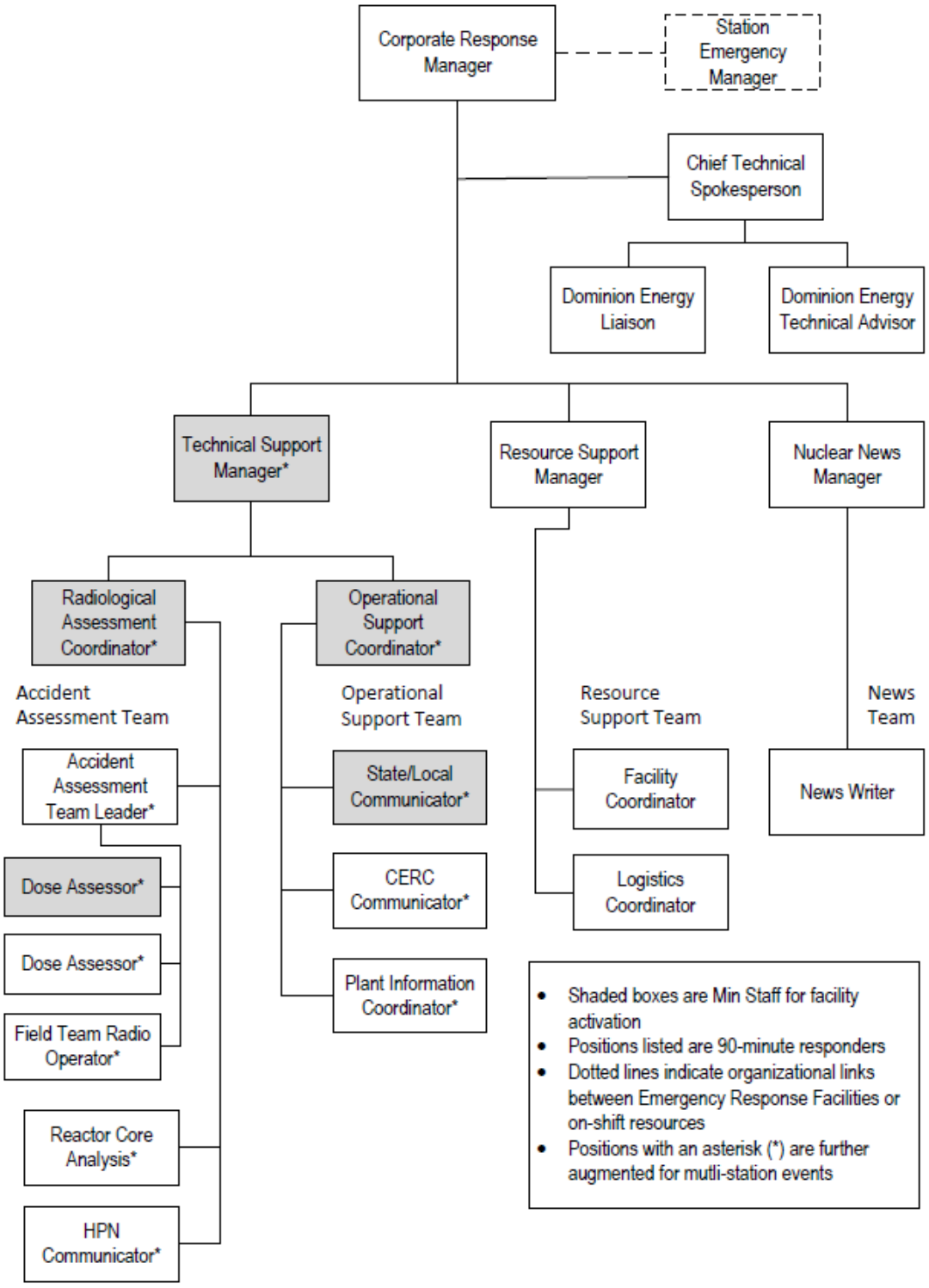


~~Indicates positions necessary following augmentation.~~

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

CORPORATE EMERGENCY RESPONSE CENTER ORGANIZATION
FIGURE 5.5-d




Corporate Response Manager
Station Emergency Manager
Chief Technical Spokesperson
Dominion Energy Liaison
Dominion Energy Technical Advisor
Technical Support Manager*
Resource Support Manager
Nuclear News Manager
Radiological Assessment Coordinator*
Operational Support Coordinator*
Accident Assessment Team
Operational Support Team
Resource Support Team
News Team
Accident Assessment Team Leader*
State/Local Communicator*
Facility Coordinator
News Writer
Dose Assessor*
CERC Communicator*
Logistics Coordinator
Dose Assessor*
Plant Information Coordinator*
Field Team Radio Operator*
Reactor Core Analysis*
HPN Communicator*
• Shaded boxes are Min Staff for facility activation
• Positions listed are 90-minute responders
• Dotted lines indicate organizational links between Emergency Response Facilities or on-shift resources
• Positions with an asterisk (*) are further augmented for mutli-station events

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 Technical Support Manager or the Station Emergency Manager ~~(if the 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 Adult CDE. A General Emergency will be declared when offsite Protective Action Guides (PAGs) of 1.0 Rem TEDE and/or 5.0 Rem Adult 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

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 Health 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 VCU Health from the station. The Station can also communicate with the ambulance by use of a UHF radio, and the ambulance can communicate with VCU Health by way of the HEAR system. In addition, arrangements have been made with local volunteer rescue squads to transport injured contaminated personnel to the VCU Health. 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 VCU Health. The approximate

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), and the Corporate Emergency Response Center (CERC). 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~~is 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 Corporate Emergency Response Center

The 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. 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.

7.1.5 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 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 CERC with the approval of the Corporate Response Manager.~~

7.1.6 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 CERC, control room, and plant security. The 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.

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 physically located in a facility appropriate for their specific security level. 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, and CERC.

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)~~

Corporate Emergency Response Center (CERC)

1. Dedicated voice communications to TSC, NANIC~~LMC~~, and VEOC
2. Dominion Energy Emergency Notification System (DEENS) 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

Near Site Location For Offsite Agency Coordination

1. Commercial phones
2. Computers with internet access

~~Local Media Center (Located in North Anna Nuclear Information Center)~~

~~1. Commercial Phones (Independent of Station PBX)~~
~~2. Dedicated voice communications to 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

OPX - Off-Premises Exchange
ENS - Emergency Notification System (NRC)
PBX - Private Branch Exchange
VEOC - Virginia Emergency Operations Center

TABLE 8.1

EMERGENCY PREPAREDNESS TRAINING

EMERGENCY RESPONSE POSITION	SCOPE OF TRAINING (See Footnotes, next page)
Station Emergency Manager	1, 2, 7, 123, 145
Emergency Communicator	1, 3, 123
Emergency Procedures Coordinator	1, 2, 123
Emergency Operations Director	1, 2, 123, 145
Emergency Maintenance Director	1, 4, 6, 123
Emergency Technical Director	1, 6, 123, 145
Shift Technical Advisor	1, 2, 123, 145
Emergency ~~Administrative~~Security Director	~~–~~1, 6, 7, 13
Radiological Assessment Director	1, 9, 10, 11, 123, 145
Radiation Protection Supervisor	1, 10, 11, 123
Operational Support Center Director	1, 4, 5, 123
OSC Support Team	1, 4, 6, 123
Technical Support Team	~~–~~1, 6, 123, 145
~~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, 123
Dose Assessment Team	~~–~~1, 9, 123
Sample Analysis and Monitoring Teams	1, 11, 123
~~Fire Brigade~~	~~1, 13, 14~~
~~First Aid Team~~	~~1, 13, 14~~
Damage Control Team	1, 4, 123
~~Search and Rescue Team~~	~~1, 13, 14~~
Corporate Response Manager and Technical Support Manager	1, 123, 156, 167
Nuclear News Manager and News Team	1, 123, 167, 178
Chief Technical Spokesperson and JIC Support Team	1, 123, 167, 178
~~Executive Liaison~~	~~1, 13, 16, 17~~
Operations Support Coordinator and Operations Support Team	1, 123, 145, 167
Radiological Assessment Coordinator	1, 9, 10, 123, 145, 167
Accident Assessment Team dose assessors	1, 9, 123, 167
HPN Communicator	1, 3, 123, 167
State & Local Emergency Communicator (CERC)	1, 3, 123, 167
CERC positions not listed above	1, 123, 167
~~Information Center Coordinators~~	~~1, 13, 19~~

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.~~

123. Training provided emphasizes: Organizational interfaces and responsibilities appropriate for individual position assignments.

134. 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.~~

145. Training provided emphasizes: Use of the Plant Computer System appropriate for individual position assignments.

156. Training provided emphasizes: Protective measures, notification systems and processes, offsite support group capabilities and interface, press release review, and recovery.

167. Training provided emphasizes: Activation and administration of the Corporate Emergency Response Center.

178. Training provided emphasizes: Staffing~~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.~~

ATTACHMENT 1-2

North Anna Power Station, Units 1 and 2:

Clean Emergency Plan Pages

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

Emergency Plan

Title: North Anna Power Station Emergency Plan

Revision Number:	**Effective Date:**
XX	TBD

Approvals on File

- 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.
- Facility Activation – An Emergency Response Facility is activated when the minimum staff per Figures 5.3, 5.4 and 5.5 are available and the facility is ready to assume assigned functions. Although the facility may be ready, the on-shift staff may prioritize completion of critical tasks prior to turnover.
- General Emergency - Events are in progress or have occurred which involve actual or imminent substantial core degradation or melting with potential for loss of containment integrity or HOSTILE ACTION that results in an actual loss of physical control of the facility. Releases can be reasonably expected to exceed 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.
- Nearsite – Within the Exclusion Area, but beyond Protected Area.
- Notification of Unusual Event - Events are in progress or have occurred which indicate a potential degradation of the level of safety of the plant or indicate a security threat to facility protection has been initiated. No releases of radioactive material requiring offsite response or monitoring are expected unless further degradation of safety related structures, systems, or components 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 progress 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

1.1 ACRONYMS AND ABBREVIATIONS

AC	-	Alternating Current
Asst.	-	Assistant
cc	-	Cubic Centimeter
Ce	-	Cerium
CDE	-	Committed Dose Equivalent
CEDE	-	Committed Effective Dose Equivalent
CERC	-	Corporate Emergency Response Center
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
DEENS	-	Dominion Energy Emergency Notification System
DEPT.	-	Department
DOE	-	Department of Energy
ESD	-	Emergency Security 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

LOCA	-	Loss of Coolant Accident
LW	-	Liquid Waste System
MCL	-	Management Counterpart Link
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

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 augmentation of the emergency response organization. They also provide techniques for estimating the consequences of offsite releases and making recommended Protective Action Recommendations.

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 emergency response facilities. Mobilization of the Offsite Monitoring Teams occurs at this point.

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.

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.

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 by the Station Emergency Manager in the onsite Technical Support Center (TSC).

The Corporate Emergency Response Center (CERC) is activated concurrent with the TSC. The CERC is staffed by corporate personnel, including the Corporate Response Manager and Technical Support Manager, who direct the activities of this facility. The Technical Support Manager is responsible for ensuring the 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 for dispatch of any special assistance or services requested by the station. The Corporate Response Manager has the ultimate authority to commit company resources and set policy as part of managing the long term recovery effort.

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.

The basic shift (back-shift) complement of personnel performing EP functions is comprised of Operations and Health Physics. In addition, technical/engineering support is available on all shifts from the Shift Technical Advisor (STA). Dominion Energy's Nuclear Facility Quality Assurance Program Description (Topical Report DOM-QA-1) provides the details of the normal station organization.

5.2 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 on-shift emergency organization prior to augmentation is shown in Table 5.1. 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 designated station personnel to commence callout of supplementary emergency response personnel. Table 5.1 also represents the minimum number of personnel that are required to activate the TSC, OSC and CERC and the estimated response times of these personnel.

The responsibilities of the emergency response personnel assigned EP functions on shift are consistent with the staffing level goals in NRC Revised 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.

5.2.1 Station Emergency Position and Team Descriptions

The Station Emergency Organization consists of at least the positions discussed below. Reporting relationships are as depicted in Figure 5.3, 5.4 and 5.5. 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 operates from the Technical Support Center. The SEM ultimately reports to the 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 CERC Technical Support Manager will be responsible for assuming the non-delegable 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 Communicators

The Emergency Communicators report to the SEM in the Control Room prior to activation of the TSC and CERC. The primary 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. Responsibility for Notification of State and local governments will transfer to the TSC or CERC upon activation of these facilities.

5.2.1.3 Emergency Procedures Coordinator

The Emergency Procedures Coordinator (EPC) reports to the SEM in the TSC, or wherever is necessary to support the SEM and emergency response operations, 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 Security Director

The Emergency Security Director (ESD) reports to the SEM in the TSC as part of the augmentation of the on-shift emergency organization. He acts as the liaison between site Security and the TSC and directs Security activities.

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 CERC.

Other duties of the Radiological Assessment Director are to provide the status of offsite releases to the Station Emergency Manager, 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 In Plant Monitoring, Personnel Monitoring and Decontamination, the Onsite (Out of Plant) Monitoring, and Evacuation Monitoring functions. He will also provide radiological support, as needed, to 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 staffed. 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 planning, scheduling and material requisitioning in support of damage control tasks. The OSC Director is also responsible for accountability, dispatch and control of response teams.

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.

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 TSC is activated.

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 Security Team

The Security Team reports to the ESD. 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.

5.2.1.15 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 CERC upon full staffing of that facility. The Dose Assessment Team will then provide support to the RAD regarding onsite response and interface with the CERC.

5.2.1.16 Offsite Monitoring Teams

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

5.2.1.17 Evacuation Monitoring Team

This Team is under the direction of Radiation Protection Supervisor and is staffed 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.

5.2.1.18 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 Damage Control Team, if required.

5.2.1.19 Personnel Monitoring and Decontamination Team

This Team reports to the RPS in the Station HP Office. The Team will monitor personnel, decontaminate personnel, if required.

5.2.1.20 Onsite (Out of Plant) Monitoring Team

An RP Technician reports to the RPS and operates out of the Station HP Office. The RP Technician will perform monitoring and sample collection within the protected area.

5.2.1.21 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.

5.2.2 Corporate Emergency Position and Team Descriptions

The CERC Emergency Organization consists of at least the positions discussed below. Reporting relationships are as depicted in Figure 5.3. 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 staffed 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 Support Manager, the Nuclear News Manager, the Chief Technical Spokesperson.

5.2.2.2 Technical Support Manager

The Technical Support Manager (TSM) reports to the CRM and is responsible for the command functions related to prompt and accurate dose assessments; notifying state and local governments of the emergency status and any changes in a timely manner and assessing and providing protective action recommendations to offsite authorities. The TSM is also responsible for 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 Support Manager

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

5.2.2.7 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.

5.2.2.8 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.

5.2.2.9 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 5.2.1.15, and establish the Health Physics Network (HPN) when requested by the NRC.

5.2.2.10 Resource Support Team

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

5.2.2.11 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.

5.2.2.12 Joint Information Center Support Team

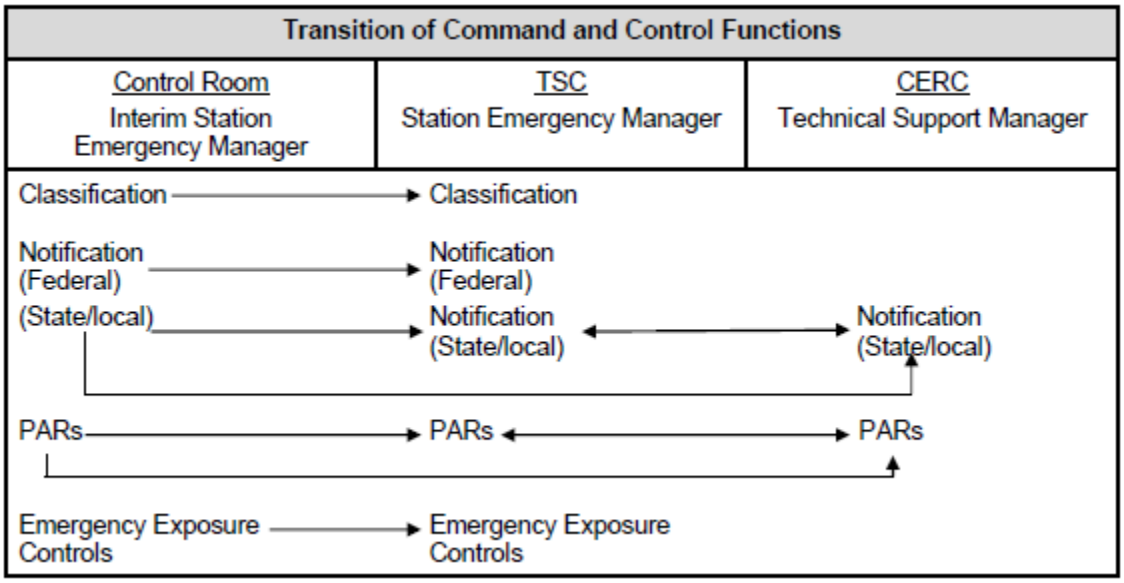
The Joint Information Center Support Team will assist the CTS by providing technical advice and interface with offsite response organization public information staff at the JIC, when staffed.

5.3 AUGMENTATION OF 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 in Appendix 10.1 of this Plan.

If conditions at the Station require an Alert or higher classification, the CERC, TSC and OSC shall be activated. The facility activation goal for the TSC, OSC and CERC is approximately 90 minutes from the declaration of an Alert or higher emergency classification. The Station Emergency Manager would normally forward information or request additional support through the Corporate Response Manager located in the

CERC (See Figure 5.5). Additional resources shall be obtained through personnel assigned to the CERC. Those additional personnel directed to report to the site during the emergency shall report to the Station Emergency Manager for assignment. Figures 5.3, 5.4, and 5.5 display minimum staff required for activation for each facility. The transition of command and control functions from the Control Room to the TSC and CERC is outlined below.



5.3.1 Notification and Response

The emergency response organization (ERO) is notified to augment in the event of an Alert, Site Area Emergency or General Emergency. The following functions 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 CERC.

5.3.1.2 Logistics Support for Emergency Personnel

The CERC Resource Support 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 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.

5.3.1.4 Interface with Governmental Authorities

CERC management is responsible for contacting governmental agencies when coordinating mobilization of resources or requesting additional support. The 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 when staffed.

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, 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:

- Virginia Department of General Services, Division of Consolidated Laboratory Services, Richmond, VA (75 minutes)
- 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.

Virginia Commonwealth University Health has developed an Emergency Plan designed to provide medical care in the case of a radiation emergency. The VCU Health 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 VCU Health 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

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 5.2. 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 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 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

Major Functional Area	Major Tasks	Position Title/Expertise	Proposed On-Shift	Capability for Additions 90 min
Emergency Direction and Control	Oversight	Unit Shift Supervisor (SRO)	2	------
		Technical Support Manager (CERC)	------	1
	Classification	Shift Manager (SRO)	1	------
		Station Emergency Manager (TSC)	------	1
		Emergency Operations Director (TSC)	------	1
Notification/ Communication	Licensee, Local/State Federal personnel and maintain communication	Emergency Communicator (SRO/RO/NO)	2	------
		State/local Communicator (CERC)	------	1
		NRC Emergency Communicator (TSC)	------	1
		State/local Communicator (TSC)	------	1
Radiological Accident Assessment	Offsite Dose Assessment	RP Technician	1	------
		Rad Assessment Coordinator (CERC)	------	1
		Dose Assessment Team Member (CERC)	------	1
		Operational Support Coordinator (CERC)	------	1
		Radiological Assessment Director (TSC)	------	1
		Dose Assessment Team Leader (TSC)	------	1
	Offsite Surveys	Offsite Monitoring Team Leader	------	2
		Offsite Monitoring Team Member	------	2
	In-plant/Onsite (out-of-plant) Surveys	RP Technician	1	2
	Protective Actions	RP Technician	1	4
Plant System Engineering	Technical Support	Shift Technical Advisor (SRO/STA)	1	------
		Reactor Engineer (TSC)	------	1
		Electrical Engineer (TSC)	------	1
		Mechanical Engineer (TSC)	------	1
Repair and Corrective	Repair and Corrective Actions	Mechanical Maintenance (OSC)	------	1
		Electrical Maintenance (OSC)	------	1
		I&C Maintenance (OSC)	------	1
		OSC Director (OSC)	------	1
		Mech. Maint. Coordinator (OSC)	------	1
		Elec. Maint. Coordinator (OSC)	------	1
		I&C Maint. Coordinator (OSC)	------	1
		RP Coordinator (OSC)	------	1
Total			**9**	**32**

TABLE 5.2

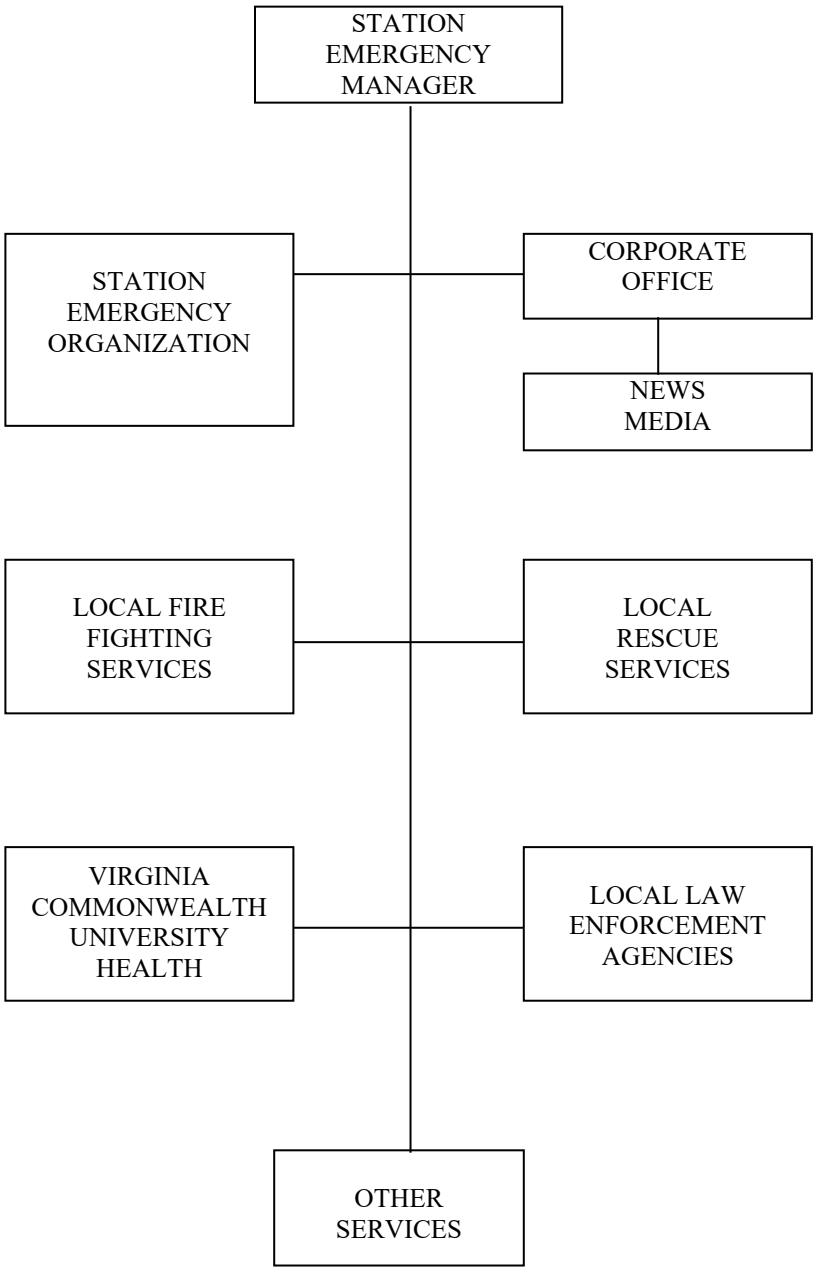
CITIES AND COUNTIES WITHIN THE NORTH ANNA 50 MILE EMERGENCY PLANNING ZONE **

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

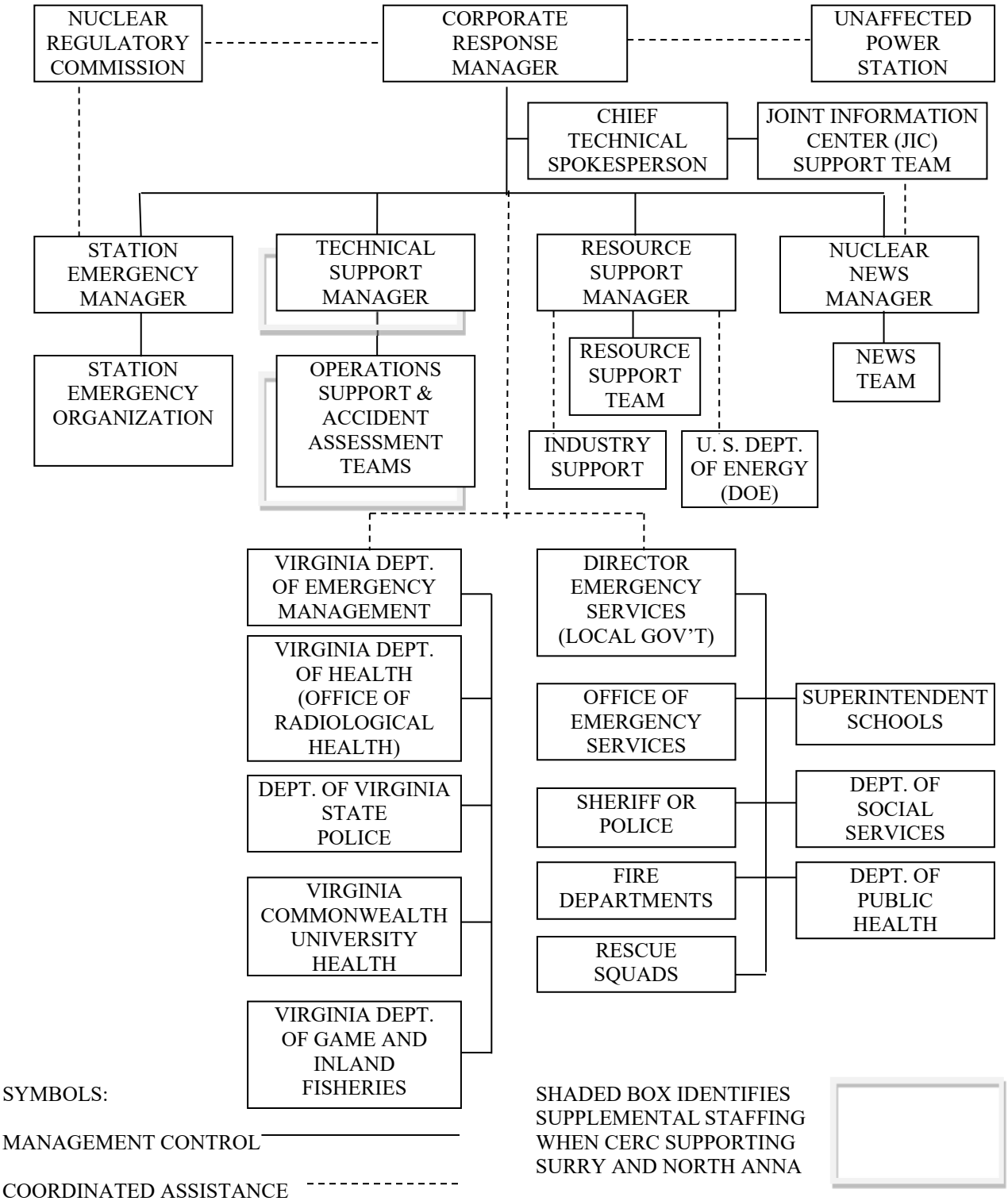
* Within 50 miles of both Surry and North Anna

** 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).

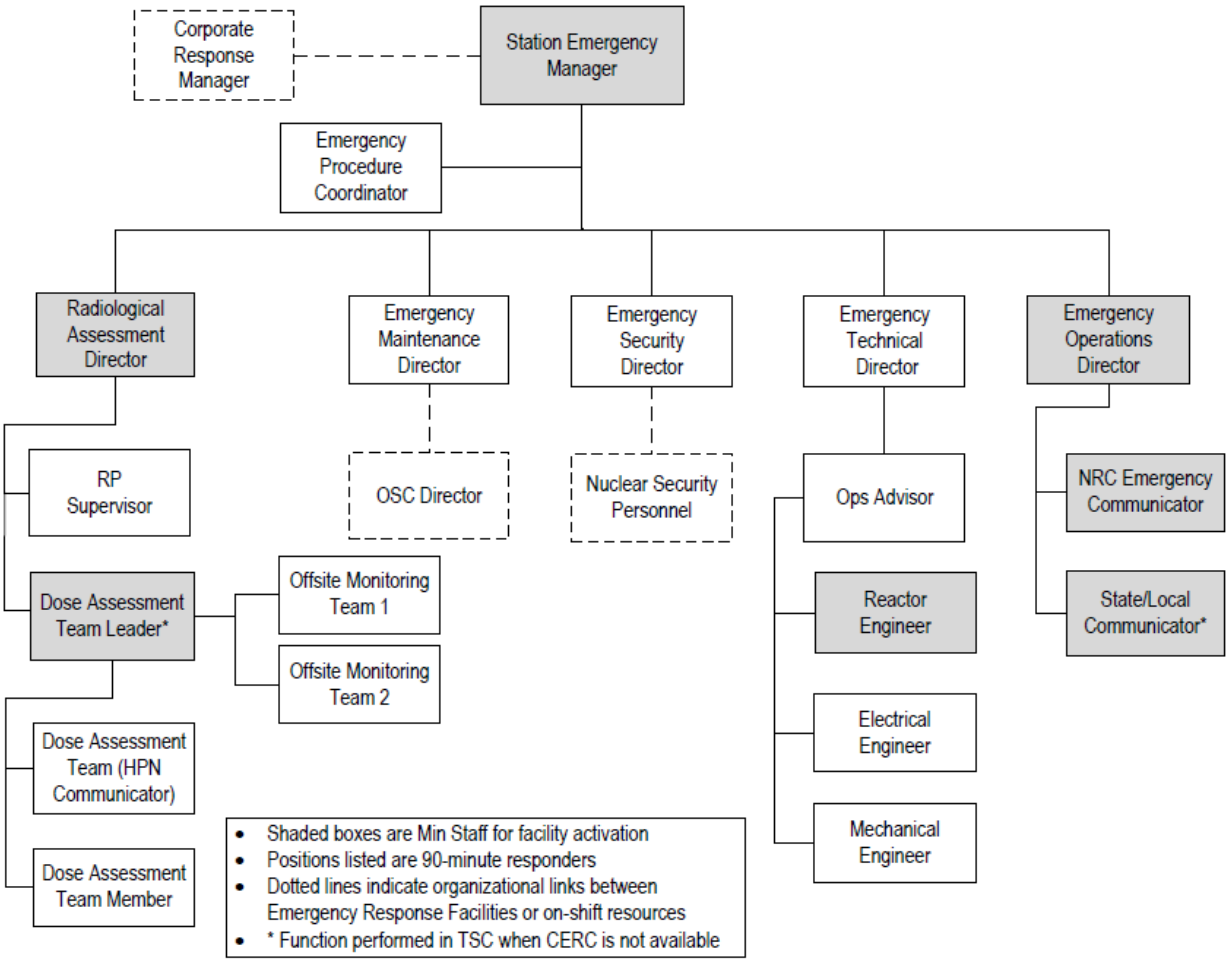
STATION TO SUPPORT GROUP INTERFACE
PRIOR TO AUGMENTATION OF THE EMERGENCY ORGANIZATION
FIGURE 5.1



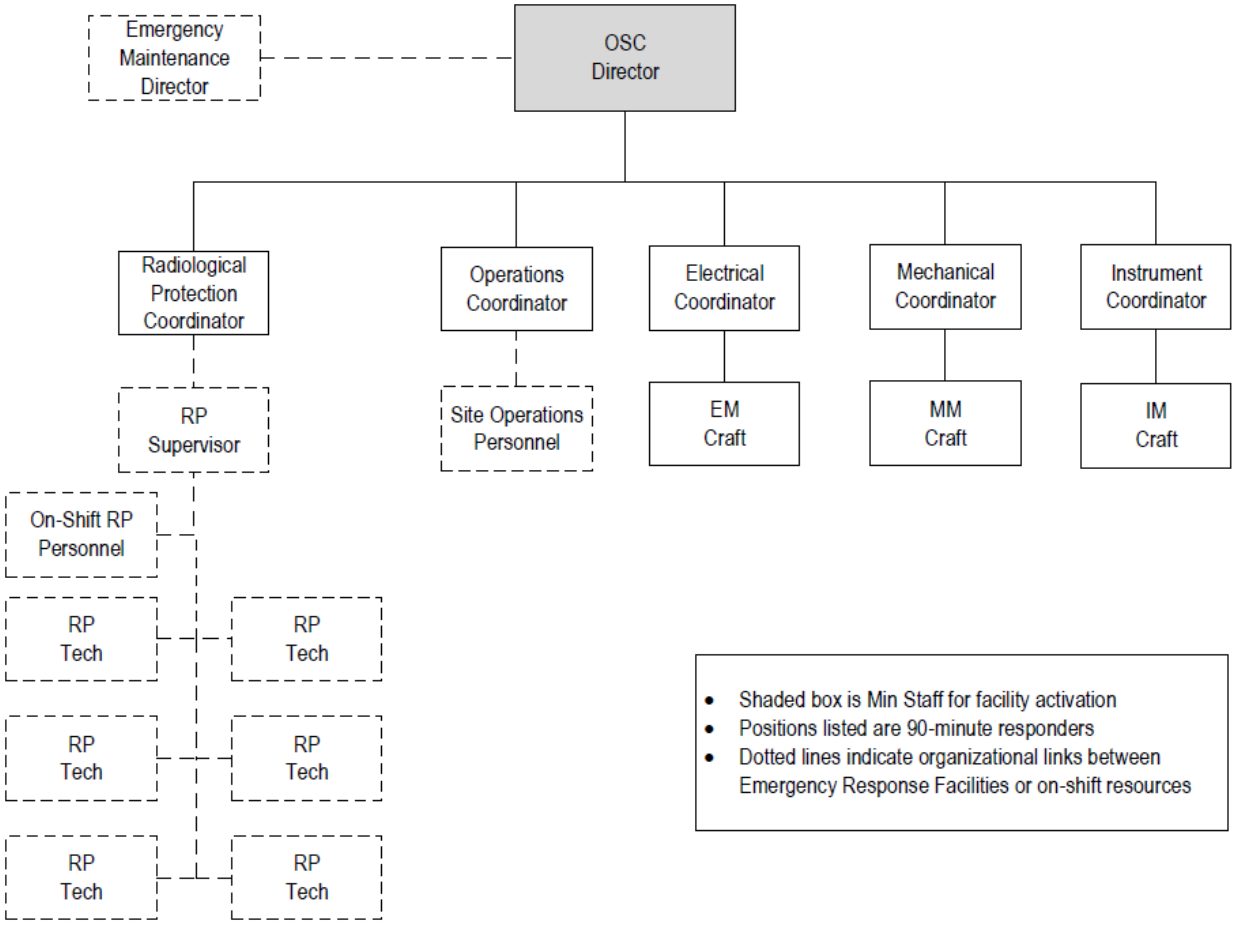
STATION TO SUPPORT GROUP INTERFACE
FOLLOWING CERC ACTIVATION
FIGURE 5.2



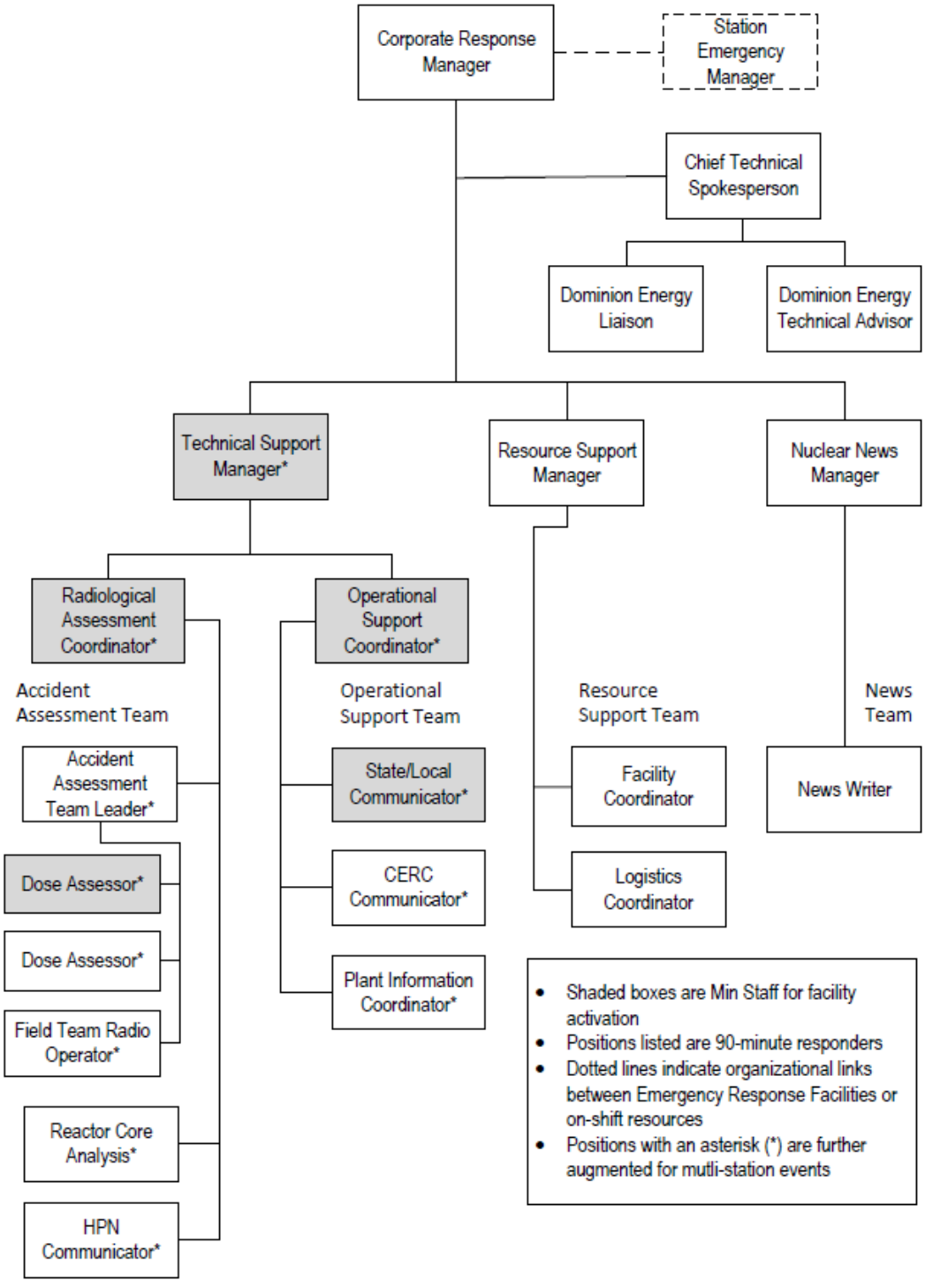
TECHNICAL SUPPORT CENTER ORGANIZATION
FIGURE 5.3



OPERATIONAL SUPPORT CENTER ORGANIZATION
FIGURE 5.4



CORPORATE EMERGENCY RESPONSE CENTER ORGANIZATION
FIGURE 5.5



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 Technical Support Manager or the Station Emergency Manager 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 Adult CDE. A General Emergency will be declared when offsite Protective Action Guides (PAGs) of 1.0 Rem TEDE and/or 5.0 Rem Adult 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

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.

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 Health 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 VCU Health from the station. The Station can also communicate with the ambulance by use of a UHF radio, and the ambulance can communicate with VCU Health by way of the HEAR system. In addition, arrangements have been made with local volunteer rescue squads to transport injured contaminated personnel to the VCU Health. 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 VCU Health. The approximate time to transport a patient to VCU Health is 75 minutes. The estimated time for local rescue squads to arrive at the station is 30 minutes.

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), and the Corporate Emergency Response Center (CERC). 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) is 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 Corporate Emergency Response Center

The 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. 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.

7.1.5 Joint Information 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 at the CERC.

7.1.6 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 CERC, control room, and plant security. The 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.

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 physically located in a facility appropriate for their specific security level. 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, and CERC.

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.

Corporate Emergency Response Center (CERC)

1. Dedicated voice communications to TSC, NANIC, and VEOC
2. Dominion Energy Emergency Notification System (DEENS) 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

Near Site Location For Offsite Agency Coordination

1. Commercial phones
2. Computers with internet access

Legend

OPX - Off-Premises Exchange
ENS - Emergency Notification System (NRC)
PBX - Private Branch Exchange
VEOC - Virginia Emergency Operations Center

TABLE 8.1

EMERGENCY PREPAREDNESS TRAINING

EMERGENCY RESPONSE POSITION	SCOPE OF TRAINING (See Footnotes, next page)
Station Emergency Manager	1, 2, 7, 12, 14
Emergency Communicator	1, 3, 12
Emergency Procedures Coordinator	1, 2, 12
Emergency Operations Director	1, 2, 12, 14
Emergency Maintenance Director	1, 4, 6, 12
Emergency Technical Director	1, 6, 13, 14
Shift Technical Advisor	1, 2, 13, 14
Emergency Security Director	1, 6, 7, 13
Radiological Assessment Director	1, 9, 10, 11, 12, 14
Radiation Protection Supervisor	1, 10, 11, 12
Operational Support Center Director	1, 4, 5, 12
OSC Support Team	1, 4, 6, 12
Technical Support Team	1, 6, 12, 14
Security Team	1, 8, 12
Dose Assessment Team	1, 9, 12
Sample Analysis and Monitoring Teams	1, 11, 12
Damage Control Team	1, 4, 12
Corporate Response Manager and Technical Support Manager	1, 12, 15, 16
Nuclear News Manager and News Team	1, 12, 16, 17
Chief Technical Spokesperson and JIC Support Team	1, 12, 16, 17
Operations Support Coordinator and Operations Support Team	1, 12, 14, 16
Radiological Assessment Coordinator	1, 9, 10, 12, 14, 16
Accident Assessment Team dose assessors	1, 9, 12, 16
HPN Communicator	1, 3, 12, 16
State & Local Emergency Communicator (CERC)	1, 3, 12, 16
CERC positions not listed above	1, 12, 16

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: Organizational interfaces and responsibilities appropriate for individual position assignments.

13. Training provided emphasizes: Emergency organizational interfaces, search and rescue procedures, and communications systems.

14. Training provided emphasizes: Use of the Plant Computer System appropriate for individual position assignments.

15. Training provided emphasizes: Protective measures, notification systems and processes, offsite support group capabilities and interface, press release review, and recovery.

16. Training provided emphasizes: Activation and administration of the Corporate Emergency Response Center.

17. Training provided emphasizes: Staffing and administration of the Joint Information Center appropriate for individual position assignments.

ATTACHMENT 1-3

North Anna Power Station, Units 1 and 2:

Table B-1 Comparison

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

North Anna (NAPS) *On-Shift* Table Comparison

Major Functional Area and Tasks	Position Title / Expertise	0654 Rev 1 Table B-1 On-shift	NAPS Rev 48 On-Shift	NAPS Rev 52 On-Shift	0654 Rev 2 Table B-1 On-Shift	NAPS Proposed On-shift
Plant Operation and Assessment of Operation Aspects	Shift Manager (SM) / Emergency Director ED)	1	1	1	1	1
	Shift Supervisor (SRO)	1	2	2		2
	Control Room Operator (RO)	2	4	4		
	Control Room Operator (AO)	2	8	8		
Emergency Direction and Control (Emergency Coordinator) ***	Shift Support Supervisor (SRO/FBL)	1**	1**	1**		1**
Notification / Communication **** State/Local and Federal	State/local/Federal (SRO/RO/SO)	1****	2**	2**	1*	2
Radiological Accident Assessment						
- Dose Assessment	Dose Assessor		1	1	1*	1
- In-Plant/Onsite Surveys	RP Technician	1	1	1		1
- Chemistry Radiochemistry	Chemistry Technician	1	1	1		
- Protective Actions	RP Technician	2**	2**	2**	1	1
Plant System Engineering / Technical Support	Shift Support Supervisor (SRO/STA)	1	1	1	1	1
Repair and Corrective Actions	Radwaste Operator					
	Electrical Maintenance	1**	1	1		
	Mechanical Maintenance	1**	1	1		
	I&C Maintenance					
Firefighting	Fire Department per Tech Specs					
Rescue Operations and First-Aid		2**	1	1		
Site Access Control and Personnel Accountability	Security personnel per security plan					
Total On-Shift		**10**	**22**	**22**	**5**	**9**

*Mechanical and Electrical maintenance personnel are normally on-shift 16 hours per day 7 days per week,
**May be provided by shift personnel assigned other functions
***Overall direction of facility response to be assumed by EOF director when all centers fully manned
****May be performed by engineering aide to shift supervisor

North Anna (NAPS) *30 Minute Alert or Greater* Augmented ERO Table Comparison

Major Functional Area	Position Title / Expertise	0654 Rev 1 Table B-1 Augment (30 min)	NAPS Rev 48 (45 min)	NAPS Rev 52 (45 min)	0654 Rev 2 Table B-1 (30-min)	NAPS Proposed (45 min)
Command and Control	Emergency Coordinator					
Classification	Classification Advisor					
Notification / Communication	State/local	1				
	Federal					
Radiological Accident Assessment	Senior Manager/ Site RP Coordinator					
- Dose Assessment	Dose Assessor	1	1	1		
- In-Plant/Onsite Surveys	RP Technician	2	3	3		
- Chemistry Radiochemistry	Chemistry Technician					
- Protective Actions	RP Technician	2	1	1		
- Offsite Surveys	Team Lead and Driver	2	2	2		
Plant System Engineering / Technical Support	Ops Advisor					
	Core/Thermal Hydraulics Eng	1				
	Engineering Engineer					
	Mechanical Engineer					
	Engineering Support Supervisor					
Repair and Corrective Actions	Mechanical Maintenance	1	1	1		
	Electrical Maintenance	1	1	1		
	RP					
	Damage Control Team Coord					
	Field Team Director					
Total Augmented ERO		**11**	**9**	**9**		

North Anna (NAPS) *60 Minute Alert or Greater* Augmented ERO Table Comparison

Major Functional Area	Position Title / Expertise	0654 Rev 1 Table B-1 Augment (60 min)	NAPS Rev 48 (60 min)	NAPS Rev 52 (60 min)	0654 Rev 2 Table B-1 (60-min)	NAPS Proposed (60 min)
Command and Control	Emergency Coordinator		1	1	1	
Classification	Classification Advisor				1	
Notification / Communication	State/local	1	2	2	2	
	Federal					
Radiological Accident Assessment	Senior Manager/ Site RP Coordinator				1	
- Dose Assessment	Dose Assessor	1			1	
- In-Plant/Onsite Surveys	RP Technician	2	1	1	2	
- Chemistry Radiochemistry	Chemistry Technician		2	2		
- Protective Actions	RP Technician	2	3	3	1	
- Offsite Surveys	Team Lead and Driver	2	2	2	2	
Plant System Engineering / Technical Support	Ops Advisor		1	1		
	Core/Thermal Hydraulics Eng	1	1	1	1	
	Engineering Engineer		1	1	1	
	Mechanical Engineer		1	1	1	
Repair and Corrective Actions	Mechanical Maintenance	1	2	2	1	
	Electrical Maintenance	1	1	1	1	
	I&C Maintenance		1	1	1	
Total Augmented ERO		**11**	**19**	**19**	**17**	**0**

North Anna (NAPS) *60 Minute SAE or Greater* Augmented ERO Table Comparison

Major Functional Area	Position Title / Expertise	0654 Rev 1 Table B-1 Augment (60 min)	NAPS Rev 48 (75 min)	NAPS Rev 52 (75 min)	0654 Rev 2 Table B-1 (60-min)	NAPS Proposed (75 min)
Command and Control	Emergency Director		1	1	1	
Notification / Communication	State/local/Federal	2			1	
Radiological Accident Assessment	Senior Manager/ Site RP Coordinator	1	1	1	1	
- Dose Assessment	Dose Assessor				1	
- In-Plant/Onsite Surveys	RP Technician					
- Chemistry Radiochemistry	Chemistry Technician	1				
- Protective Actions	RP Technician	1				
- Offsite Surveys	Team Lead and Driver					
Plant System Engineering / Technical Support	Ops Advisor					
	Core/Thermal Hydraulics Eng					
	Engineering Engineer	1				
	Mechanical Engineer	1				
	Technical Support Manager		1	1		
	Resource Support Manager		1	1		
Repair and Corrective Actions	Mechanical Maintenance	1				
	Electrical Maintenance					
	I&C Technician	1				
News Center	Chief Technical Spokesperson		1	1		
Total Augmented ERO		**15**	**5**	**5**	**4**	**0**

North Anna (NAPS) *90 Minute Alert or Greater* Augmented ERO Table Comparison

Major Functional Area	Position Title / Expertise	0654 Rev 1 Table B-1 Augment (90 min)	NAPS Rev 48 (90 min)	NAPS Rev 52 (90 min)	0654 Rev 2 Table B-1 (90-min)	NAPS Proposed (90 min)
Command and Control	Emergency Coordinator					3
Notification / Communication	State/local					3
	Federal					
Radiological Accident Assessment	Senior Manager/ Site RP Coordinator					4
- Dose Assessment	Dose Assessor					1
- In-Plant/Onsite Surveys	RP Technician				2	4
- Chemistry Radiochemistry	Chemistry Technician					
- Protective Actions	RP Technician				1	2
- Offsite Surveys	Team Lead and Driver				2	4
Plant System Engineering / Technical Support	Core/Thermal Hydraulics Eng					1
	Electrical Engineer					1
	Mechanical Engineer					1
Repair and Corrective Actions	Mechanical Maintenance Tech.					1
	Electrical Maintenance Tech.					1
	I&C Technician				1	1
	OSC Director					1
	Electrical Supervisor				1	1
	Mechanical Supervisor				1	1
	I&C Supervisor				1	1
	RP Coordinator				1	1
Total Augmented ERO					**10**	**32**

ENCLOSURE 2

Surry Power Station, Units 1 and 2:

Discussion and Assessment of Proposed Changes

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

Description and Assessment of Proposed Changes

1.0 SUMMARY DESCRIPTION

2.0 DETAILED DESCRIPTION

2.1 Proposed Changes
2.2 Reason for the Proposed Changes
2.3 SPS Emergency Plan Background

3.0 TECHNICAL EVALUATION

3.1 Technical Analysis
3.2 Functional Analysis
3.3 Conclusions

4.0 REGULATORY EVALUATION

4.1 Applicable Regulatory Requirements/Criteria
4.2 Precedent
4.3 No Significant Hazards Consideration Determination
4.4 Conclusions

5.0 ENVIRONMENTAL CONSIDERATION

6.0 REFERENCES

ATTACHMENTS:

1. Proposed Emergency Plan Sections (Mark-up)
2. Proposed Emergency Plan Sections (Retyped)
3. NUREG-0654 Table B-1 Comparative Chart
4. Off-site Response Organization Concurrence Letter

1.0 SUMMARY DESCRIPTION

In accordance with the provisions of 10 CFR 50.90, Virginia Electric and Power Company (Dominion Energy Virginia) requests Nuclear Regulatory Commission (NRC) approval of changes to the Surry Power Station (SPS), Units 1 and 2, Emergency Plan in the form of amendments to Renewed Facility Operating Licenses DPR-32 and DPR-37, respectively. The requested amendments incorporate the following changes to the SPS Emergency Plan:

1) Extension of facility activation requirements for the Technical Support Center (TSC) and Operational Support Center (OSC) from 60 minutes to 90 minutes, and for the Corporate Emergency Response Center (CERC) from 75 minutes to 90 minutes, following declaration of an emergency event classified as an Alert or higher;

2) Extension of the augmentation time for Emergency Response Organization (ERO) members from 45, 60, and 75 minutes to 90 minutes;

3) Redefinition of 'minimum staff' positions in the Emergency Response Facilities (ERFs) to align with new facility activation criteria;

4) Reorganization of the staffing table based on emergency preparedness (EP) functions to better align to NUREG-0654, Revision 2 [Reference 1], Table B-1 guidance;

5) Reduction of the emergency classification level at which dispatch of Offsite Survey Teams is required from a Site Area Emergency (SAE) to an Alert;

6) Addition of a definition for performance of 'Onsite (out-of-plant) Survey' to describe the area between site buildings and the Protected Area (PA) fence;

7) Addition of a definition for 'facility activation' criteria to align with command-and-control functions in the TSC, OSC, and CERC;

8) Removal of references to chemistry, maintenance, firefighting, first aid/rescue, and site access control and personal accountability functions on-shift from Table 5.1;

9) Removal of the Administrative Support Team, Executive Liaison, Emergency Plan Advisor, and Information Center Coordinator positions from the Emergency Plan;

10) Removal of the list of administrative duties and revision of the Emergency Administrative Director (EAD) position title to Emergency Security Director (ESD);

11) Removal of reference to the Local Media Center (LMC).

Dominion Energy Virginia completed a staffing analysis of on-shift responsibilities resulting from the effects associated with the proposed changes. The proposed changes are based on credit taken for the diverse and redundant nature of the Emergency Core Cooling System (ECCS), described in Section 3.1.2 of this Enclosure, and credit for additional defense-in-depth capabilities for the restoration of safety functions which obviates the need for maintenance activities during the initial response to an event.

In addition, a site-specific procedure analysis, described in Section 3.1.1 of this Enclosure, was completed to determine when activities performed by personnel outside of the Emergency Plan on-shift complement were required in response to adverse conditions as identified in site event response procedures. The site-specific procedure analysis was used to address the requirements in Regulatory Issue Summary (RIS) 2016-10, “License Amendment Requests for Changes to the Emergency Response Organization Staffing and Augmentation,” [Reference 2] for extending augmentation beyond the provisions of NUREG-0654/FEMA-REP-1 (NUREG-0654), Revision 1, “Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants,” [Reference 3] Table B-1, *Minimum Staffing Requirements for NRC Licensees for Nuclear Power Plant Emergencies,* and the NUREG-0654, Revision 2, [Reference 1] Table B-1, issued in December 2019, and was used to inform the functional analysis of augmented ERO positions based on extended response times. The functional analysis is included in Section 3.2 of this Enclosure.

Revised figures are included in the proposed SPS Emergency Plan that delineate positions associated with facility activation. This change allows for the transfer of Classification, Notification, Protective Action Recommendation (PAR) and Emergency Exposure functions from the Control Room in advance of 90 minutes when minimum staff positions are met as defined in the proposed Emergency Plan.

The changes in staff augmentation response times and reductions in the number of augmented ERO positions are considered a reduction in Emergency Plan effectiveness as defined in 10 CFR 50.54(q)(1)(iv). In accordance with 10 CFR 50.54(q)(4), changes to a licensee's emergency plan that reduce the effectiveness of the plan may not be implemented without prior NRC approval and are required to be submitted for approval as a license amendment request (LAR) in accordance with 10 CFR 50.90.

2.0 DETAILED DESCRIPTION

2.1 Proposed Changes

Brief descriptions of the proposed SPS Emergency Plan changes are provided below. The justification for each change is discussed in Section 3.2. The specific wording changes are provided in Attachments 1 and 2 to this Enclosure as marked-up and retyped copies, respectively, of the SPS Emergency Plan pages.

a. Section 1.0, “Definitions,” (1) added definition and criteria for facility activation; and (2) removed references to the LMC.

b. Section 1.1, “Acronyms and Abbreviations,” (1) removed LMC and (2) revised the EAD position title to ESD.

c. Section 2.1, “Emergency Plan,” revised to clarify augmentation of the ERO as a separate process from activation.

d. Section 4.2, “Emergency Classification System,” revised to reflect mobilization of offsite monitoring team at the Alert emergency classification rather than the SAE classification.

e. Section 5.0, “Organizational Control of Emergencies,” revised to reflect transition of Station Emergency Manager (SEM) functions by the SEM in the TSC.

f. Section 5.1, “Normal Station Organization,” revised to reflect on-shift staffing in accordance with NUREG-0654, Revision 2 [Reference 1], Table B-1, and the proposed changes.

g. Section 5.2, “Emergency Response Organization,” (1) replaced reference to Figure 5.1 with reference to Table 5.1; and (2) revised to reflect on-shift staffing in accordance with NUREG-0654, Revision 2 [Reference 1], Table B-1.

h. Section 5.2, “Emergency Response Organization,” (1) replaced reference to Figure 5.1 with reference to Table 5.1 for on-shift staffing; (2) removed references to performance of non-EP related functions on-shift; and (3) and removed references to Figure 5.2 which is replaced by separate facility Figures.

i. Section 5.2.1, “Station Emergency Position and Team Descriptions,” revised to remove reference to ‘fully implemented’ as this term is replaced by the facility activation criteria as noted in revised Figures 5.1, 5.2, and 5.3.

j. Section 5.2.1.2, “Emergency Communicator,” revised to reflect TSC staffing and transition of State/local notification functions to the CERC upon activation of that facility.

k. Section 5.2.1.8, “Emergency Administrative Director,” (1) revised the title of this position to ‘Emergency Security Director’; and (2) removed references to administrative activities performed by this position from the Emergency Plan.

l. Section 5.2.1.9, “Radiological Assessment Director,” renumbered section and deleted reference to chemistry sampling as this function is driven by technical specification (TS) requirements.

m. Section 5.2.1.10, “Radiation Protection Supervisor,” revised to remove references to non-EP functions.

n. Section 5.2.1.11, “Operational Support Center Director (OSC Director),” renumbered section and replaced ‘activated’ with ‘staffed’ as a reference to support team status.

o. Section 5.2.1.12, “OSC Support Team,” renumbered section and removed reference to control of Damage Control Teams ‘if activated’ as this criterion is now included in the definition for the facility.

p. Section 5.2.1.13, “Technical Support Team,” renumbered section and revised reference of ‘fully staffed’ to ‘activated’.

q. Section 5.2.1.14, “Chemistry Team,” deleted section as performance of chemistry activities is governed by site TS requirements.

r. Section 5.2.1.15, “Administrative Support Team,” deleted these positions from the Emergency Plan. These are administrative positions and will be controlled by station

Emergency Plan Implementing Procedures (EPIPs).

s. Section 5.2.16, “Security Team,” revised to reflect change in title from EAD to ESD.

t. Section 5.2.1.17, “Dose Assessment Team,” renumbered section and added clarification that the dose assessment function transitions from the TSC to the CERC upon full staffing of the CERC.

u. Section 5.2.1.19, “Evacuation Monitoring Team,” renumbered section and replaced ‘activated’ with ‘staffed’.

v. Section 5.2.1.20, “In-Plant Monitoring Team,” renumbered section and revised to remove references to non-EP functions.

w. Section 5.2.1.21, “Sample Analysis Team,” deleted section as these activities are governed outside the Emergency Plan.

x. Section 5.2.1.22, “Personnel Monitoring and Decontamination Team,” renumbered section and revised to remove references to non-EP functions.

y. Section 5.2.1.23, “Onsite (out-of-plant) Monitoring Team,” renumbered and revised to reflect the change in area surveyed from the site boundary to the PA.

z. Section 5.2.1.24, “Fire Brigade,” removed reference to this function as these activities are governed by the site Fire Protection Plan and operating procedures.

aa. Section 5.2.1.25, “First Aid Team,” deleted this reference as this is not an EP function and is managed under the site Fire Protection Program.

bb. Section 5.2.1.27, “Search and Rescue Team,” removed reference to this function which is governed by site Fire Protection and Security Plan procedures.

cc. Section 5.2.2, “Corporate Emergency Position and Team Descriptions,” (1) revised to reflect changes associated with facility activation in lieu of ‘fully implemented’ verbiage; (2) changed reference to revised Figure for CERC organizational structure; and (3) revised wording associated with JIC staffing rather than activation as the JIC does not perform command-and-control functions.

dd. Section 5.2.2.1, “Corporate Response Manager,” revised to remove references to positions providing support functions. These positions, if needed, will be contained in site EPIPs.

ee. Section 5.2.2.2, “Technical Support Manager,” revised to clarify position description related to performance of the command-and-control responsibilities of State/local notification and PAR development.

ff. Section 5.2.2.6, “Executive Liaison,” removed this position as it performs a support function only. This position, if needed, will be contained in site EPIPs.

gg. Section 5.2.2.7, “Emergency Plan Advisor,” removed this position as it performs a support function only. This position, if needed, will be contained in site EPIPs.

hh. Section 5.2.2.11, “Accident Assessment Team,” renumbered section and revised reference to applicable section for offsite monitoring teams associated with the proposed change.

ii. Section 5.2.2.12, “Resource Support Team,” deleted reference to Company Meteorologist. MET information is readily available to ERO members via plant computer and environmental monitoring, therefore supplemental staffing in this area in no longer required.

jj. Section 5.2.2.14, “Joint Information Center Support Team,” replaced the term ‘activated’ with ‘staffed’ in accordance with the proposed change.

kk. Section 5.3, “Augmentation of Emergency Response Organization,” (1) revised to reflect 90-minute activation for the TSC, OSC, and CERC; (2) added references to revised organizational charts; and (3) added a diagram outlining transfer of command-and-control functions.

ll. Section 5.3.1.5, “Release of Information to News Media,” (1) revised to replace ‘activated’ with ‘staffed’ for the JIC; and (2) removed reference to the LMC.

mm. Section 5.4.6, “Counties and Cities Within the Fifty-mile Ingestion Pathway Zone,” revised to reflect numbering changes on applicable Figures.

nn. Table 5.1, “Minimum Staffing Requirement for Emergencies,” revised to reflect on-shift and augmented staffing in accordance with NUREG-0654, Revision 2, [Reference 1] Table B-1, and staffing positions required for facility activation.

oo. Table 5.2, “Emergency and Recovery Corporate Response Required for Nuclear Station Emergencies,” deleted table and incorporated this information into Table 5.1.

pp. Figure 5.1, “Station Emergency Organization Prior to Augmentation,” deleted figure. This figure duplicated information included in the revised Table 5.1, as well as revised Figures 5.3, 5.4, and 5.5.

qq. Figure 5.2, “Station Emergency Organization Following Augmentation,” deleted. This figure duplicated information included in the revised Table 5.1, as well as revised Figures 5.3, 5.4, and 5.5.

rr. Figure 5.3, “Station to Support Group Interface Prior to Augmentation of the Emergency Organization,” renumbered section and revised to reflect changes in associated figures.

ss. Figure 5.4, “Station to Support Group Interface Following CERC Activation,” renumbered section and revised to reflect new numbering, removal of admin/support positions, and new facility organization chart numbering.

tt. Figure 5.5.a, “Technical Support Center Organization,” renumbered section and revised to reflect proposed staffing and positions required for facility activation.

uu. Figure 5.5.b, “Operational Support Center Organization,” renumbered and revised to reflect proposed staffing and positions required for facility activation.

vv. Figure 5.5.c, “Radiation Protection Organization”, deleted figure. Radiological Protection (RP) responders incorporated into TSC, OSC, and CERC figures to better reflect response in each facility.

ww. Figure 5.5.d, “Corporate Emergency Response Center Organization,” renumbered section and revised to reflect proposed staffing and positions required for facility activation.

xx. Section 6.3, “Protective Actions,” reworded to reflect transfer of the function to the CERC upon activation of that facility.

yy. Section 6.4.2, “First Aid and Decontamination,” removed references to First Aid team Member training as this information is governed by processes outside the Emergency Plan.

zz. Section 7.0, “Emergency Facilities and Equipment,” removed reference to the LMC.

aaa. Section 7.1.5, “Joint Information Center and Local Media Center,” revised to remove reference to the LMC.

bbb. Section 7.3.6, “Post Accident Sampling,” removed as chemistry sampling requirements are maintained in site TSs.

ccc. Table 7.1, “ERF Communications,” (1) removed reference to the LMC; and (2) added reference to Near Site Location for Offsite Agency Coordination.

ddd. Table 8.1, “Emergency Preparedness Training,” removed references to positions being deleted.

eee. Table 8.1, “Scope of Training Footnotes,” revised to remove references to training not related to the performance of EP functions and use of facility activation criteria.

2.2 Reason for the Proposed Changes

1) *Extension of facility activation requirements for the TSC and OSC from 60 minutes to 90 minutes, and for the CERC from 75 minutes to 90 minutes, following declaration of an emergency event classified as an Alert or higher;*

The proposed changes revise the SPS license by extending augmentation response timeframes for the augmented ERO. The additional time allows personnel previously precluded from assignment to the ERO as immediate responders due to significant commute times to fill augmented ERO positions. Extending augmentation times and reducing the number of augmented ERO positions increases the number of personnel eligible for assignment and increases the availability of expertise to the ERO overall. The proposed change will not be applied as permission to delay response to an event.

2) *Extension of the augmentation time for Emergency Response Organization (ERO) members from 45, 60, and 75 minutes to 90 minutes;*

   To establish the basis for a 90-minute specific response time for SPS augmented resources, an analysis of site procedures and their bases was completed. The study evaluated event diagnostics/trouble shooting activities that would need to be performed by on-shift resources to address loss of critical safety functions for the first 90 minutes after an event. The analysis evaluated equipment failures to establish the sequence of actions taken in scenarios where Emergency Operating Procedures (EOP) and Abnormal Operating Procedure (AOP) actions alone were not successful in the first 90 minutes after event initiation. Details on the results of this analysis are included in Section 3.1.1 of this Enclosure.

   The diverse and redundant nature of the ECCS obviates the need for maintenance activities as part of the initial response to an event. As a result, the proposed change removes references pertaining to performance of maintenance activities on-shift. Details associated with the ECCS are addressed in Section 3.1.2 of this Enclosure.

   Crediting technological advances, added Beyond Design Basis (BDB) accident mitigation capability, and defense-in-depth capabilities to restore safety functions including: the use of installed safety systems for each unit, the use of non-safety systems, the ability to utilize systems from the unaffected unit, and applicable BDB strategies, ensures actions can be taken by on-shift resources to initiate troubleshooting and repairs of safety functions. Therefore, extending the augmentation response times for TSC, OSC, and CERC positions to 90 minutes are practical and prudent alternate methods of ensuring effective and timely emergency response.

3) *Redefinition of 'minimum staff' positions in the Emergency response facilities (ERFs) to align with new facility activation criteria;*

   The TSC, OSC and CERC positions of Emergency Administrative Director, Emergency Plan Advisor, Material Management and Support Coordinator, Safety and Loss Prevention Coordinator, Chemistry Team, and Executive Liaison, as well as TSC, OSC, and CERC Administrative Support do not perform functions required to implement the Emergency Plan. As a result, Dominion Energy Virginia proposes to remove these positions from the SPS Emergency Plan and maintain administrative positions in the site implementing procedures as needed.

   Details associated with the revised ERO and key responsibilities and tasks as identified in NUREG-0654, Revision 1 [Reference 3], and NUREG-0654, Revision 2 [Reference 1], Table B-1, are included in Section 3.2 of this Enclosure.

4) *Reorganization of the staffing table based on emergency preparedness (EP) functions to better align to NUREG-0654, Revision 2 [Reference 1], Table B-1 guidance;*

   NUREG-0654, Revision 2 [Reference 1], Table B-1, placed greater focus on EP functions performed by Operations personnel. In the proposed change, only plant Operations personnel performing the EP functions of Classification, Notification, Core Damage Assessment (CDA),

and on-shift ERO oversight are in included in Table 5-1. On-shift staffing requirements for Operations personnel is specified in the SPS TSs.

Additionally, the proposed change extends the facility activation timeframe for the TSC, OSC, and CERC to 90 minutes, requiring performance of command-and-control activities by Control Room personnel for an additional 30 minutes. The process for transfer of command-and-control functions is outlined in Section B of the proposed Emergency Plan.

5) *Addition of a definition for 'facility activation' criteria to align with command-and-control functions in the Technical Support Center (TSC), Operational Support Center (OSC), and Corporate Emergency Response Center (CERC).*
The proposed change revises the use of the term 'activated' as it relates to ERF readiness to accept emergency response functions and standardizes the criteria to better align with NRC guidance. The proposed change defines facility activation criteria to clearly identify the positions which must be filled in the TSC, OSC, and CERC so that transfer of command-and-control functions (Classification, Notification, PARs, Dose Assessment, and Emergency Exposure Authorization) from the Control Room can be completed and on-shift personnel can be relieved of these duties. For the OSC, 'activated' corresponds to the position required to transfer oversight of in-plant teams from the Control Room. The term 'staffed' is applied to the JIC which does not have responsibility for any command-and-control actions. Revised figures have been added to the SPS Emergency Plan that delineate positions associated with facility activation. This change allows for the transfer of command-and-control functions from the Control Room in advance of 90 minutes when minimum staff positions are filled.

6) *Reduction of the classification level at which dispatch of Offsite Survey Teams is required form a Site Area Emergency (SAE) to an Alert.*
The current Plan requires the staffing of two (2) Offsite Monitoring Teams and one (1) Onsite (out-of-plant) Monitoring team at 60 minutes following the declaration of an emergency event classified as an Alert or higher. Dispatch of Offsite Monitoring Teams occurs at the SAE or higher classification. The proposed change would dispatch the teams at an Alert or higher classification, versus SAE, extend the requirement for the dispatch of the Offsite Monitoring Teams from 60 minutes to 90 minutes following declaration of an event classified as an Alert or higher, combine the Onsite (out-of-plant) and In-Plant survey functions, and extend the response time for RP Technicians performing the surveys from 60 minutes to 90 minutes.

7) *Addition of a definition for performance of 'Onsite (out-of-plant) Survey' to describe the area between site buildings and the Protected Area (PA) fence;*
The proposed change redefines the area for conducting of Onsite (out-of-plant) Surveys such that it describes the area between plant buildings and the PA fence, rather than the site boundary. This revision aligns the Onsite (out-of-plant) and In-plant functions allowing for more efficient use of RP resources and leveraging the smaller size of the PA footprint as compared to the OCA. The proposed change continues to provide for two (2) RP Technicians

on-shift for completion of radiological surveys utilizing plant monitors or by conducting a survey within a short walking distance in support of release determination.

8) *Removal of references to chemistry, maintenance, firefighting, first aid/rescue, and site access control and personal accountability functions on-shift from Table 5.1;*

   The proposed change removes references to non-EP functions. These positions are governed and maintained by TSs, the Fire Protection Plan and other site procedures as needed.

9) *Removal of the Administrative Support Team, Executive Liaison, Emergency Plan Advisor, and Meteorologist positions from the Emergency Plan;*

   These positions are generally administrative in nature and do not perform any EP functions and will, therefore, be maintained in site procedures as needed. The use of improved technology has eliminated the need for a dedicated Meteorologist as the information once provided by this position is now readily available on site computers.

10) *Removal of the list of administrative duties and revision of the Emergency Administrative Director (EAD) position title to Emergency Security Director (ESD);*

    Revision of the position's title provides better alignment between the title and the security responsibilities currently performed by the position.

11) *Removal of reference to the Local Media Center (LMC).*

    The location will continue to be available as the Near-Site Location for Offsite Agency Coordination, as described in Section 7.1.7 of the SPS Emergency Plan, and public information will continue to be issued from the JIC.

2.3 SPS Emergency Plan Background

The SPS Emergency Plan, Revision 0, was originally reviewed and approved by the NRC as meeting the requirements established in NUREG-0654, Revision 1, [Reference 3] as documented by NRC Safety Evaluation Report (SER), dated May 13, 1983. [Reference 4]

The NRC approved on-shift and augmented staffing in Revision 40 of the SPS Emergency Plan as documented by NRC SER, dated December 13, 1995, [Reference 5] and implemented in Table 5.1, *Minimum Staffing Requirements for Emergencies*, of the SPS Emergency Plan. This table provided a commitment to meet the guidance for on-shift staffing and augmentation goals including 45-minute and 60-minute responders established in Table B-1 of NUREG-0654, Revision 1. [Reference 3] Revision 40 also established a 90-minute activation goal for the Local Emergency Operations Facility (LEOF) and a 60-minute activation goal for the OSC and TSC as part of the approved Emergency Plan.

Revision 66 of the SPS Emergency Plan implemented a common EOF for SPS and North Anna Power Station (NAPS) as was approved by NRC SER, dated February 27, 2019. [Reference 6] This revision also established the new CERC activation time of 75 minutes providing for a common response time for the two Virginia based Dominion nuclear sites.

SPS has five (5) ERFs augmenting the on-shift staff:

(1) the Technical Support Center (TSC),
(2) the Operational Support Center (OSC),
(3) the Corporate Emergency Response Center (CERC),
(4) the Joint Information Center (JIC), and
(5) the Local Media Center (LMC).

The proposed change removes the reference to the LMC as an ERF. The CERC has been found to be a more effective location for issuance of public information.

SPS uses four standard levels of emergency classification as described in NUREG-0654, Revision 1 [Reference 3]. During an emergency, the Shift Manager (SM) initially assumes emergency response command- and-control until relieved by the SEM. Augmentation of the on-shift staff for an Unusual Event is optional and is left to the discretion of the SM. At the Alert or higher emergency classification levels, the TSC, OSC, and CERC are activated. The JIC is activated in accordance with the Commonwealth of Virginia Radiological Emergency Plan.

3.0 TECHNICAL EVALUATION

3.1 Technical Analysis

This section discusses technological changes in plant systems, dose assessment, procedures and training which have been completed to better support on-shift functions and ease operator burden. An on-shift analysis applying the methodology outlined in NRC endorsed guidance Nuclear Energy Institute (NEI) 10-05, Revision 0, “Assessment of On-Shift Emergency Response Organization Staffing and Capabilities,” [Reference 7] determined that the proposed changes did not result in conflicting duties for on-shift personnel.

3.1.1 Performance-based Procedure Analysis

Emergency response and supporting procedures for SPS were developed in accordance with NUREG-0737, “Clarification of TMI Action Plan Requirements,” [Reference 8] and Supplement 1 to NUREG-0737, “Clarification of TMI Action Plan Requirements: Requirements for Emergency Response Capability.” [Reference 9]

The required analysis of accidents and transients for the development of emergency procedures discussed in NUREG-0737 [References 8, 9] included needs analyses based on the events contained in the Final Safety Analysis Report (FSAR), loss of instrumentation busses, and natural phenomena such as earthquakes, floods and tornadoes. Additionally, NUREG-0737 identified the need to consider the following events involving multiple failures:

- Multiple tube failures in a single steam generator and tube rupture in more than one steam generator;
- Failure of Main and Auxiliary Feedwater;
- Failure of high-pressure reactor coolant makeup system;

- An Anticipated Transient Without Scram (ATWS) following a loss of offsite power (LOOP), stuck open relief valve or safety relief valve, or loss of Main Feedwater; and
- Operator errors of omission or commission.

The analyses were directed to be conducted far enough into the event to assure that all relevant thermal/hydraulic/neutronic phenomena are identified. The analyses were then used to develop guidelines that ensure an appropriate transition through procedures and were subsequently submitted to the NRC for approval. Since initial design approvals for existing sites, improvements have been made to emergency procedures to address other industry issues as they emerge, such as: Station Blackout (SBO), Interfacing System Loss of Coolant Accidents (LOCAs), ECCS Sump Screen Blockage, and Security Design Basis Threat (DBT). Additionally, Severe Accident Management Guidelines (SAMGs), Loss of Large Area (LOLA) guidelines, and Diverse and Flexible Coping Strategies (FLEX) guidelines have been developed to provide additional defense-in-depth strategies for response to BDB events. These improvements have been incorporated into the SPS procedures to ensure that plant safety is maintained, even in multiple failure conditions, by operator response using a methodical, symptom-based approach resulting in stabilization of the plant without reliance on external or augmented resources.

In RIS-2016-10, [Reference 2] the NRC documented the need to conduct detailed review of event response procedures to consider any further augmentation relief under, "*Considerations of the Review Process for Proposed Extension of NUREG-0654, Table B-1, 60-minute ERO Augmentation Times to 90 Minutes*". This section provides the following guidance on the extension of augmentation times for responders fulfilling Technical Support functions;

> *"Per the guidance of NUREG-0654, Table B-1, "Electrical" and "Mechanical" expertise should be provided by two 60-minute responders under the "Technical Support" major task. To adequately justify an extension of these responders, the licensee should show that on-shift position are capable of filling these roles during the 90 minute period after an emergency declaration. This will require a review of site procedures to identify the technical tasks requiring electrical and mechanical expertise that must be performed within the first 90 minutes of an emergency. The licensee should then show that there are on-shift positions with the necessary expertise to perform the identified technical support functions, and that such performance will not prevent the timely performance of their other assigned functions, as specified in the Emergency Plan. The justification should identify procedure, training and information technology advances made since the implementation of NUREG-0654 that facilitate technical support assessments by on-shift personnel or obviate the need for such assessments within 90 minutes of an emergency declaration. Additionally, the change justification should address the ability of on-shift positions to perform troubleshooting activities without interfering with their primary emergency duties (e.g., on-shift electrical or mechanical maintenance personnel with supervisory personnel to provide oversight).*

A performance-based analysis of site procedures and their bases was completed to provide the technical justification described in RIS 2016-10 [Reference 2]. This analysis included SPS emergency response and supporting procedures to determine if additional personnel resources, beyond the proposed on-shift staff, were required to support any plant and radiological response actions during the first 90 minutes after declaration of an emergency event classified as an Alert or higher.

The procedure analysis demonstrated that on-shift personnel will be able to perform required troubleshooting activities for the first 90 minutes and that there were no technical support activities requiring additional mechanical or electrical expertise needed during this timeframe. In addition, on-shift personnel are trained and provided the necessary procedural guidance to leverage system defense-in-depth capability to restore safety functions including the use of installed safety systems for each unit, the use of non-safety systems, the ability to utilize systems from the unaffected unit, and applicable BDB strategies and equipment to initiate restoration of Subcriticality, Core Cooling, Heat Sink, Containment Integrity and Inventory Control safety functions. The ability to implement response actions using FLEX Strategies during the first 90 minutes effectively protects public health and safety. As a result, performance of event response actions by on-shift personnel for the first 90 minutes is not adversely impacted by the proposed change.

3.1.2 Emergency Core Cooling System (ECCS)

The SPS Updated Final Safety Analysis Report (UFSAR) [Reference 10] states that SPS Units 1 and 2 were designed in conformance with the Atomic Energy Commission (AEC) *General Design Criteria for Nuclear Power Plants,* published in 1966. Additionally, Chapter 6 of the SPS UFSAR discusses how the ECCS meets the intent of General Design Criterion (GDC)-44, which states:

> *At least two emergency core cooling systems, preferably of different design principles, each with a capability for accomplishing abundant emergency core cooling, shall be provided. Each emergency core cooling system and the core shall be designed to prevent fuel and clad damage that would interfere with the emergency core cooling function and to limit the clad metal-water reaction to negligible amounts for all sizes of breaks in the reactor coolant pressure boundary, including the double-ended rupture of the largest pipe. The performance of each emergency core cooling system shall be evaluated conservatively in each area of uncertainty. The systems shall not share active components and shall not share other features or components unless it can be demonstrated that (a) the capability of the shared feature or component to perform its required function can be readily ascertained during reactor operation, (b) failure of the shared feature or component does not initiate a loss of coolant accident, and (c) capability of the shared feature or component to perform its required function is not impaired by the effects of a loss of coolant accident and is not lost during the entire period this function is required following the accident.*

The SPS ECCS consists of a passive system of accumulators that do not require any external signals or source of power for their operation to cope with the short-term cooling requirements of large reactor coolant pipe breaks. Two (2) independent pumping systems, each capable of the required emergency cooling, are provided for small-break protection and to keep the core submerged after the accumulators have discharged following a large break. Adequate design provisions ensure the performance of the required safety functions even with the loss of a single active component, assuming the electric power is available from either the offsite or the onsite electric power sources.

Relative to Emergency Power for the ECCS, Section 6.2.1.1 of the SPS UFSAR [Reference 10] describes how the SPS electrical power system meets the intent of GDC-39 which states:

> *Alternate Power systems shall be provided and designed with adequate independency, redundancy, capacity, and testability to permit the functioning required of the engineered safety features. As a minimum, the onsite power system and the offsite power systems shall each, independently, provide this capacity assuming a failure of a single active component in each power system.*

SPS employs onsite and offsite power systems that can independently supply the electric power required for the operation of safety-related systems. Two (2) independent sections of emergency 4160V buses and switchgear are provided for each unit. Each section is sized to carry 100% of the emergency load and may be energized by either onsite or offsite power supplies. The onsite and offsite power supplies are both independently capable of supplying power to the engineered safety features (ESF) equipment. This capability is maintained even with the failure of any single active component in either the onsite or offsite system. In the unlikely event of total loss of offsite power, the emergency buses are energized by the emergency diesel generators (EDGs). Three (3) EDGs are available for two (2) units. One (1) diesel is designated exclusively for Unit 1, the second is designated exclusively for Unit 2, and the third functions as a backup for either unit. Each EDG is connected to one of the emergency buses, and each bus is connected to one set of the duplicated ESF equipment, thus ensuring operations of ESF equipment under all conditions, including the failure of a single component in each power system.

Normal ESF operating status and deviations from this status to include the ECCS and associated power sources is controlled by the SPS TSs.

System performance is tracked and trended by the site and demonstrates a high degree of reliability. System health requirements are maintained, based on NRC Performance Indicators for system availability and functional failures which are an integral part of the Reactor Oversight Process (ROP). Additionally, reliability is driven by Maintenance Rule performance criteria.

Crediting the robust ECCS capability and protection against single point failures provides the basis for removal of electrical and mechanical maintenance personnel from on-shift.

3.1.3 Plant Computer System

When the SPS Emergency Plan, Revision 40, was approved in 1996, the site utilized a P250 plant computer and Emergency Response Facility Computer System (ERFCS) which implemented NUREG-0696, “Functional Criteria for Emergency Response Facilities,” [Reference 11] and NUREG-0737 [References 8, 9] requirements. The ERFCS provided plant monitoring, data acquisition, and critical plant data in the form of real-time displays in the Control Room, TSC, LEOF, CERC, and Corporate Emergency Operations Facility (CEOF).

In 2004, these systems were replaced with the Plant Computer System (PCS), which distributed information via Local Area Network (LAN) and Wide Area Network (WAN), making information more readily available.

Benefits of the upgraded system include:

- Graphing and trending capabilities
- Provision for historical data recording and retrieval
- Interfaces with equipment and other data sources such as ERDS and SPDS
- Design provides for a high degree of reliability through use of redundant system processes

The Unit 1 and Unit 2 PCS have Uninterruptable Power Supplies installed to ensure the computer system availability during a power outage.

3.1.4 Dose Assessment

An automatic data feed from the PCS to the dose projection software is normally used to auto populate the radiological and meteorological data for performing dose projections. In addition, specifically designed displays on the PCS have been developed for obtaining and monitoring the necessary plant, radiological effluent, area radiation monitor, and meteorological information for assessing release status and for manual entry of relevant data for performing dose projections.

Previous on-shift dose assessment

The previous dose assessment capability was based on the VAX MIDAS dose assessment software implemented in 1990. VAX MIDAS calculated dose rates and integrated dose for whole body and thyroid based on plume shine, ground shine, and inhalation for the ingestion pathway. The dose calculation utilized source term values for Xe-133 and I-131 and accounted for decay time from reactor trip and transit time. The VAX MIDAS dose model utilized two dispersion models. One model was based on a straight line, Gaussian plume and the other used a more detailed segmented plume and included the effects of rainout. This software utilized automatic input of basic meteorological data and radiological data from the PCS or manual input by the user. Additional data was input by the user to complete the dose assessment calculation. The VAX MIDAS ran on dedicated equipment located in the HP office, TSC, LEOF and CEOF.

Current On-Shift Dose Assessment

In 2006, SPS implemented PC MIDAS, which is the current dose assessment software. The PC MIDAS dose calculation software has the same dose projection capabilities as VAX MIDAS with a larger isotopic library, an enhanced user interface, and additional output reports. The PC MIDAS software is provided on dedicated workstations in the HP Count Room and in the ERFs. The PC MIDAS software is also loaded on other selected workstations in the ERFs and in the Control Room in the event one or more of the dedicated workstations are unavailable. In addition, the PC MIDAS software can be accessed from any computer that has been loaded with the PC MIDAS software. Meteorological and radiation monitor data is automatically input from the PCS or input manually if the data is not available from the plant computer or is suspect. If manual entry of data is required, then this data can be readily obtained from specialized PC MIDAS displays on the plant computer. Event Tree selections utilizing drop-down menus allow the user to select or modify the mix of isotopes being released from the plant based on selections that address plant conditions and mitigating systems. A user aid is provided to support quick selection of items in the drop-down menus. This dose assessment process is utilized by on-shift and augmented responders. The automated input of meteorological and radiological data into the PC MIDAS software in conjunction with the menu driven data input methodology and supporting job aid supports performance of timely and accurate dose projections by the on-shift and augmented dose assessors.

3.1.5 Procedure Improvements

Emergency Operating Procedures (EOPs) / Abnormal Operating Procedures (AOPs)

Since the original emergency plan approval, the SPS EOPs and AOPs have been improved through internal operating experience and industry initiatives. Current EOPs and AOPs use a symptom-based approach that demands less assessment and interpretation of plant conditions by the operating crews. The EOPs and AOPs interface with PCS to allow for electronic monitoring of Critical Safety Function Status Trees (CSFSTs) which graphically displays plant conditions relative to limits or required actions and provides a recommendation regarding which EOP applies. Overall, the improvements made to EOP and AOP procedures greatly reduces the operator's reliance on the ERO during the initial phases of any event.

Emergency Plan Implementation Procedures (EPIPs)

In 2008, SPS updated the classification methodology to NEI 99-01, Revision 4. [Reference 12] Modification of these EALs was approved by the NRC via letters dated January 26, 2011 [Reference 13] and September 25, 2013. [Reference 14] NEI 99-01, Revision 6, [Reference 15] EALs were approved by the NRC via letter dated December 31, 2019. [Reference 16] SPS EALs incorporate guidance that has simplified the classification process, including the use of an overview matrix of EAL initiating conditions and threshold values that streamlines the process of evaluating EALs against plant conditions, allowing the on-shift operators to focus on event mitigating actions without the aid of the ERO during the initial phases of any event.

3.1.6 Training Improvements

Operations Training

Training is used to strategically drive and sustain improved performance at SPS. Training is administered through the application of the Systematic Approach to Training (SAT) to ensure that accredited training is conducted to the industry-accepted standards in accordance with INPO ACAD-02-001, “The Objectives and Criteria for Accreditation of Training in the Nuclear Power Industry”.

A dynamic reference plant simulator is used during Operations Training to provide hands on experience and practice in the operation of the nuclear plant during normal, abnormal, and emergency plant conditions. The site training procedures describe the conduct of crew-specific simulator training. Evaluation scenarios are designed to be realistic and provide an opportunity for performance evaluation during a wide range of plant operating conditions, including emergency conditions that require implementation of the station’s Emergency Plan. The proficiency of the Control Room team is evaluated in the areas of critical task performance, prioritization of activities, communications, accident mitigation, event classification, teamwork, and communications.

Shift Technical Advisor (STA) Training

The Shift Technical Advisor (STA) training program was developed to train the STA as an advisor to the Control Room team in accordance with NUREG-0737 [Reference 8] guidelines. In 1990, INPO developed additional training guidelines as detailed in INPO 90-003, “Guidelines for Training and Qualifications of Shift Technical Advisors.” In 2014, INPO issued updated STA Training Guidance, INPO ACAD 14-002, “Guidelines for Training and Qualifications of Shift Technical Advisors,” which incorporated industry experience and addressed the STA role in BDB strategies. The STA performs independent assessments of plant parameters, monitors status trees, provides recommendations on appropriate corrective actions to restore plant parameters to acceptable values, and assesses whether core damage has occurred or appears imminent. The STA also assists the SM with Operability, Risk, and Reportability determinations.

3.1.7 Technical Summary

By crediting the diverse and redundant ECCS design, defense-in-depth capability through use of non-safety systems and systems from the unaffected unit, BDB strategies, as well as the results of the Performance-Based Procedure (PBP) Analysis of troubleshooting and repair/corrective action activities it is demonstrated that the proposed change is a reasonable and prudent means to ensure no degradation or loss of function results from the extension of augmented response times to 90 minutes. Additionally, improvements in dose assessment software allow for the dedicated on-shift dose assessor to determine the impacts of offsite releases more efficiently. This, combined with the continued ability to determine doses based on survey data, ensures that there is no degradation or loss of dose assessment function resulting from the proposed change.

3.2 Functional Analysis

This analysis evaluates the effect of extending the augmentation times on the ability of the on-shift staff to perform the major tasks for the major functional areas of the SPS Emergency Plan. The analysis demonstrates that no degradation or loss of function would occur as a result of the proposed change.

The following is the result of the functional analysis performed for the major functional areas as described in NUREG-0654, Revision 1, [Reference 3] Table B-1, as well as the NUREG-0654, Revision 2, [Reference 1] Table B-1. In general, the analysis is organized to provide details for each functional area as follows:

(A) SPS Emergency Plan Revision 40,
(B) the current SPS Emergency Plan, and
(C) the proposed SPS Emergency Plan.

3.2.1 Plant Operations and Assessment of Operational Aspects

NUREG-0654, Revision 1, [Reference 3], assumes the function of plant operations and assessment of operational aspects is performed by on-shift staff throughout the emergency. NUREG-0654, Revision 2 [Reference 1], Table B-1, replaced the *Plant Operations and Assessment of Operational Aspects* Major Functional Area with *Command and Control and Emergency Classifications*. The revision placed greater focus on EP functions performed by plant operations personnel.

In the proposed change, only plant operations personnel performing the EP functions of Classification, Notification, Core Damage Assessment (CDA), and on-shift ERO oversight are included in Table 5.1. On-shift staffing of Operations personnel is maintained under documents outside of the Emergency Plan. This change is aligned with the NUREG-0654, Revision 2 [Reference 1], Table B-1, as noted in Attachment 3, Table B-1 Comparative Chart.

3.2.2 Emergency Direction and Control (Command and Control, Emergency Classification)

NUREG-0654, Revision 1 [Reference 3], guidance indicates that the on-shift Emergency Coordinator assumes this function as a collateral duty where responsibility for overall direction of facility response may be transferred when ERFs are activated. NUREG-0654, Revision 2 [Reference 1], Table B-1, identifies a position responsible for overall command-and-control of the ERO, EAL approval, and authorization of personnel dose extensions, as well as a position responsible for evaluation of plant conditions and classification recommendations as an ancillary duty.

A. In Revision 40 of the SPS Emergency Plan, the Shift Supervisor would assume the duties of SEM and would be responsible for emergency response efforts until relieved, in accordance with station procedures. A goal of 90 minutes for activation of the LEOF and a goal of 60 minutes for activation of the OSC and TSC was included in this revision. In Revision 58 of the SPS Emergency Plan, the Shift Manager (SM) position was added to

the on-shift staff to better support performance of timely event classification. Revision 66 of the SPS Emergency Plan implemented the use of the CERC, with an activation time of 75 minutes, as a common emergency operations facility for NAPS and SPS, replacing the LEOF for each site. This change was approved in an NRC SER, dated February 27, 2019. [Reference 6]

B. The current SPS Emergency Plan maintains the process for performance of event classification by the SM as the SEM and 60-minute and 75-minute goals for facility activation as outlined in Revision 58 and 66, respectively.

C. The proposed change maintains event classification as a function of the SM/SEM, extends TSC and OSC activation time from 60 to 90 minutes and extends activation time of the CERC from 75 to 90 minutes after declaration of an emergency event classified as an Alert or higher. On-shift staffing for SROs includes a third SRO who is SM/SEM qualified. This individual is not included in the 10 CFR 50.54(m)(2)(i) requirement and is a resource continuously available for oversight and direction of emergency response.

Classification

The proposed change extends the timeframe during which event classification is performed by the SM/SEM by 30 minutes. The procedure analysis demonstrated that oversight of the plant is maintained by the two (2) Unit Shift Supervisors, allowing the SM/SEM to maintain focus on event classification. Additionally, the proposed change maintains the STA position for performance of the CDA function and providing support to the SM/SEM for performance of event classification. The availability of Unit Shift Supervisors and the STA position provide the needed support to allow the SM/SEM to perform the classification function for the first 90 minutes after an event without conflicts. Upon activation of the TSC, the SEM in that facility relieves the SM/SEM of the Classification function.

Command and Control

The proposed change impacts the command-and-control function in that it adds a definition for ‘facility activation’ and extends for 30 minutes the timeframe during which responsibility for oversight of on-shift ERO and event command-and-control functions, including PAR development and authorization of personnel dose extensions, is performed by the SM/SEM.

On-shift ERO oversight activity is limited to two (2) communicators in the Control Room, two (2) RP Technicians in the RP office and a third RP Technician assigned to perform the dose assessment function. These positions are readily available to the SM/SEM such that extension of augmented response times by 30 minutes for TSC and OSC personnel responsible for ERO oversight does not result in conflicting duties for the on-shift SM/SEM. Upon activation of the TSC, OSC, and CERC at the Alert or higher classification, State/local Notification, Protective Action Recommendation and dose assessment functions transfer from the Control Room to the CERC while event Classification, Federal

Notification and Emergency Exposure Authorization functions transfer from the Control Room to the TSC. Responsibility for oversight of the ERO in the plant transitions from the Control Room to the OSC. As noted in the February 27, 2019, NRC SER [Reference 6] the TSC is staffed to allow for transfer of State/local Communications and PARs either directly from the Control Room or from the CERC, should the CERC become unavailable, during an event.

The proposed change defines 'facility activation' and clearly identifies the positions which must be filled in the TSC, OSC, and CERC so that transfer of command-and-control functions (Classification, Notification, PARs, Dose Assessment, Emergency Exposure Authorization) from the Control Room can be completed and on-shift personnel can be relieved of these duties. For the OSC, 'activated' corresponds to the OSC Director position that is required in order to transfer oversight of on-shift ERO from the Control Room. The proposed change also replaces 'activated' for the JIC with 'staffed' as there are no command-and-control functions associated with these facilities.

The proposed definition for facility activation is based on responder availability to perform response actions in each facility and provides the following required minimum staff positions associated with command and control as noted in revised Figures 5.1, 5.2, and 5.3:

- Station Emergency Manager (TSC)
- Emergency Operations Director (TSC)
- Radiological Assessment Director (TSC)
- Dose Assessment Team Leader (TSC)
- Reactor Engineer (TSC)
- NRC Emergency Communicator (TSC)
- State/local Communicator (TSC)
- OSC Director (OSC)
- Technical Support Manager (CERC)
- Radiological Assessment Coordinator (CERC)
- Operational Support Coordinator (CERC)
- Dose Assessor (CERC)
- State/local Communicator (CERC)

This change allows for the transfer of command-and-control functions from the Control Room in advance of 90 minutes when minimum staff positions are filled. The availability of the on-shift dose assessor to support PAR and exposure control and the limited number of positions requiring oversight enable performance of the command-and-control function by the SM/SEM for the initial 90 minutes after an event. This definition of 'facility activation' continues to be aligned with NSIR/DPR-ISG-01 guidance. [Reference 17]

3.2.3 Notification/Communication Function

Per NUREG-0654, Revision 1, [Reference 3] the Notification/Communication function included major tasks to notify licensee, state, local and federal personnel and maintain communications. NUREG-0654, Revision 2, [Reference 1] Table B-1, maintains the function as described in NUREG-0654, Revision. 1.

Licensee Notification

A. Revision 40 of the SPS Emergency Plan identified notification of licensee off duty personnel as a responsibility of the Shift Supervisor/SEM. This notification was completed by Station Security personnel at an Alert or higher classification or when deemed necessary by the SEM.

B. The current SPS Emergency Plan maintains the Revision 40 performance of ERO notification by Station Security at an Alert or higher classification.

C. No revisions to the ERO notification function are proposed in this change.

State, Local and Federal Notification

A. In Revision 40 of the SPS Emergency Plan, state/local and federal notifications were performed as an ancillary duty of on-shift personnel, augmented by two (2) 60-minute responders.

B. The current SPS Emergency Plan maintains the on-shift and augmented organization for the State/local and federal notification functions as described in Revision 40.

C. The proposed change identifies two (2) on-shift resources that are available for performance of state/local and federal notification functions and extends the 60-minute response time for augmented personnel performing State/local and Federal notifications to 90 minutes. Performance of the Notification function was validated during the staffing analysis to ensure that there were no conflicting duties for on-shift personnel as a result of the proposed change. The use of (2) two on-shift resources for performance of notification activities ensures there is no loss of capability resulting from extending this responsibility for an additional 30 minutes until augmented resources are available. Operations personnel responsible for performance of the notification function are in excess of site Technical Specification requirements as established in 10 CFR 50.54(m)(2)(i). Upon activation of the TSC and EOF, the CR staff is relieved of these functions. The proposed change is aligned with RIS 2016-10 [Reference 2] guidance for staffing for 90-minute augmented response times for this function.

3.2.4 Radiological Accident Assessment and Support of Operational Accident Assessment Function (Dose Assessments/Projections, Field Monitoring Teams, Radiation Protection)

Per NUREG-0654, Revision 1 [Reference 3], the Radiological Accident Assessment and Support of Operational Accident Assessment functional area includes the Emergency Operations Facility (EOF) Director, Off-site Dose Assessment, Off-site, In-Plant, and On-site (Out-of-plant) surveys,

and Chemistry/Radiochemistry major tasks. NUREG-0654, Revision 2 [Reference 1], Table B-1, changed the functions associated with radiological accident assessment to address the radiological aspects only.

EOF Director Major Task

Revision 40 of the SPS Emergency Plan included simultaneous staffing of the TSC, OSC, and LEOF at the Alert or higher classification. Initial direction and coordination of onsite emergency operations functions were transitioned from the Shift Supervisor/SEM in the Control Room to the SEM in the TSC, and ultimately reports to the Recovery Manager in the LEOF. Details regarding Command and Control of Emergencies and Classification are discussed in Section 3.2.2 of this Enclosure.

Off-site Dose Assessment Major Task

A. In Revision 40 of the SPS Emergency Plan, initial performance of dose assessment on-shift was an ancillary duty of on-shift personnel. The dose assessment function was subsequently transitioned to the Dose Assessment Team in the TSC under the direction of the Radiological Assessment Director (RAD), a 60-minute response position, upon activation of that facility. The function then transitioned to the LEOF under the direction of the Radiological Assessment Coordinator (RAC) upon staffing of that facility.

   In Revision 58, an RP position was added to the on-shift staff for performance of the dose assessment function in advance of staffing of the Dose Assessment Team. In Revision 66, the LEOF was replaced by the CERC as a common emergency operations facility for NAPS and SPS. This change was approved in an NRC SER dated, February 27, 2019. [Reference 6] Revision 66 specified performance of the dose assessment function by on-shift personnel and the transition to the TSC and subsequently to the CERC upon activation of those facilities.

B. The current Plan maintains the Revision 58 on-shift and augmented responsibilities for performance of the dose assessment function.

C. In the proposed change performance of the dose assessment function by the third RP on-shift is maintained and the response time for the TSC and CERC dose assessor positions is extended to 90 minutes.

   Radiological dose assessment has benefited from technological advances that make it simpler and less time consuming. As noted in Section 3.1.4, recent improvements in dose assessment capability have resulted from the implementation of PC MIDAS which includes an expanded isotopic library, enhanced user interface and additional output reporting capability. These improvements provide additional support for the extended performance time of this function by the on-shift dose assessor. Additionally, the procedure used by the on-shift dose assessor is identical to that used by the dose assessor in the TSC and CERC resulting in maintained capability for performance of the dose assessment function during the extended response time. Performance of the dose assessment function by the third RP technician was evaluated in the on-shift staffing

analysis using the time motion study methodology. The analysis demonstrated that the function can be performed on-shift without conflicts.

Given the technical improvements in the dose assessment process and performance of dose projections by a dedicated on-shift resource and maintained capability for performance of the function, performance of this function by on-shift staff for the first 90 minutes after an event does not result in conflicts in the performance of on-shift duties and does not adversely impact performance of the dose assessment function.

Offsite Surveys Major Task

A. In Revision 40 of the SPS Emergency Plan, Offsite monitoring personnel responded to the site at the Alert classification and were dispatched to initiate offsite monitoring at the SAE or higher classification. Teams consisted of four (4) 60-minute augmented responders who reported to the Dose Assessment Team in the TSC or the LEOF.

   In Revision 66, the LEOF was replaced by the CERC as a common emergency operations facility for NAPS and SPS. This change was approved by NRC SER dated, February 27, 2019. [Reference 6]

B. The current SPS Emergency Plan maintains the Revision 40 requirements for initiation of offsite surveys by augmented responders within 60 minutes after declaration of a SAE or higher classification.

C. In the proposed change dispatch of the two (2) Offsite Monitoring Teams (OMTs) to initiate offsite monitoring is extended by 30 minutes, however, it occurs at an Alert rather than the SAE classification. The dispatch of OMTs at an Alert or higher classification, combined with improvements in monitoring capability and the use of updated dose assessment software as discussed in Section 3.1.4, provides the means for assessing radioactive releases in the early stages of an event. Additionally, prior to the arrival of the OMTs, one of the on-shift RP Technicians are able to perform on-site(out-of-plant) surveys as a means of early identification of releases and provide data inputs to dose assessment. These capabilities serve as the basis for extending the augmentation response time from 60 to 90 minutes.

Onsite (out of plant) and In-Plant Survey Major Tasks

A. Revision 40 of the SPS Emergency Plan identified two (2) on-shift individuals as responsible for in-plant monitoring and sample collection as directed by the RP Supervisor and monitoring of Search and Rescue, Damage Control, Fire and First Aid Team personnel as needed. These resources were augmented by two (2) responders within 60 minutes from the declaration of an Alert or higher classification. Additionally, Revision 40 identified two (2) additional responders augmented within 60 minutes who were responsible for performance of radiological monitoring outside the PA and within the OCA.

B. The current SPS Emergency Plan maintains the Revision 40 requirement for two (2) on-shift RP Technicians and augmentation of two (2) responders for in-plant monitoring and

two (2) additional responders for performance of onsite (out-of-plant) monitoring within 60 minutes at declaration of an Alert or higher classification.

C. The proposed change redefines the area for completion of Onsite (out-of-plant) Surveys to the area between the plant buildings and the PA fence, rather than the site boundary. The proposed change aligns the Onsite (out-of-plant) and In-plant functions allowing for more efficient use of RP resources and leveraging the small size of the PA footprint. The proposed change continues to provide for two (2) on-shift RP Technicians to complete radiological surveys utilizing plant monitors or through conducting surveys within a short walking distance in support of release determination. Additionally, the proposed change provides for the two (2) augmented RP Technicians and extends the response time for augmentation of these resources from 60 to 90 minutes after declaration of an Alert or higher classification.

   Improvements in plant radiological monitoring computer systems as described in Section 3.1.3 of this Enclosure provides for easy access to plant area radiation and process monitoring data. The site plant computer system allows RP Technicians to monitor and trend radiological conditions throughout the plant from multiple locations including ERFs and RP office areas. This monitoring capability allows the on-shift technicians to quickly provide radiological information to the SM/SEM including changes in radiological conditions that could impact response activities, and therefore has reduced the burden on on-shift personnel to acquire this information while ensuring dose savings for a spectrum of incidents with the potential to produce offsite dose in exceedance of Federal Protective Action Guidelines (PAGs).

   RIS 2016-10 [Reference 2] notes that augmentation of additional RP qualified resources for performance of protective actions is needed to ensure radiological protection for added on-shift maintenance and technical staff to compensate for the extended augmentation time. As discussed in Section 3.1.1, augmentation of existing on-shift resources is not required in advance of 90 minutes after the declaration of an Alert or higher classification. As a result, the need for additional RP qualified resources for performance of in-plant surveys can also be extended to 90 minutes consistent with staffing times of other responding disciplines. Improved in-plant monitoring capability allows for determination of release status without requiring area-specific surveys.

Chemistry/Radiochemistry Major Task

A. Revision 40 of the SPS Emergency Plan identified an on-shift Chemistry Technician responsible for chemistry sampling and analysis. This on-shift resource was augmented by two (2) additional Chemistry Technicians at 60 minutes.

B. The current SPS Emergency Plan maintains the Revision 40 requirement for one (1) on-shift Chemistry Technician and augmentation by two (2) additional Chemistry Technicians at 60 minutes.

C. The proposed change removes references to performance of chemistry sampling by the on-shift Chemistry Technician and during periods after event declaration because this activity is governed by site documents outside the purview of the Emergency Plan. These changes are aligned with the guidance contained in NUREG-0654, Revision 2 [Reference 1] Table B-1.

3.2.5 Plant System Engineering, Repair and Corrective Actions Function

Per NUREG-0654, Revision 1 [Reference 3], the *Plant System Engineering, Repair and Corrective Actions* functional area includes Technical Support and Repair and Corrective Actions Major Tasks. NUREG-0654, Revision 1 [Reference 3], Table B-1, notes that Mechanical Maintenance/Radwaste Operator and Electrical Maintenance/Instrument and Control Technician expertise may be provided by shift personnel assigned other functions.

Technical Support Major Task

A. Revision 40 of the SPS Emergency Plan included a STA position who advised the Shift Supervisor on operations activities and provide engineering support prior to staffing of the TSC. The position was augmented at 60 minutes after an Alert by the Technical Support Team in the TSC.

B. The current SPS Emergency Plan maintains the Revision 40 requirement for the Reactor Engineer position augmented at 60 minutes from an Alert or higher classification. The Reactor Engineer is responsible for supporting the technical team in the TSC in analyzing reactor physics, hydraulic and thermodynamic problems and development of solutions. Staffing by Electrical and Mechanical Engineering continues to take place at 60 minutes after the event.

C. The proposed change maintains performance of the core/thermal hydraulics function as the responsibility of the STA on-shift and extends the response time for the TSC Reactor Engineer from 60 to 90 minutes. The procedure analysis demonstrated that the on-shift STA was able to perform required troubleshooting activities for the first 90 minutes after an event through implementation of event response procedures designed for restoration of safety functions to include use of defense-in-depth capabilities as needed. The analysis showed that there were no technical support activities requiring additional mechanical or electrical expertise needed during the first 90 minutes after event initiation. As a result, the analysis demonstrated that on-shift resources as noted in Table 5.1 of the proposed change are capable of taking actions to restore safety functions and support the extension of augmented response to 90 minutes after declaration of an emergency event classified as an Alert or higher.

   To ensure continued performance of the CDA function for the first 90 minutes after the declaration of an Alert or higher classification, the site will implement provision of access to and training of the STA on-shift with core damage assessment capability that is functionally equivalent to that used by the Reactor Engineer in the TSC.

Upon activation of the TSC, the Reactor Engineer relieves the STA of the core damage assessment function. Additionally, the Mechanical and Electrical Engineers assume responsibility for development of troubleshooting and repair strategies as well as transition from defense in depth applications to use of installed plant safety systems.

Repair and Corrective Actions Major Task

A. Revision 40 of the SPS Emergency Plan identified maintenance activities as being performed by personnel available on a 16-hour per day, 7-day per week basis, with coverage during remaining hours being provided as an ancillary duty of other on-shift personnel. These positions were augmented by a Mechanical Maintenance Damage Control Team Member at 45 minutes and a Mechanical, Electrical, I&C Maintenance Damage Control Team Members within 60 minutes of an Alert or higher classification.

B. The current SPS Emergency Plan maintains the Revision 40 on-shift maintenance staffing and augmented maintenance response requirements at 45 and 60 minutes at an Alert or higher classification.

C. The proposed change removes the reference to on-shift maintenance activities and revises the augmented response to include one (1) Mechanical Maintenance, one (1) Electrical Maintenance and one (1) I&C Maintenance responder at 90 minutes. As discussed in the technical evaluation, the robust design of ECCS and proven system reliability serve as the basis for removal of on-shift personnel for the purposes of performing maintenance activities from on-shift. The procedure analysis demonstrated that there were no repair or corrective activities required for the first 90 minutes. As a result, performance of repair and corrective action activities by maintenance augmented responders at 90 minutes continues to support performance of the Repair and Corrective Action function. Additionally, in the unlikely event of a failure of ECCS system capabilities at an impacted unit, additional defense in depth is provided by SPS procedures that address a loss of a safety function using installed non-safety plant systems and equipment at the affected unit, the ability to cross-connect some systems with the unaffected unit, and Beyond Design Basis strategies and equipment.

   Once the OSC is staffed the Maintenance Coordinators assume responsibility for development of repair strategies for installed plant equipment. As installed plant equipment is restored, the plant can transition from the use of defense in depth strategies.

3.2.6 Protective Actions (In-Plant) Function

Per NUREG-0654, Revision 1, [Reference 3] the *Protective Actions* functional area includes the Radiation Protection major task, specifically Access Control, HP Coverage for repair and corrective actions, search and rescue first aid and firefighting, personnel monitoring and dosimetry. NUREG-0654, Table B-1 notes that HP Technician expertise may be provided by shift personnel assigned other functions. NUREG-0654, Revision 2 [Reference 1]. Table B-1 combined this function with the Radiation Protection function.

A. Revision 40 of the SPS Emergency Plan provided for performance of in-plant protective actions as an ancillary duty of two (2) on-shift positions. These positions were augmented by four (4) additional resources at 60 minutes.

   In Revision 58, an additional position was added to the on-shift staff in support of this function.

B. The current Plan maintains the on-shift and augmented RP staffing numbers as stated in Revision 58 of the SPS Emergency Plan.

C. The proposed change combines the Protective Action and Radiological Assessment functions and utilizes the two (2) on-shift RP Technicians for performance of these tasks as noted in NUREG-0654, Revision 2 [Reference 1]. Table B-1 guidance and extends the response time for four (4) additional RP Technicians from 60 to 90 minutes after declaration of an Alert or higher classification. These positions will continue to provide coverage for:

   - Access Control / Dosimetry
   - HP Coverage for Repair and Corrective Actions, Search and Rescue First Aid and Firefighting
   - Personnel Monitoring / Habitability

   RIS 2016-10 [Reference 2] notes that augmentation of additional RP qualified resources for performance of protective actions is needed to ensure radiological protection for added on-shift maintenance and technical staff to compensate for the extended augmentation time. As demonstrated in the procedure analysis and discussed in Section 3.1.1, existing on-shift resources are able to perform troubleshooting activities to initiate restoration of a loss of safety function for the first 90 minutes after the declaration of an Alert or higher classification without conflicts. The arrival of augmented RP technicians coincides with the response times for maintenance craft and ensures necessary job coverage is available. As a result, the augmented RP qualified resources for performance of in plant protective actions can also be extended to 90 minutes to coincide with response times of other disciplines.

3.2.7 Firefighting Function (Not Applicable)

Per NUREG-0654, Revision 1, [Reference 3] the Firefighting functional area is addressed by use of a Fire Brigade and managed in accordance with site TSs. NUREG-0654, Revision 2, [Reference 1] Table B-1, does not address the firefighting function as this is performed under the site Fire Protection Plan.

A. In Revision 40, of the SPS Emergency Plan, Fire Fighting response by on-shift personnel was the responsibility of the five (5) member Fire Brigade responsible for performance of this function as an ancillary duty. Augmented support from offsite resources was available as needed.

B. The current SPS Emergency Plan maintains the Revision 40 requirement for (5) five on-

shift Fire Brigade members and augmentation by local fire support resources.

C. The proposed change removes the reference to the Firefighting function in Table 5.1 as this is addressed under the SPS Technical Requirements Manual (TRM). This change is aligned with the guidance provided in NUREG-0654, Revision 2, [Reference 3] Table B-1.

3.2.8 Rescue Operations and First-Aid Function (Not Applicable)

NUREG-0654, Revision 1, [Reference 3] Table B-1, notes that this function may be provided by shift personnel assigned other functions. NUREG-0654, Revision 2, [Reference 1] Table B-1, removed rescue operations and first aid as these tasks are outside the purview of the Emergency Plan.

A. SPS Emergency Plan Revision 40, provided for first aid treatment of injured personnel by qualified on-shift personnel as an ancillary duty.

B. The current SPS Emergency Plan maintains this commitment through the use of on-shift First Aid Responders.

C. The proposed change removes the reference to the Rescue Operations and First Aid function in Table 5.1 as this is a responsibility of the Fire Brigade and is maintained in accordance with the site Fire Protection Plan. This change is aligned with guidance provided in NUREG-0654, Revision 2 [Reference 1], Table B-1.

3.2.9 Site Access Control and Personnel Accountability Function (Not Applicable)

NUREG-0654, Revision 1, [Reference 3] the *Site Access Control and Personnel Accountability* functional area is addressed by Security personnel in accordance with the Dominion Fleet Security Plan. NUREG-0654, Revision 2, [Reference 1] Table B-1, removed site access control and personnel accountability functional areas as these are under the purview of the Dominion Fleet Security Plan.

A. In SPS Emergency Plan Revision 40, site access control and accountability were identified as a function of the Security Team Members.

B. The current SPS Emergency Plan maintains the Revision 40 requirement.

C. The proposed change removes the reference to the Site Access Control and Personal Accountability function in Table 5.1 as this is addressed in the Dominion Fleet Security plan. This change is aligned with guidance provided in NUREG-0654, Revision 2, [Reference 1] Table B-1.

3.3 Conclusions

The proposed changes continue to support the functional areas of the Emergency Plan, continue to ensure the protection of the health and safety of the public and site personnel, and will not present a significant burden to on-shift personnel.

Elimination of on-shift Maintenance positions and extending augmented response times, given

the diverse and redundant capabilities of plant systems and the results of the procedure analysis, will not adversely affect the site's ability to respond to an event or delay performance of maintenance functions. These changes will not adversely impact the site's ability to respond to an event or delay performance of maintenance functions.

Reduction, re-alignment and extension of the RP Technician staffing requirements and augmentation response times from a total of eight (8) RP individuals at 60 minutes to a total of six (6) additional RP Technicians at 90 minutes, does not adversely affect the performance of the radiological assessment or protective action functions associated with event response. Dominion Energy Virginia has incorporated technologies in access control and dosimetry as well as installed in-plant monitoring capability and the use of telemetry which ensures the emergency response functions identified in the SPS Emergency Plan will continue to be performed. The proposed changes do not result in a reduced ERO capability to effectively respond to an emergency.

The proposed change extends the times at which the offsite monitoring teams are staffed by 30-minutes. However, offsite monitoring teams will be dispatched at an Alert or higher classification rather than at a SAE or General Emergency (GE). Initiation of offsite monitoring at a lower classification will continue to support timely performance of the function even with the extended dispatch time.

Removal of references to chemistry positions that do not perform EP functions and chemistry activities that are performed as a function of site TSs is consistent with NRC guidance. Similarly, removal of references to administrative/support positions is included in the proposed change. These positions and functions will be maintained in the site EPIPs.

A procedure analysis demonstrated that on-shift personnel would be able to initiate troubleshooting activities during the first 90 minutes and that there are no technical support or corrective action activities requiring additional mechanical or electrical expertise during this timeframe. The analysis concludes that the proposed extension of augmented response to 90 minutes would result in no conflicts in the performance of on-shift tasks.

Therefore, the proposed changes continue to ensure the SPS Emergency Plan will meet the requirements of 10 CFR 50.54(q)(2), 10 CFR 50, Appendix E, and the planning standards of 10 CFR 50.47(b).

4.0 REGULATORY EVALUATION

4.1 Applicable Regulatory Requirements/Criteria

Title 10 Code of Federal Regulations 50.47(b)(1) and (2):

(b) The onsite and, except as provided in paragraph (d) of this section, Off-site emergency response plans for nuclear power reactors must meet the following standards:

(1) Primary responsibilities for emergency response by the nuclear facility licensee and by State and local organizations within the Emergency Planning Zones have been assigned, the emergency responsibilities of the various supporting organizations have

been specifically established, and each principal response organization has staff to respond and to augment its initial response on a continuous basis.

(2) On-shift facility licensee responsibilities for emergency response are unambiguously defined, adequate staffing to provide initial facility accident response in key functional areas is maintained at all times, timely augmentation of response capabilities is available and the interfaces among various onsite response activities and Off-site support and response activities are specified.

The existing SPS Emergency Plan includes onsite and off-site emergency response plans that meet the requirements listed above. This LAR proposes to remove maintenance personnel from shift and extend some of the current staff augmentation response times from 45/60 minutes to 90 minutes. The SPS Emergency Plan will continue to have onsite and off-site emergency response plans that meet 10 CFR 50.47(b).

Relevant portions of Title 10 Code of Federal Regulations 50.54(q) are as follows:

(q) Emergency Plans

(1)(iv) Reduction in effectiveness means a change in an emergency plan that results in reducing the licensee's capability to perform an emergency planning function in the event of a radiological emergency.

(2) A holder of a license under this part, or a combined license under part 52 of this chapter after the Commission makes the finding under § 52.103(g) of this chapter, shall follow and maintain the effectiveness of an emergency plan that meets the requirements in appendix E to this part and, for nuclear power reactor licensees, the planning standards of § 50.47(b).

(4) The changes to a licensee's emergency plan that reduce the effectiveness of the plan as defined in paragraph (q)(1)(iv) of this section may not be implemented without prior approval by the NRC. A licensee desiring to make such a change after February 21, 2012, shall submit an application for an amendment to its license. In addition to the filing requirements of §§ 50.90 and 50.91, the request must include all emergency plan pages affected by that change and must be accompanied by a forwarding letter identifying the change, the reason for the change, and the basis for concluding that the licensee's emergency plan, as revised, will continue to meet the requirements in appendix E to this part and, for nuclear power reactor licensees, the planning standards of § 50.47(b).

The existing SPS Emergency Plan meets the planning standards of 10 CFR 50.47(b) and 10 CFR 50, Appendix E, as required by 10 CFR 50.54(q)(2). This LAR proposes to remove maintenance personnel from shift and increase some of the staff augmentation response times from 60 minutes to 90 minutes. These proposed changes are considered a reduction in effectiveness as defined in 10 CFR 50.54(q)(1)(iv) and require submittal based on 10 CFR 50.54(q)(4). Therefore, Dominion Energy Virginia is submitting this LAR pursuant to 10 CFR 50.90.

The SPS Emergency Plan will continue to meet the requirements of 10 CFR 50.54(q)(2) by maintaining the effectiveness of the Emergency Plan such that it meets the requirements of 10 CFR 50, Appendix E, and the planning standards of 10 CFR 50.47(b).

Relevant portions of Title 10 Code of Federal Regulations Part 50 Appendix E.IV are as follows:

A. Organization

The organization for coping with radiological emergencies shall be described, including definition of authorities, responsibilities, and duties of individuals assigned to the licensee's emergency organization and the means for notification of such individuals in the event of an emergency. Specifically, the following shall be included:

A.9. By December 24, 2012, for nuclear power reactor licensees, a detailed analysis demonstrating that on-shift personnel assigned emergency plan implementation functions are not assigned responsibilities that would prevent the timely performance of their assigned functions as specified in the emergency plan.

The existing SPS Emergency Plan includes a description of the organization, including definition of authorities, responsibilities, and duties of individuals. The current Emergency Plan (Revision 71) complies with 10 CFR 50, Appendix E.IV.A.9. This LAR proposes to remove maintenance personnel from shift and increase some of the staff augmentation response times from 60 minutes to 90 minutes. A staffing analysis has been performed to demonstrate continued compliance with 10 CFR 50, Appendix E.IV.A.9. The staffing analysis supports acceptability of the 90-minute staff augmentation times. The proposed changes to the SPS Emergency Plan will continue to describe the authorities, responsibilities, and duties of these individuals. Therefore, with the changes proposed in the LAR, the requirements of 10 CFR 50, Appendix E, continue to be met.

NUREG-0654/FEMA-REP-1, Revision 1

NUREG-0654/FEMA-REP-1, Revision 1, Section II.B.5 states, in part:

"Each licensee shall specify the positions or title and major tasks to be performed by the persons to be assigned to the functional areas of emergency activity. For emergency situations, specific assignments shall be made for all shifts and for plant staff members, both onsite and away from the site. These assignments shall cover the emergency functions in Table B-1 entitled, 'Minimum Staffing Requirements for Nuclear Power Plant Emergencies.' The minimum on-shift staffing levels shall be as indicated in Table B-1. The licensee must be able to augment on-shift capabilities within a short period after declaration of an emergency. This capability shall be as indicated in Table B-1."

NUREG-0654, Revision 1, [Reference 3] and NUREG-0654, Revision 2, [Reference 1] Table B-1, state general guidance concerning the onsite emergency organization to allow licensees some flexibility in the number of on-shift staff required by emergency plans for response to emergency events. NUREG-0654 guidance recommends that there be, in addition to on-shift personnel, 30-minute and 60-minute responders. NUREG-0654, Revision 2, [Reference 1] Table B-1, provides for augmented response times of 60 and 90 minutes. The augmented ERO responders assume

many managerial, engineering, and administrative duties from the on-shift personnel, allowing on-shift personnel to focus more fully on plant operations. NUREG-0654, Revision 2, [Reference 1] also provides the guidance that augmentation time be measured from the declaration of the emergency. The current SPS Emergency Plan staffing in Table 5.1 and 5.2 meets the intent of NUREG-0654, Revision 1, [Reference 3], Table B-1. This LAR proposes to remove maintenance personnel from shift and extend some of the staff augmentation response times from 45, 60, and 75-minute response to 90 minutes. The proposed changes have been evaluated in a staffing analysis performed to meet 10 CFR 50, Appendix E.IV.A.9 requirements. The proposed changes to the SPS Emergency Plan meet the intent of NUREG-0654, Revision 2, [Reference 1] Table B-1 (i.e., continues to cover the emergency functional areas in Table B-1).

4.2 Precedent

The proposed SPS Emergency Plan changes are similar to changes approved for other licensees, including Susquehanna (ML030830543), Fermi (ML102700478), River Bend (ML012710218), Watts Bar (ML041810056), Point Beach (ML16118A154), Duane Arnold (ML17220A026), Monticello (ML17349A916) and Prairie Island (ML17362A202), South Texas Project (ML18159A212), Sequoyah (ML18159A461) and Diablo Canyon (ML19196A309). Furthermore, the proposed SPS Emergency Plan changes and evaluation documented in this submittal continue to meet the standards of 10 CFR 50.47(b) and the requirements of 10 CFR 50, Appendix E.

4.3 No Significant Hazards Considerations Determination

In accordance with the requirements of 10 CFR 50.90, Dominion Energy Virginia requests an amendment to facility Renewed Facility Operating Licenses DPR-32 and DPR-37 for SPS Units 1 and 2 to revise the Emergency Plan. Completion of an on-shift staffing analysis of the ERO supported the removal of maintenance personnel from shift and extend some of the staff augmentation response times from 60-minute response to 90 minutes. Dominion Energy Virginia proposes to revise the ERO staff augmentation response times in the SPS Emergency Plan.

Dominion Energy Virginia has evaluated the proposed amendment against the standards in 10 CFR 50.92 and has determined that the operation of SPS in accordance with the proposed amendment presents no significant hazards. The Dominion Energy Virginia evaluation against each of the criteria in 10 CFR 50.92 follows:

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

   Response: No.

   The proposed increase in staff augmentation times has no effect on normal plant operation or on any accident initiator or precursors and does not impact the function of plant structures, systems, or components (SSCs). The proposed change does not alter or prevent the ability of the Emergency Response Organization to perform their intended functions to mitigate the consequences of an accident or event. The ability of the

emergency response organization to respond adequately to radiological emergencies has been demonstrated as acceptable through a staffing analysis as required by 10 CFR 50 Appendix E.IV.A.9.

Therefore, the proposed Emergency Plan changes do not involve a significant increase in the probability or consequences of an accident previously evaluated.

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

   Response: No.

   The proposed change does not impact the accident analysis. The change does not involve a physical alteration of the plant (i.e., no new or different type of equipment will be installed), a change in the method of plant operation, or new operator actions. The proposed change does not introduce failure modes that could result in a new accident, and the change does not alter assumptions made in the safety analysis. This proposed change increases the staff augmentation response times in the Emergency Plan, which are demonstrated as acceptable through a staffing analysis as required by 10 CFR 50 Appendix E.IV.A.9. The proposed change does not alter or prevent the ability of the Emergency Response Organization to perform their intended functions to mitigate the consequences of an accident or event.

   Therefore, the proposed change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. Does the proposed change involve a significant reduction in a margin of safety?

   Response: No.

   Margin of safety is associated with confidence in the ability of the fission product barriers (i.e., fuel cladding, reactor coolant system pressure boundary, and containment structure) to limit the level of radiation dose to the public. The proposed change is associated with the Emergency Plan staffing and does not impact operation of the plant or its response to transients or accidents. The change does not affect the Technical Specifications. The proposed change does not involve a change in the method of plant operation, and no accident analyses will be affected by the proposed change. Safety analysis acceptance criteria are not affected by this proposed change.

   Therefore, the proposed change does not involve a significant reduction in a margin of safety.

4.4 Conclusion

Dominion Energy Virginia has evaluated the proposed change against the applicable regulatory requirements and acceptance criteria. The proposed SPS Emergency Plan changes continue to assure that regulatory requirements and emergency planning standards associated with emergency response are met. The revised Emergency Plan will continue to provide the necessary

response staff with the proposed change. A staffing analysis and a functional analysis were performed for the proposed change on the timeliness of performing major tasks for the functional areas of Emergency Plan. The analysis concluded that an extension in staff augmentation times would not significantly affect the ability to perform the required Emergency Plan tasks. Therefore, the proposed change is determined to not adversely affect the ability to meet the requirements of 10 CFR 50.54(q)(2), 10 CFR 50, Appendix E, and the emergency planning standards as described in 10 CFR 50.47 (b).

Based on the above evaluation, Dominion Energy Virginia has determined that operation of the facility in accordance with the proposed change does not involve a significant hazards consideration as defined in 10 CFR 50.92(c), in that it does not: (1) involve a significant increase in the probability or consequences of an accident previously evaluated; (2) create the possibility of a new or different kind of accident from any accident previously evaluated; or (3) involve a significant reduction in a margin of safety.

5.0 ENVIRONMENTAL CONSIDERATION

Dominion Energy Virginia has determined that the proposed change would not revise a requirement with respect to installation or use of a facility or component located within the restricted area, as defined in 10 CFR 20, nor would it change an inspection or surveillance requirement. The proposed amendment does not involve:

(i) a significant hazards consideration, or

(ii) authorize a significant change in the types or a significant increase in the amounts of any effluent that may be released Off-site, or

(iii) result in a significant increase in individual or cumulative occupational radiation exposure.

Accordingly, the proposed amendment meets the eligibility criterion for a categorical exclusion set forth in 10 CFR 51.22(c)(9). Therefore, Dominion Energy Virginia concludes that pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment needs to be prepared in connection with the proposed amendment.

6.0 REFERENCES

1) 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,” December 2019. (ADAMS Accession No. ML19347D139)

2) NRC 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)

3) NUREG-0654/FEMA-REP-1, Revision 1, “Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants,” November 1980. (ADAMS Accession No. ML040420012)

4) NRC Letter to Virginia Electric and Power Company, “NUREG-0737 Item III.A.2.1 Emergency Plan Upgrade to Meet Rule, Surry Power Station, Units No. 1 and No. 2”, dated May 10, 1983. (ADAMS Accession No. ML20076C761)

5) NRC Letter to Virginia Electric and Power Company, “Change to Emergency Plan Augmentation Goals of Selected Responders from 30 Minutes to 45 Minutes for Surry Power Station,” dated December 13, 1995. (ADAMS Accession No.ML18153A552)

6) NRC Letter to Virginia Electric and Power Company, “North Anna Power Station, Unit Nos. 1 and 2, and Surry Power Station, Unit Nos. 1 and 2 – Issuance of Amendment Nos. 281, 264, 284, and 294 to Consolidate Emergency Operations Facilities and Associated Emergency Plan Changes (EPID L-2018-LLA-0014),” dated February 27, 2019. (ADAMS Accession ML19031B227)

7) NEI 10-05, Revision 0, “Assessment of On-Shift Emergency Response Organization Staffing and Capabilities,” dated June 2011. (ADAMS Accession No. ML111751698)

8) NUREG-0737, Final Report, “Clarification of TMI Action Plan Requirements,” dated November 1980. (ADAMS Accession No. ML051400209)

9) NUREG-0737, Supplement 1, “Clarification of TMI Action Plan Requirements: Requirements for Emergency Response Capability,” dated January 1983. (ADAMS Accession No. ML102560009)

10) Surry Power Station, Units 1 and 2, Updated Final Safety Analysis Report, Revision 50.

11) NUREG-0696, Final Report, “Functional Criteria for Emergency Response Facilities,” dated February 1981. (ADAMS Accession No. ML051390358)

12) NEI 99-01, Revision 4, “Development of Emergency Action Levels for Non-Passive Reactors,” January 2003. (ADAMS Accession No. ML ML030230250)

13) NRC Letter to Virginia Electric and Power Company, “North Anna Power Station, Units Nos. 1 and 2 (NAPS), and Surry Power Station, Unit Nos. 1 and 2 (Surry) – Issuance of Amendments for Changes to the Emergency Plan (TAC Nos. ME3383, ME3384, ME3385, and ME3386),” dated January 26, 2011. (ADAMS Accession No. ML103220114)

14) NRC Letter to Virginia Electric and Power Company, “North Anna Power Station, Units No 1 and 2 (NAPS), and Surry Power Station, Units No. 1 and 2 (Surry) – Issuance of Amendments for Changes to the Emergency Action Level Revisions (TAC Nos. ME9754, ME9754, ME9755, ME9756),” dated September 25, 2013. (ADAMS Accession No. ML131186A19)

15) NEI 99-01, Revision 6, “Development of Emergency Action Levels for Non-Passive Reactors,” November 2012. (ADAMS Accession No. ML12326A805)

16) NRC Letter to Virginia Electric and Power Company, “Millstone Power Station Units 1, 2 and 3, North Anna Power Station Units 1 and 2, and Surry Power Station Units 1 and 2 – Issuance of Amendments re: Adoption of Emergency Action Level Schemes Pursuant to NEI 99-01, Revision 6,” dated December 31, 2019. (ADAMS Accession No. ML19305D248)

17) NSIR/DPR-ISG-01, “Interim Staff Guidance, Emergency Planning for Nuclear Power Plants.” Revision 0, November 2011. (ADAMS Accession No. ML113010523)

18) Surry Power Station Emergency Plan (SEP), Revision 71, dated August 2, 2021.

ATTACHMENT 2-1

Surry Power Station, Units 1 and 2:

Marked-up Emergency Plan Pages

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

Emergency Plan

Title: Surry Power Station Emergency Plan

Revision Number:	**Effective Date:**
XX	TBD

Approvals on File

- Emergency Planning Zones (EPZs)
- Plume Exposure Pathway EPZ - An area delineated by an approximate ten-mile radius circle around the Surry Power Station.
- Ingestion Exposure Pathway EPZ - An area delineated by an approximate fifty-mile radius circle around the Surry 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.
- 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.
- Facility Activation – An Emergency Response facility is activated when the minimum staff per Figures 5.3, 5.4 and 5.5 are available and the facility is ready to assume assigned functions. Although the facility may be ready, the on-shift staff may prioritize completion of critical tasks prior to turnover.
- 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 HOSTILE ACTION that results 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 immediatesite 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 Communities - This term shall be used to denote the counties of Surry, Isle of Wight, York and James City and the cities of Williamsburg and Newport News located in the approximate ten (10) mile Emergency Planning Zone.

- ~~Local Media Center (LMC) - This facility provides a near site location for official media releases. The LMC is in the Surry Nuclear Information Center.~~
- Nearsite - Within the Site Boundary, 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 Site Boundary.
- Onsite - The Protected Area (area surrounded by security fence) and Switchyard.
- 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 - 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 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 exposures.
- 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.
- 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.
- Site Boundary - The company-owned area within 1650 feet of Surry Unit 1 containment.
- Semi-annual - Occurring once during each of the first and last six months of the calendar year.
- Station Emergency Manager (SEM) - Designated onsite individual having the responsibility and authority for implementing the Emergency Plan.

1.1 Acronyms and Abbreviations

A/E	-	Architect/Engineer
AC	-	Alternating Current
APs	-	Abnormal Procedures
Appx.	-	Appendix
ATWT	-	Anticipated Transient Without Trip
BTL	-	Bottle
BX	-	Box
cc	-	Cubic Centimeter
CDE	-	Committed Dose Equivalent
Ce	-	Cerium
CEDE	-	Committed Effective Dose Equivalent
CERC	-	Corporate Emergency Response Center
CFR	-	Code of Federal Regulations
CH	-	Charging System
cm	-	Centimeter
COVEOP	-	Commonwealth of Virginia Emergency Operations Plan
cpm	-	counts per minute
Cs	-	Cesium
CSD	-	Cold Shutdown
CVCS	-	Chemical and Volume Control System
CW	-	Circulation (Circ.) Water
DBE	-	Design Basis Earthquake
DC	-	Direct Current
DDE	-	Deep Dose Equivalent
DECON	-	Decontaminate
DEPT.	-	Department
DLR	-	Dosimeter of Legal Record (personnel TLD)
DOE	-	Department of Energy
dpm	-	disintegrations per minute
ESAD	-	Emergency Security ~~Administrative~~ Director
EALs	-	Emergency Action Levels
EAS	-	Emergency Alert System
ECC	-	Emergency Control Center
ECCS	-	Emergency Core Cooling System
EDE	-	Effective Dose Equivalent
e.g.	-	For example [From Latin exempli gratia]
EMD	-	Emergency Maintenance Director

LAN	-	Local Area Network
LCO	-	License Condition of Operation
~~LMC~~	~~-~~	~~Local Media Center~~
LOCA	-	Loss of Coolant Accident
LW	-	Liquid Waste
MCL	-	Management Counterpart Link
MIDAS	-	Meteorological Information and Dose Assessment System
ml	-	milliliter
mph	-	miles per hour
mR/hr	-	Millirem perhour
MSL	-	Mean Sea Level
MWe	-	Megawatt electric
MWt	-	Megawatt thermal
N/A	-	Not applicable
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
OPS	-	Operations
OPX	-	Off-Premises exchange (Communications System)
OSC	-	Operational Support Center
PAGs	-	Protective Action Guides
PAR	-	Protective Action Recommendation
PBX	-	Private Branch exchange (Communications System)
PCS	-	Plant Computer System
Pk.	-	Package
PMCL	-	Protective Measures Counterpart Link
PORV	-	Power Operated Relief Valve
Pr	-	Pair
PSIA	-	Pounds per square inch absolute
PSIG	-	Pounds per square inch gauge
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

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 augmentation~~activation~~ of the ~~full~~emergency 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 Surry ISFSI under provisions of Title 10 of the Code of Federal Regulations, Part 72, Subpart B, Section 32, Subsection (c).

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 emergency response facilities. Mobilization of the Offsite Monitoring Teams also occurs at this point.

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.

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 information are available to the Shift Manager in the Control Room to 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 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 and is updated as to the status of the emergency. Following this relief,~~by the Station Emergency Manager ~~function may shift to~~in the onsite Technical Support Center (TSC).

The Corporate Emergency Response Center (CERC) is activated simultaneously with, but independent of, the TSC. The CERC is staffed by corporate personnel, including the Corporate Response Manager and Technical Support Manager, who direct the activities of this facility. Responsibilities of the Technical Support Manager, once the CERC has been activated, include communicating emergency status to the State and local governments, directing the efforts of the offsite monitoring teams, making radiological assessments, recommending offsite protective measures to the State, and arranging for the dispatch of any special assistance or services requested by the station. The Corporate Response Manager has the ultimate authority to commit company resources and set policy as part of managing the long term recovery effort.

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 onshift manning is assumed to be on back-shift because the normal Station complement of personnel is only present during regular duty hours on scheduled workdays.~~

The basic shift (back-shift) complement of personnel performing EP functions is comprised of Operations and~~,~~ 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). Dominion Energy's Nuclear Facility Quality Assurance Program Description (Topical Report DOM-QA-1) provides the details of the normal station organization.

5.2 Emergency Response Organization

The first line of control in an emergency at Surry Power Station lies with the onshift 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 Table~~Figur~~e 5.1. ~~Also, personnel assigned to the Search and Rescue Team, the First Aid Team, and the Fire Brigade may be assigned other normal duty functions until their emergency planning services are required~~. The capabilities of the assigned onshift 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, onshift personnel make notifications to off-site authorities, and initiate a callout of supplementary emergency response personnel as required. The EPIPs are used procedurally to 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, Station Security will commence callout of supplementary emergency response personnel. Table 5.1 also represents the minimum number of personnel that are required to activate the TSC, OSC and CERC~~augment emergency operations~~ and the estimated response times of these personnel. The composition of the emergency response personnel assigned EP functions on shift and those who make up the augmentation crews are consistent with the staffing level goals promulgated by NRC Revised Table B-1~~Supplement 1 to NUREG 0737~~. 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~~ consists of at least the positions discussed below. Reporting relationships are as depicted in Figures 5.3~~2.~~, 5.4 and 5.5. 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, and designated individuals will receive training for their emergency response duties.

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 operates from the Technical Support Center. The SEM ultimately reports to the Corporate Response Manager, once augmented. SEM responsibilities shall include, but not be limited to:

1) Classifying the emergency,
2) Authorizing notifications to the NRC, State and local agencies of the emergency status,
3) Recommending protective actions,
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 CERC Technical Support Manager will be responsible for notifying the State and local agencies of the emergency status and for recommending offsite protective measures to the State.

5.2.1.2 Emergency Communicators

The Emergency Communicators report to the SEM in the Control Room prior to activation of the TSC and CERC.~~, and to the TSC SEM after its activation.~~ The primary duties of the Emergency Communicators are to initially notify and periodically update the Emergency Operations Centers of the communities within the 10- mile Emergency Planning Zone, the Virginia Emergency Operations Center (VEOC), and the NRC. Responsibility for notification of State and local governments will transfer to the TSC or CERC upon activation of these facilities.~~staff after it's activation.~~

5.2.1.3 Emergency Procedures Coordinator

The Emergency Procedures Coordinator (EPC) reports to the SEM in the TSC as part of the augmentation of the onshift 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 EPIPs and other appropriate procedures,
4) Assisting the SEM in obtaining all procedures generated as a results 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 TSC as part of the augmentation of the onshift 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 onshift 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 ETD 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 (STA) will remain in the Control Room to advise the Shift Supervisor or Assistant Shift Supervisor on engineering and accident assessment matters. 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 Security~~Administrative~~ Director

The Emergency Security~~Administrative~~ Director (ES~~A~~D) reports to the SEM in the TSC as part of the augmentation of the on-shift emergency organization. The ES~~A~~D acts as the liaison between site Security and the TSC and directs ~~activities of the Administrative Support Team and advises the SEM 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 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 SEM in the Technical Support Center after relieving the interim director who was the Senior Health Physics representative onsite at the initiation of the emergency. He directs the activities of the Radiation Protection Supervisor in maintaining the Radiation Protection Program onsite 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 CERC.

Other duties of the RAD are to provide status of offsite releases to the SEM, to ~~direct activities of the Chemistry Team following augmentation, to~~ evaluate radiological conditions and recommend onsite and offsite protective actions to the SEM, to provide recommendations and Health Physics coverage for onsite corrective actions, to direct decontamination efforts, and to provide HP coverage for evacuation of onsite personnel.

5.2.1.10 Radiation Protection Supervisor

The position of Radiation Protection Supervisor (RPS) will be filled upon augmentation of the on-shift emergency organization. The RPS normally operates from the Station HP Office and reports to the RAD. The RPS 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 functions~~Team~~. The RPS will also provide radiological support, as needed, to the ~~Fire Brigade, First Aid Team, and the Search and Rescue Team.~~Damage Control Team. Additional duties include evaluating onsite radiological conditions, ensuring that appropriate monitoring and sampling are performed, checking the appropriate personnel monitoring is performed and personnel exposures are evaluated, and maintaining dose records. The RPS shall also recommend onsite protective measures to the RAD 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)

The position of OSC Director will be staffed~~filled~~ upon augmentation of the on-shift emergency organization. The OSC Director operates from the Operational Support Center and reports to the SEM, normally through the EMD. The duties and responsibilities of the OSC Director include planning, scheduling and material requisitioning in support of damage control tasks. The OSC Director is also responsible for accountability, dispatch and control of response teams.~~the Fire Brigade, First Aid Team, Search and Rescue Team (until these teams are activated, at which time control may shift to the TSC), and the pool of personnel who compose damage control teams, including mechanics, electricians, instrument technicians and standby operations personnel.~~

5.2.1.12 OSC Support Team

The OSC Support Team operates 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, coordinates the efforts of the Damage Control Teams ~~(if activated)~~ and provides logistical and communications support~~, as necessary.~~

5.2.1.13 Technical Support Team

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

The Team shall assist the ETD in analyzing electrical, mechanical, instrumentation and control, 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 and operates from the designated Chemistry Team staging area. 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 EAD 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 SEM. In a fire or first aid emergency, the Safety/Loss Prevention representative may report directly to the SEM.~~

~~5.2.1.16~~5.2.1.14 **Security Team**

The Security Team reports to the ESD~~AD~~. This Team will maintain personnel accountability, control search activities for unaccounted for personnel, 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 SEM.

~~5.2.1.17~~5.2.1.15 **Dose Assessment Team**

This Team will operate 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 RAD 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 results of offsite releases and dose projections to date to the RAC in the CERC. The Dose Assessment Team Leader will also inform the RAC of the locations of 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 CERC upon full staffing of the facility. The Dose Assessment Team will then provide support to the RAD regarding onsite response and interface with the CERC.

~~5.2.1.18~~5.2.1.16 **Offsite Monitoring Teams**

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

~~5.2.1.19~~5.2.1.17 **Evacuation Monitoring Team**

This Team is under the direction of the RPS and is staffed~~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~~5.2.1.18 **In-Plant Monitoring Team**

The In-Plant Monitoring Team reports to the RPS in the Station HP 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 RPS in the Station HP Office. The team shall analyze samples collected offsite as well as post-accident liquid and gaseous samples.~~

~~5.2.1.22~~5.2.1.19 **Personnel Monitoring and Decontamination Team**

This Team reports to the RPS in the Station HP Office. The Team will monitor and~~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~~5.2.1.20 **Onsite (Out of Plant) Monitoring Team**

An RP Technician~~This Team~~ reports to the RPS and operates out of the Station HP Office. The RP Technician~~team will~~ perform~~s~~ monitoring and sample collection within ~~the owner controlled area 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 OSC Director in the OSC and remain there until their services are needed. Upon activation, the Team will report to the Administrative Support Team Safety/Loss Prevention Representative, the SEM, or the 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 OSC Director in the Operational Support Center until their services are needed. Upon activation, the Team will report to the Administrative Support Team Safety/Loss Prevention representative, the SEM or a designated 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 with other duties will not report to the OSC but will remain in their normal duties unless activated to respond to a first aid emergency.~~

~~5.2.1.26~~5.2.1.21 **Damage Control Team**

The Damage Control Team reports to the OSC Director. When support is required, designated personnel may report to the EMD or the responsible emergency director.

The Damage Control Team is a pool of mechanics, electricians, instrument technicians and operators from which Damage Control Task Teams are formed to conduct emergency assessment and repairs. Damage Control supervisors may be designated to assist in the selection of personnel for Damage Control Task Teams and monitoring of emergency maintenance activities.

~~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 Administrative Support Team Safety/Loss Prevention representative, or the designated Emergency Director as needed.~~

~~The Search and Rescue Team will search for and rescue personnel following an explosion, a fire, or any other hazardous event.~~

5.2.2 Corporate Emergency Position and Team Descriptions

The CERC Emergency Organization~~, when fully implemented, will~~ consists of at least the positions discussed below. Reporting relationships are as depicted in Figure 5.3~~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 staffed~~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 Support Manager, the Nuclear News Manager~~,~~ and 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 the command functions related to~~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 and; assessing and providing protective action recommendations to offsite authorities.~~;~~ The TSM is also responsible for 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 Support Manager

The Resource Support Manager (RSM) reports to the CRM and is responsible for logistical and administrative support for the CERC. The RSM supervises the Resource Support 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 Surry 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~~5.2.2.6 **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~~5.2.2.7 **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~~5.2.2.8 **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~~5.2.2.9 **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 5.2.1.1~~5~~8, and establish the Health Physics Network (HPN) when requested by the NRC.

~~5.2.2.12~~5.2.2.10 **Resource Support Team**

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

~~5.2.2.13~~5.2.2.11 **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~~5.2.2.12 Joint Information Center Support Team

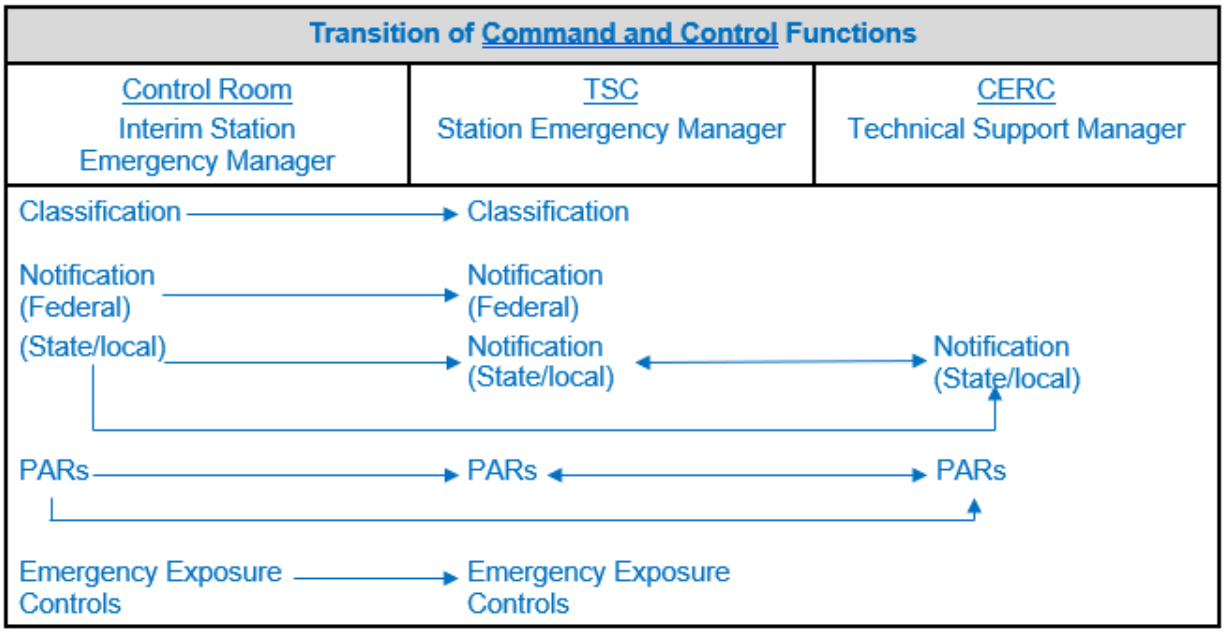
The Joint Information Center Support Team will assist the CTS by providing technical advice and interface with offsite response organization public information staff at the JIC, when staffed~~activated~~.

5.3 Augmentation of Emergency Response Organization

The SEM has the authority to request assistance from any organization which he deems necessary to mitigate the conditions causing the emergency. In addition, the SEM may request offsite assistance in firefighting, 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 in Appendix 10.1 of this Plan.

If conditions at the Station require an Alert or higher classification, the CERC, TSC and OSC shall be activated. The facility activation goal for the TSC, ~~and~~ OSC and CERC is approximately 90~~60~~ minutes from the~~. The activation time goal for the CERC is within 75 minutes of the~~ declaration of an Alert or higher emergency classification.~~, with activation defined as the assembly of required positions in the CERC and the CERC Corporate Response Manager declaring the facility activated~~. The SEM would normally forward information or request additional support through the Corporate Response Manager located in the CERC (See Figure 5.24). Additional resources shall be obtained through personnel assigned to the CERC. Those additional personnel directed to report to the site during the emergency shall report to the SEM for assignment. Figures 5.3, 5.4 and 5.5~~5.a-d~~ display minimum staff required for activation of each facility. The transition of command and control functions from the Control Room to the TSC and CERC are outlined below.



5.3.1 Notification and Response

The emergency response organization (ERO) is notified to augment in the event of an Alert, Site Area Emergency or General Emergency. The following functions 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 CERC.

5.3.1.2 Logistics Support for Emergency Personnel

The CERC Resource Support 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 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 North Anna Power Station, A/E, and NSSS vendor. Consulting services would be obtained as necessary

5.3.1.4 Interface with Governmental Authorities

CERC management is responsible for contacting governmental agencies when coordinating mobilization of resources or requesting additional support. The CERC, once activated, serves as principal point of interaction between the 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 or Public Affairs representative in the Joint Information Center. The Chief Technical Spokesperson is responsible for meeting with the news media. Releases will be coordinated with the appropriate governmental authorities. Briefings can be conducted at the Joint Information Center at the Virginia State Police Administrative Headquarters in Chesterfield, Virginia ~~and,~~ when staffed~~activated~~~~., at the Local Media Center in the Surry Nuclear Information Center (SNIC).~~

5.3.2 Vendor and Supplemental Personnel Support

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, the NSSS vendor will 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:

Virginia Department of General Services, Division of Consolidated Laboratory Services, Richmond, VA (75 minutes)

Virginia Department of Health, Office of Radiological Health Mobile Laboratory (75 minutes)

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.

5.4.5 James City, Isle of Wight and York Counties, and the Cities of Williamsburg and Newport News

The authority and responsibilities of the above counties and cities during a radiological emergency are presented in their respective RERP. The RERPs apply to the radiological emergencies within these locations caused by events at the Surry Power Station. The James City/Williamsburg, Isle of Wight, York and Newport News RERPs are similar to the Surry RERP (as described in Section 5.4.4 above) except for information that is specific to Surry County.

In the event of an emergency of any classification, the SEM will notify all local jurisdictions (Surry County, York County, James City County, Isle of Wight County, Williamsburg City, and Newport News City) and VEOC by using DEENS. If DEENS is out of service, commercial telephone lines will be used to make the notifications. The above localities have a system to call back to the power station and check the message.

5.4.6 Counties and Cities Within the Fifty Mile Ingestion Pathway Zone

The local communities directly involved in the emergency plan are Surry, Isle of Wight, James City, Williamsburg, York and Newport News. They have emergency response functions as previously stated in this section.

The communities within the fifty mile EPZ are listed in Figure 5.6~~5~~a and depicted in Figure 5.6~~5~~b. In the event of an emergency, notification of and interaction with these entities is a function 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 the 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 or Corporate Response Manager may request FRMAC assistance directly or through the NRC (Federal Coordinating Agency). The Company will provide designated facilities for the NRC (Federal Coordinating Agency) in the CERC. There are three commercial air terminals in close proximity (i.e., within 75 minutes driving time) to Surry Power Station: Newport News/Williamsburg International Airport in Newport News, Virginia; Richmond International Airport (RIC) in Richmond, Virginia; and Norfolk International Airport in Norfolk, Virginia. It is estimated that a FRMAC Advance Party could be expected at the site within 6 to 14 hours following the order to deploy.

Further information concerning objectives and organization is provided in the FRMAC Operations Plan (See Appendix 10.3).

MINIMUM SHIFT MANNING REQUIREMENTS
TABLE 5.1

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

Major Functional Area	Major Tasks	Position Title	On Shift	Additional Within Approx. 45 Min.	Additional Within Approx. 60 Min.
Plant Operations and Assessment of Operational Aspects	Plant Operations	**Shift Manager/Unit Supervisor (SRO)**	**3**	--	--
		Control Room Operator (RO)	**4**	--	--
		Control Room Operator (AO)	**7**	--	--
Emergency Direction and Control	Direction and Control of onsite Emergency Activities	Station Emergency Manager	1[a]	--	1
Notification/ Communication	Notify station, local, State, and Federal personnel and maintain communication	Emergency Communicator	2[b]	--	2
Radiological Accident Assessment and Support of Operational Accident Assessment	Corporate Emergency Response Center (CERC)	Technical Support Manager	(Refer to Table 5.2)		
	Radiological Dose Assessment	**Radiological Assessment Director**	**1**[c]	--	1
	CERC Accident Assessment	Radiological Assessment Coordinator		(Refer to Table 5.2)	
	Offsite Surveys	Offsite Monitoring Team Leader	--	--	2
		Offsite Monitoring Team Member	--	--	2
	Onsite (out of plant) Surveys	Onsite Monitoring Team Leader	--	--	1
		Onsite Monitoring Team Member	--	--	1
	Inplant Surveys/ Radiochemistry	**Inplant Monitoring Team Leader**	**1**	--	1
		Inplant Monitoring Team Member	--	--	1

Major Functional Area	Major Tasks	Position Title	On Shift	45 Min.	60 Min.
Radiological Accident Assessment and Support of Operational Accident Assessment [Continued]	Chemistry	Chemistry Team Leader	--	--	1
		Chemistry Team Member	**1**	--	1
Plant System Engineering, Repair and Corrective Action	Technical Support	**Shift Technical Advisor (STA)**	**1[d]**	--	--
		Operational – Technical Support Team Member (Operational Advisor)	--	--	1[e]
		Core - Technical Support Team Member	--	--	1[f]
		Electrical – Technical Support Team Member	--	--	1
		Mechanical – Technical Support Team Member	--	--	1
	Repair and Corrective Action	Mechanical Maintenance - Damage Control Team Member	1[g]	1	1
		Electrical Maintenance - Damage Control Team Member	1[g]	--	2
		Instrument and Control - Damage Control Team Member	--	--	2
Protective Actions	Radiation Protection: a. Access Control b. HP Coverage for repair, corrective actions, search and rescue, first aid, and firefighting. c. Personnel monitoring d. Dosimetry	Personnel Monitoring Team Leader	--	--	2
		Personnel Monitoring Team Member	**1[h]**	--	2

Major Functional Area	Major Tasks	Position Title	On Shift	Additional Within Approx. 45 Min.	Additional Within Approx. 60 Min.
Firefighting and Rescue Operations	Firefighting	Fire Brigade Members (Operations)	2[i]	local support	
		Fire Brigade Members (Security)	**3[i]**		
First Aid and Rescue Operations	First Aid and Rescue	First Aid Team Members	2[j]	local support	
Site Access Control and Personnel Accountability	Security and Personnel Accountability	Security Personnel	(Proprietary)		
			22	1	27

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 on site until relieved.

d Station Technical Specifications allowances for reduced staffing with both units in cold shutdown condition apply.

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 personnel.

j This coverage is provided by personnel who may be assigned other functions (not counted in total)

Major Functional Area	Major Tasks	Position Title/Expertise	Proposed On-Shift	Capability for Additions
				90 min
Emergency Direction and Control	Oversight	Unit Shift Supervisor (SRO)	2	------
		Technical Support Manager (CERC)	------	1
	Classification	Shift Manager (SRO)	1	------
		Station Emergency Manager (TSC)	------	1
		Emergency Operations Director (TSC)	------	1
Notification/ Communication	Licensee, Local/State Federal personnel and maintain communication	Emergency Communicator (SRO/RO/NO)	2	------
		State/local Communicator (CERC)	------	1
		NRC Emergency Communicator (TSC)	------	1
		State/local Communicator (TSC)	------	1
Radiological Accident Assessment	Offsite Dose Assessment	RP Technician	1	------
		Rad Assessment Coordinator (CERC)	------	1
		Dose Assessment Team Member (CERC)	------	1
		Operational Support Coordinator (CERC)	------	1
		Radiological Assessment Director (TSC)	------	1
		Dose Assessment Team Leader (TSC)	------	1
	Offsite Surveys	Offsite Monitoring Team Leader	------	2
		Offsite Monitoring Team Member	------	2
	In-plant/Onsite (out-of-plant) Surveys	RP Technician	1	2
	Protective Actions	RP Technician	1	4
Plant System Engineering	Technical Support	Shift Technical Advisor (SRO/STA)	1	------
		Reactor Engineer (TSC)	------	1
		Electrical Engineer (TSC)	------	1
		Mechanical Engineer (TSC)	------	1
Repair and Corrective	Repair and Corrective Actions	Mechanical Maintenance (OSC)	------	1
		Electrical Maintenance (OSC)	------	1
		I&C Maintenance (OSC)	------	1
		OSC Director (OSC)	------	1
		Mech. Maint. Coordinator (OSC)	------	1
		Elec. Maint. Coordinator (OSC)	------	1
		I&C Maint. Coordinator (OSC)	------	1
		RP Coordinator (OSC)	------	1
Total			9	32

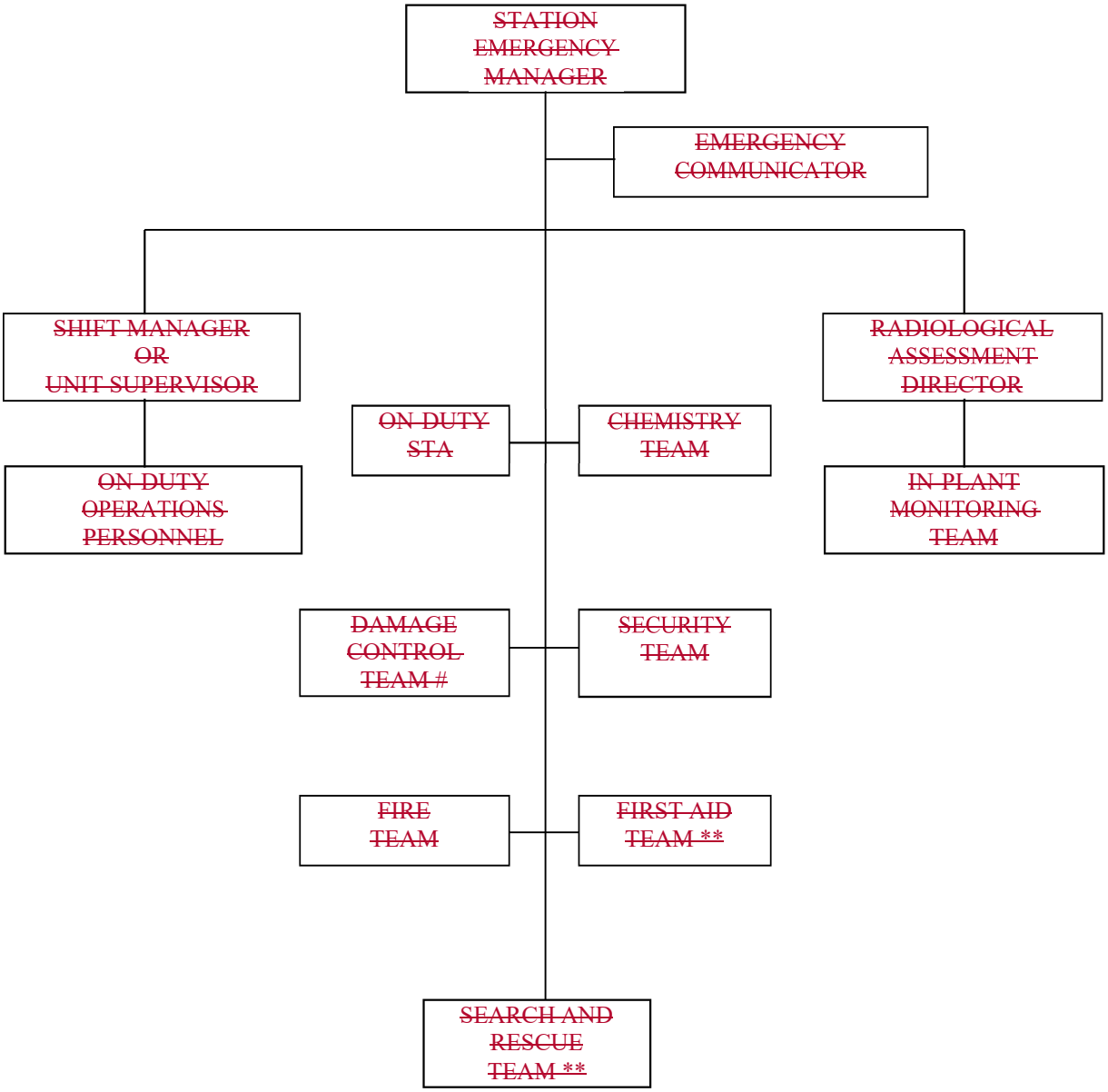
EMERGENCY AND RECOVERY CORPORATE RESPONSE REQUIRED FOR NUCLEAR STATION EMERGENCIES ALERT (OR HIGHER) EMERGENCY CLASSIFICATION

TABLE 5.2

Major Functional Area (Emergency Position Title)	Major Task	Available in:
Management of Corporate Emergency Response Center (Corporate Response Manager)	To coordinate the Company's response to emergency with Federal, State and local authorities	75 min.
Health Physics & Chemistry (Radiological Assessment Coordinator)	Report to Technical Support Manager to conduct radiological assessment	75 min.
Technical Support (Technical Support Manager)	Reports to the Corporate Response Manager to provide technical and evaluation support.	75 min.
Plan/Design/Construction (Resource Support Manager)	Reports to the Corporate Response Manager to provide engineering, technical and vendor support in areas dealing with construction or design changes.	75 min.
News Center Interface (Chief Technical Spokesperson)	Reports to the Corporate Response Manager to become the Company Spokesperson for statements to the news media.	75 min.

~~STATION EMERGENCY ORGANIZATION PRIOR TO AUGMENTATION *~~

~~FIGURE 5.1~~



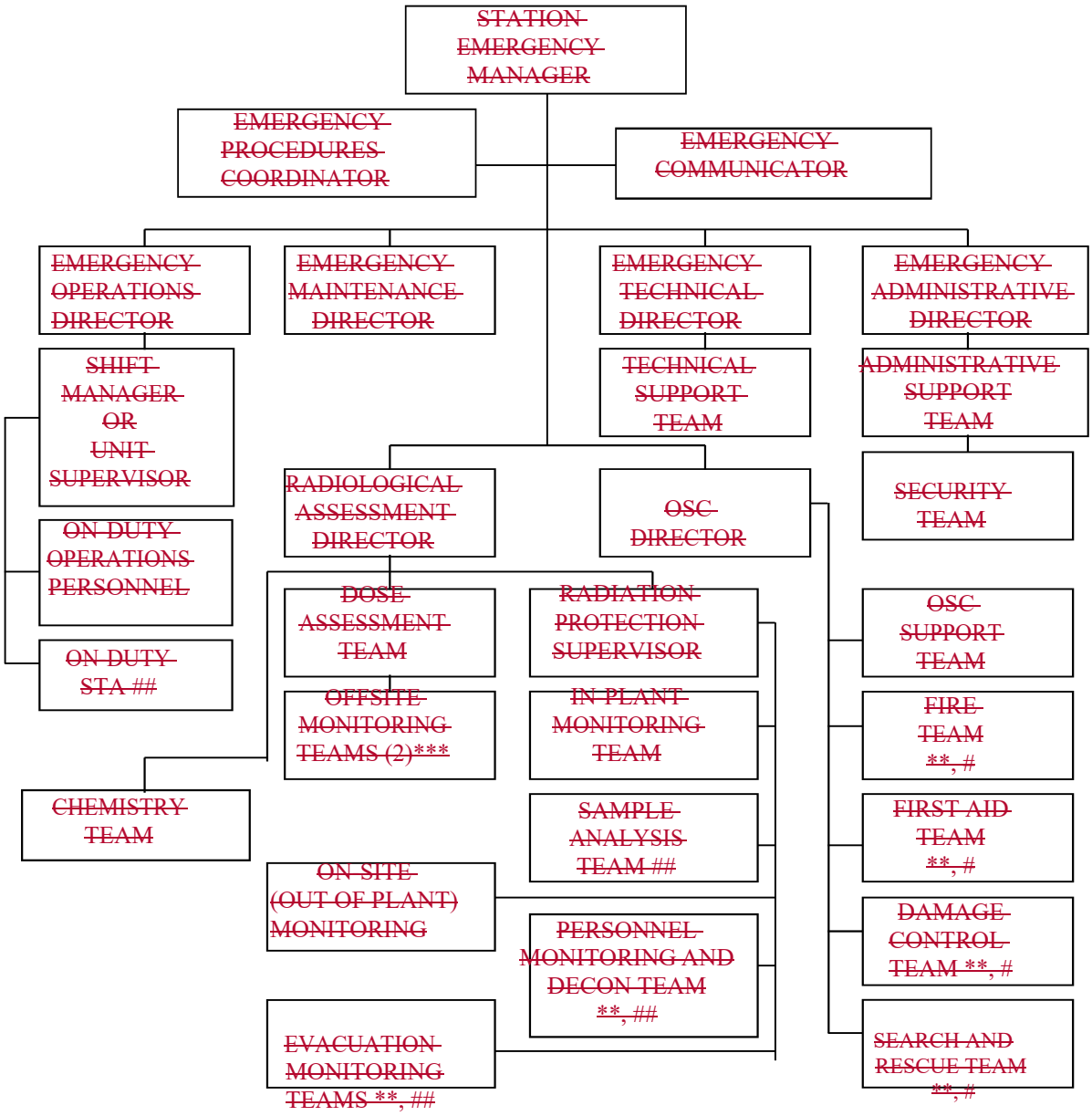
~~* Augmented for Alert, Site Area Emergency and General Emergency.~~

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

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

STATION EMERGENCY ORGANIZATION FOLLOWING AUGMENTATION *

FIGURE 5.2



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

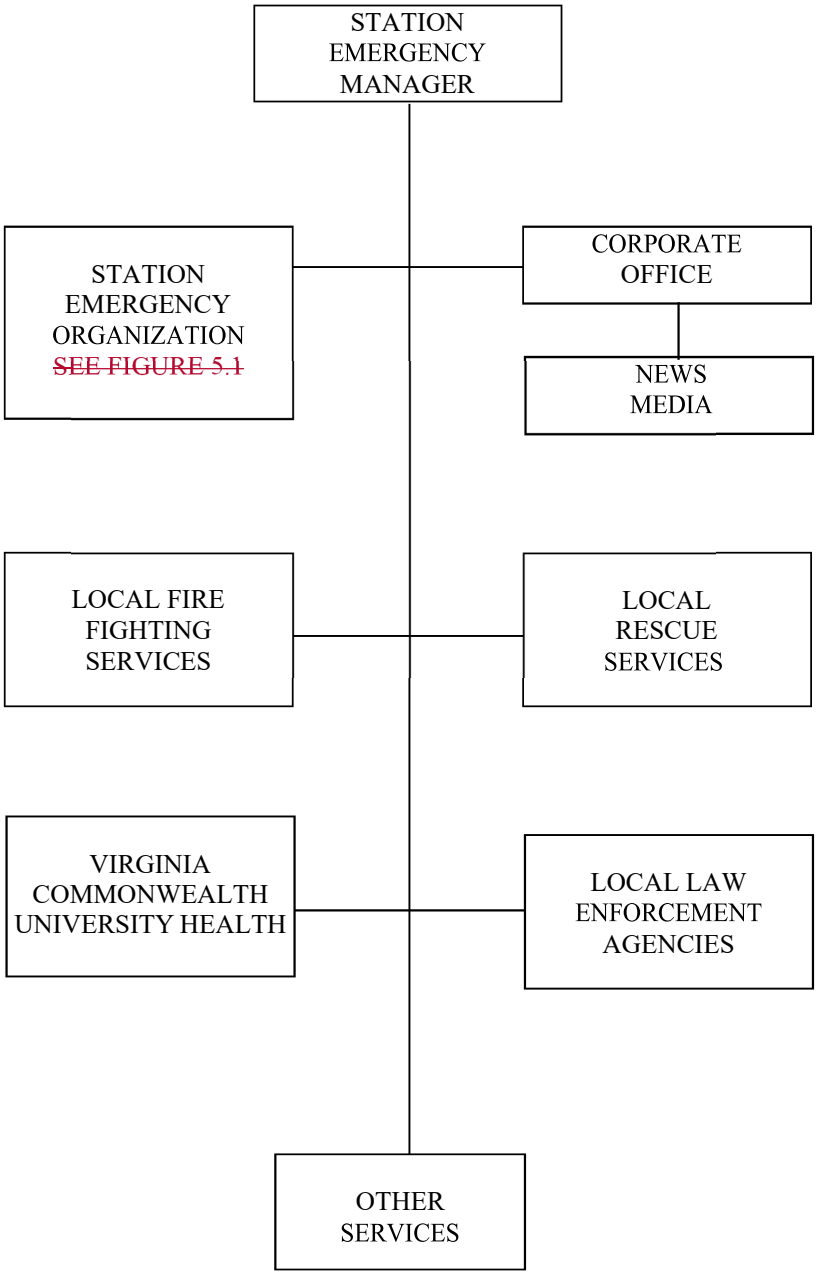
** This team will be activated only if circumstances require this function to be performed.

*** Transferred to CERC when facility activated.

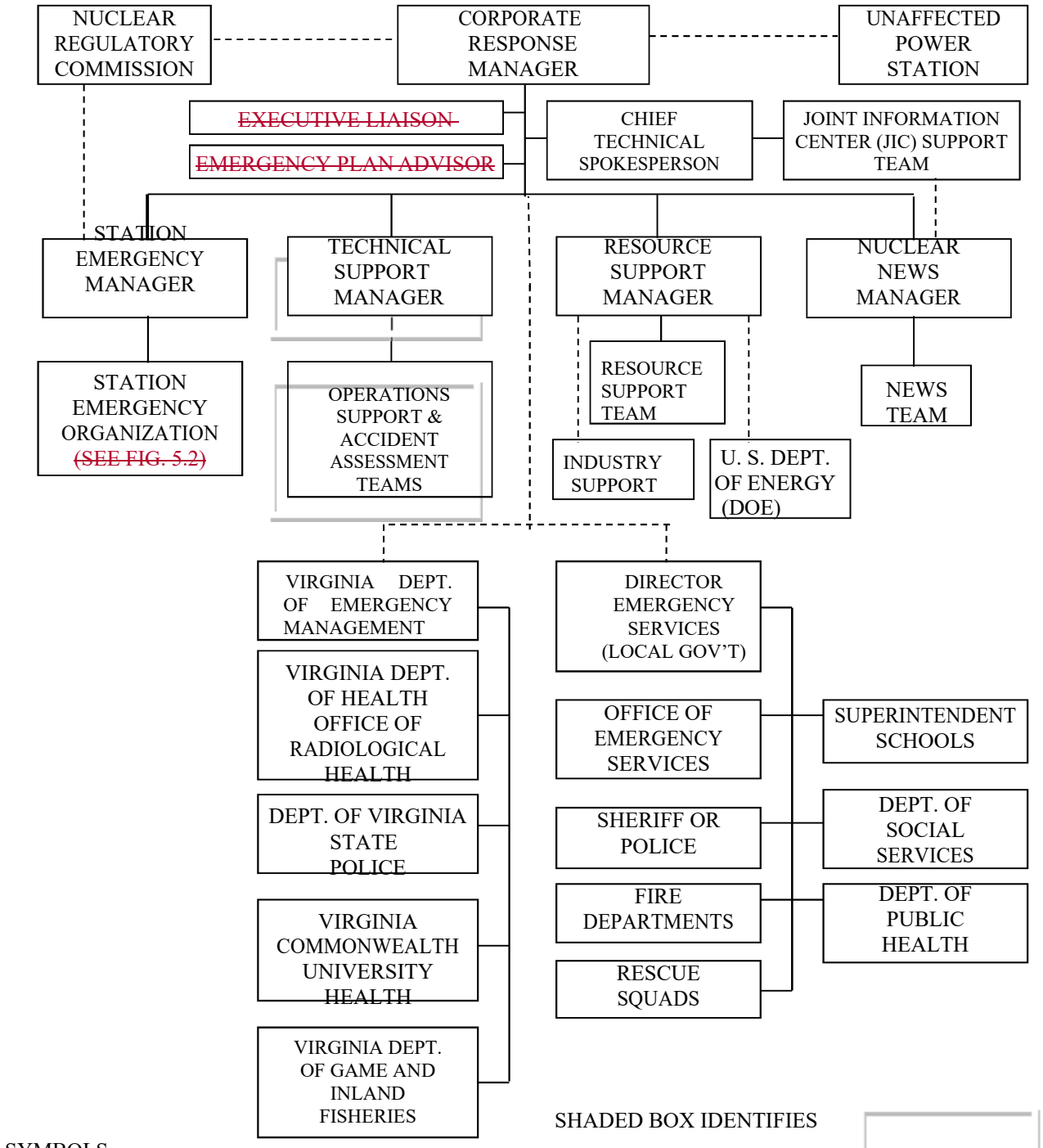
\# Normal reporting structure is shown. If the team is activated, control of the team will transfer to the SEM or appropriate Emergency Director.

\## These teams may consist of only one individual.

STATION TO SUPPORT GROUP INTERFACE
PRIOR TO AUGMENTATION OF THE ONSITE EMERGENCY ORGANIZATION
FIGURE 5.13



FOLLOWING CERC ACTIVATION
FIGURE 5.24



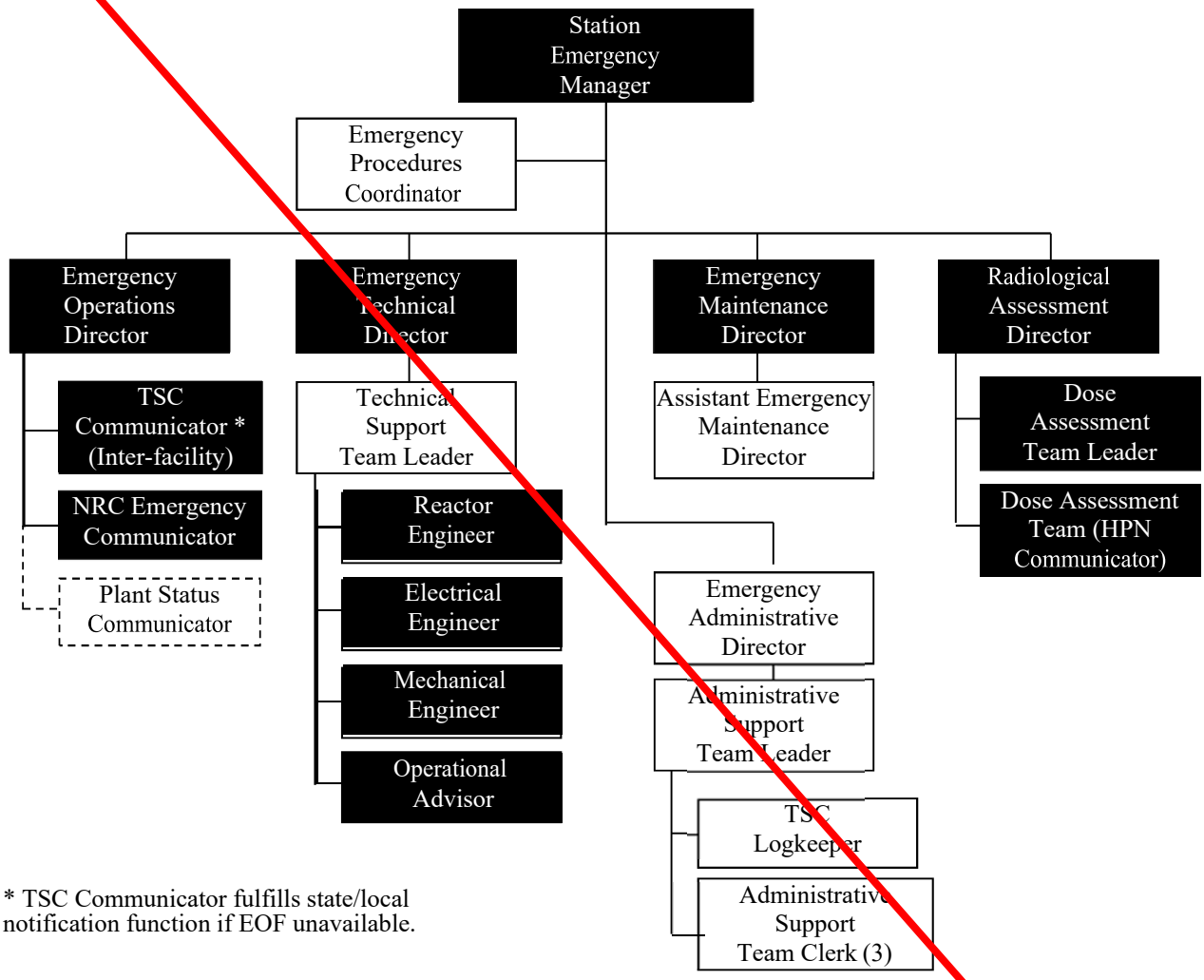
SYMBOLS:

MANAGEMENT CONTROL ———————

COORDINATED ASSISTANCE - - - - - - - - - - - - -

SHADED BOX IDENTIFIES SUPPLEMENTAL STAFFING WHEN CERC SUPPORTING SURRY AND NORTH ANNA

TECHNICAL SUPPORT CENTER ORGANIZATION
FIGURE 5.3~~5.a~~

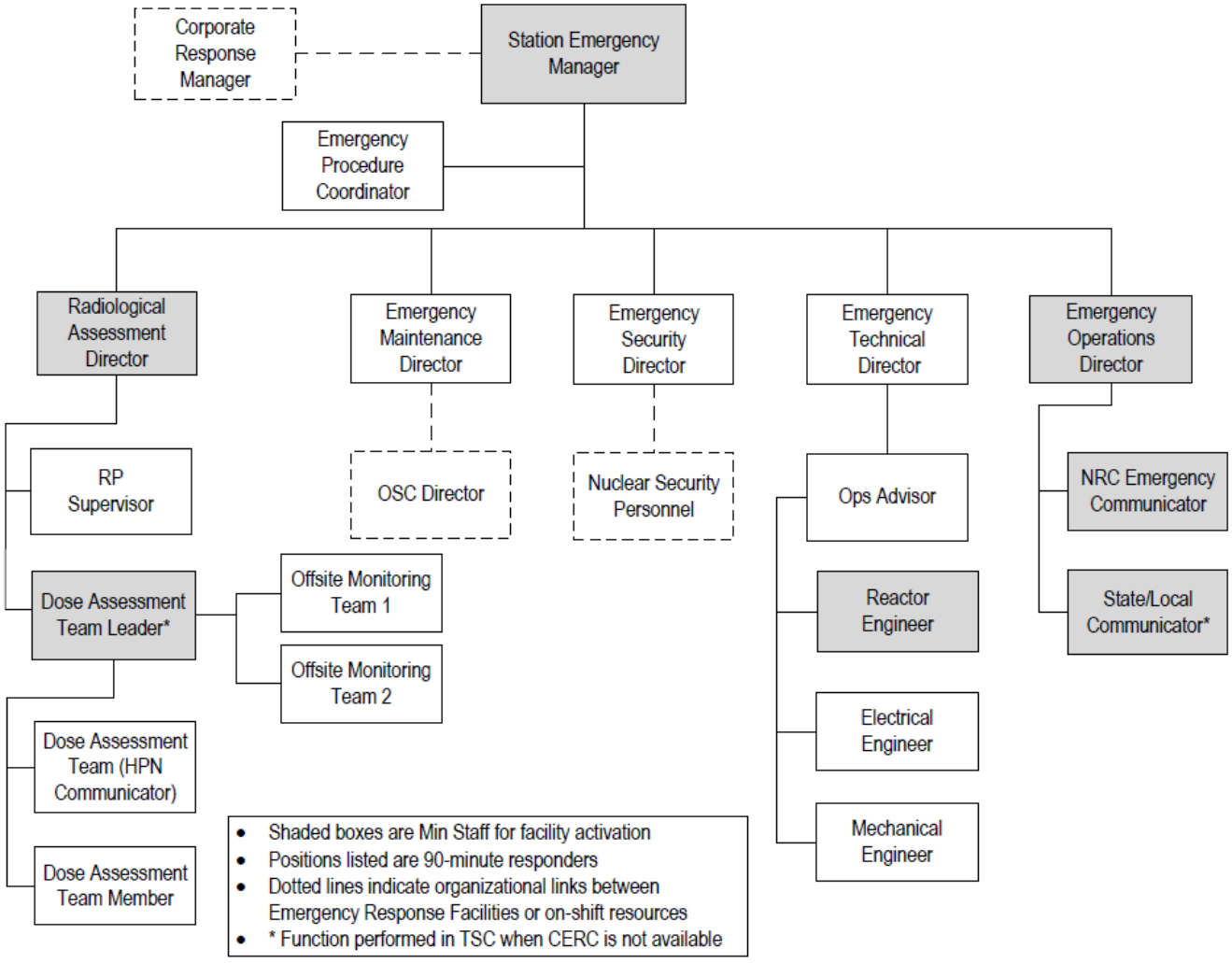


* TSC Communicator fulfills state/local notification function if EOF unavailable.

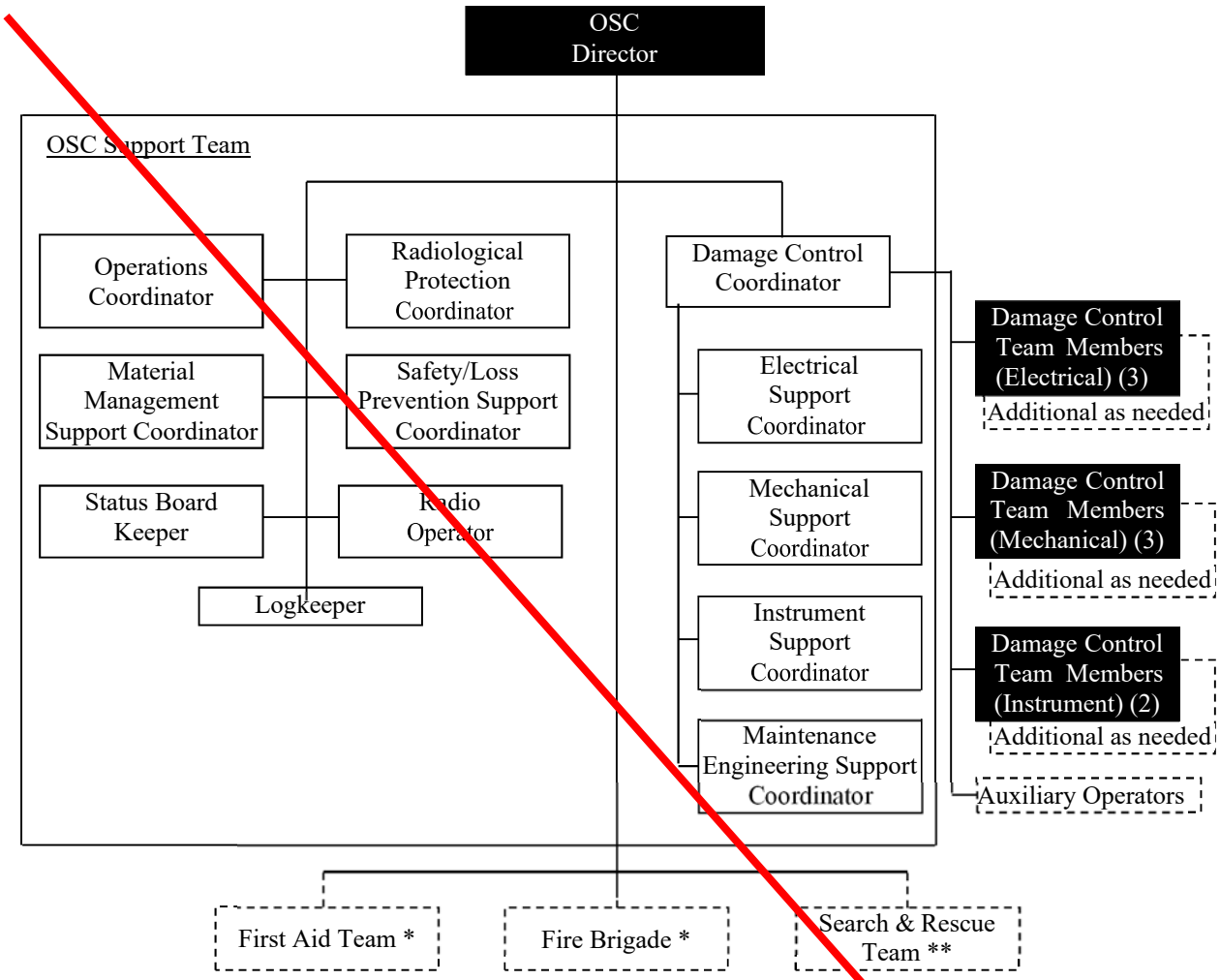
Indicates positions necessary for facility activation.

Indicates fully augmented organization positions.

Indicates position established if needed.


Corporate Response Manager
Station Emergency Manager
Emergency Procedure Coordinator
Radiological Assessment Director
Emergency Maintenance Director
Emergency Security Director
Emergency Technical Director
Emergency Operations Director
RP Supervisor
OSC Director
Nuclear Security Personnel
Ops Advisor
NRC Emergency Communicator
Dose Assessment Team Leader*
Offsite Monitoring Team 1
Offsite Monitoring Team 2
Reactor Engineer
State/Local Communicator*
Dose Assessment Team (HPN Communicator)
Electrical Engineer
Dose Assessment Team Member
Mechanical Engineer
• Shaded boxes are Min Staff for facility activation
• Positions listed are 90-minute responders
• Dotted lines indicate organizational links between Emergency Response Facilities or on-shift resources
• * Function performed in TSC when CERC is not available

OPERATIONAL SUPPORT CENTER ORGANIZATION
FIGURE 5.4~~5.b~~

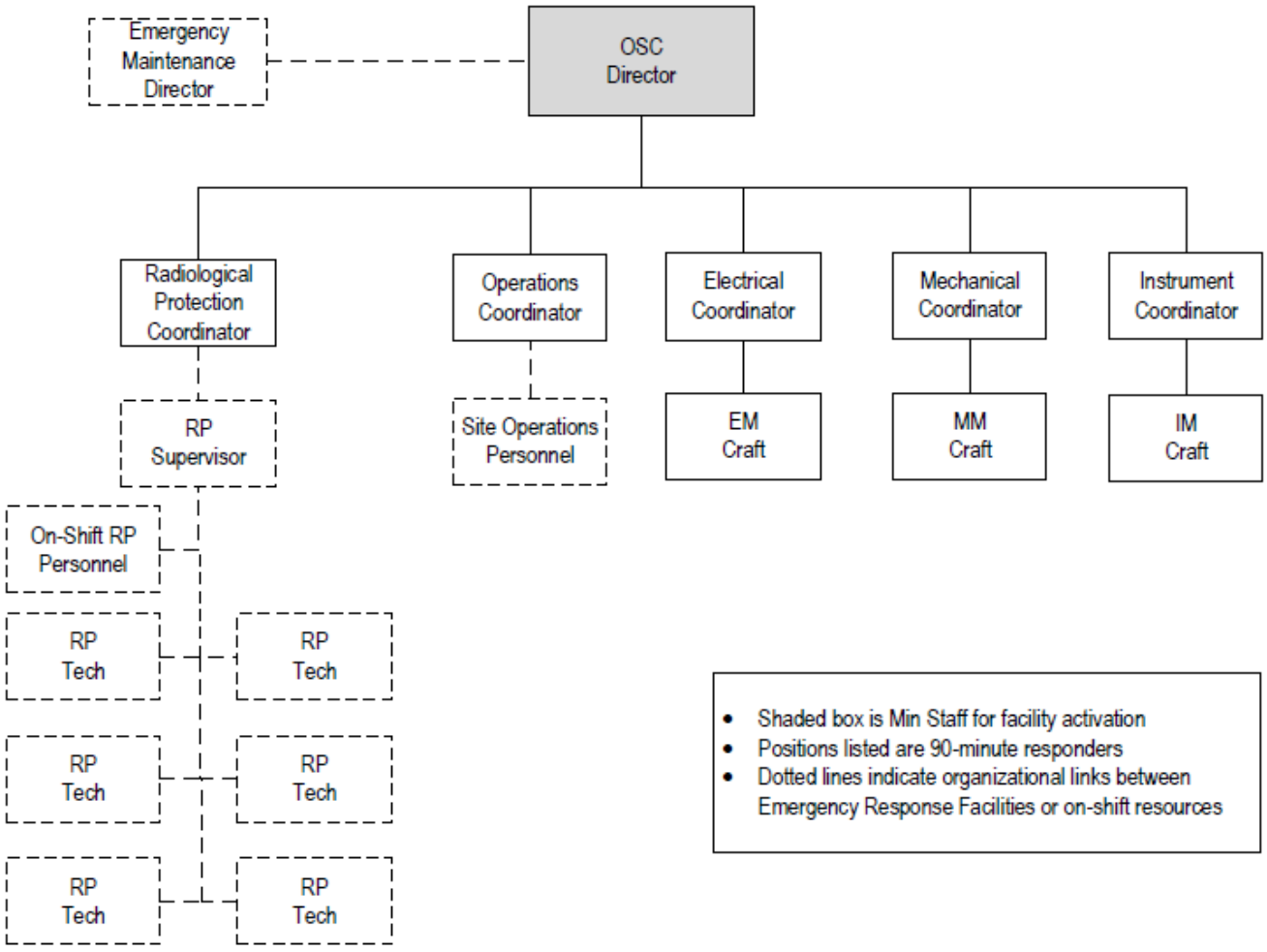


* First Aid Team and Fire Brigade functions are addressed by on-shift personnel.
Additional qualified personnel who report to the OSC may be designated for these functions.
** Search & Rescue Team formed from Fire Brigade/First Aid Team/Security staff as appropriate.

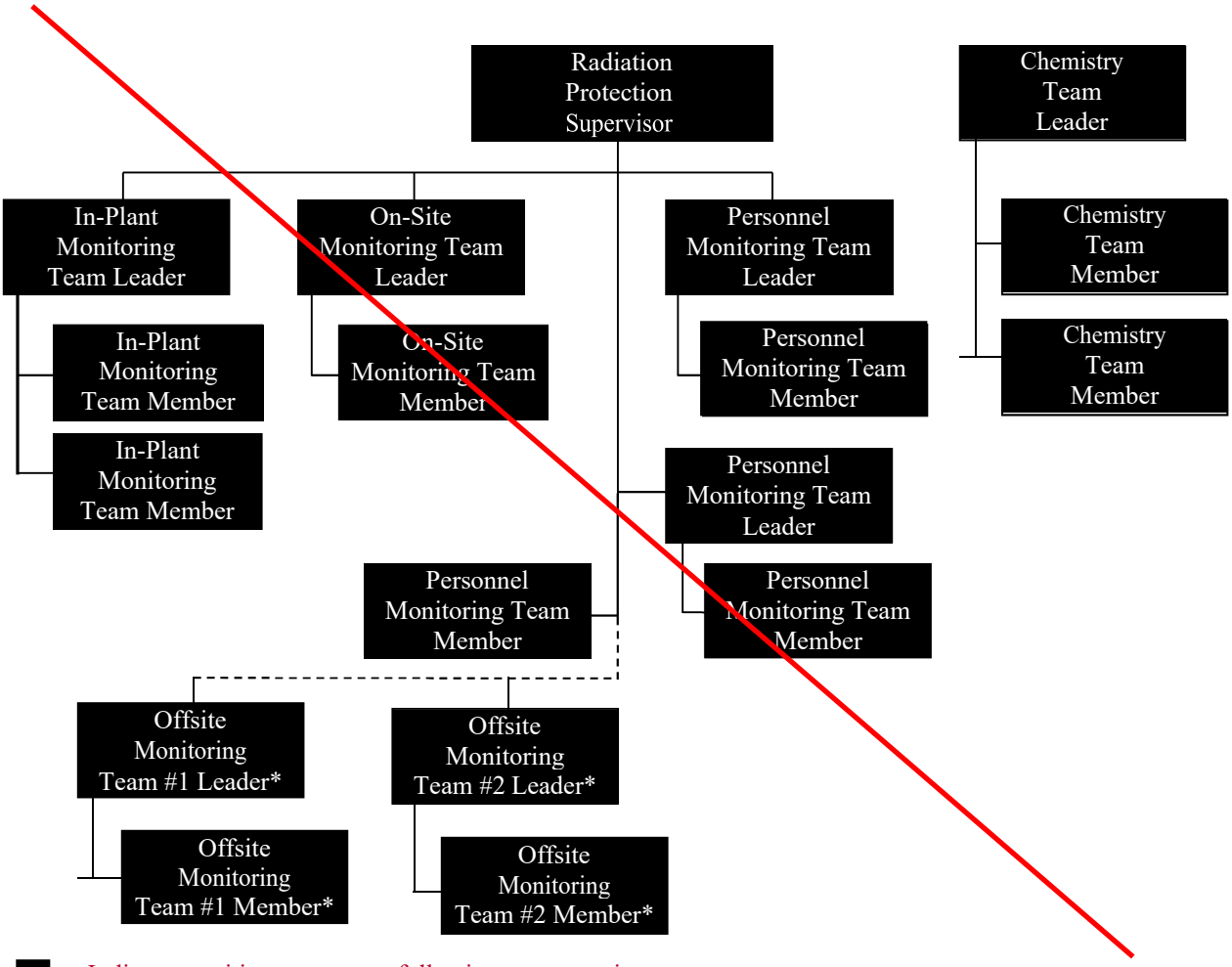
■ Indicates positions necessary for facility activation.

□ Indicates fully augmented organization positions.

Indicates team established as needed.


Emergency Maintenance Director
OSC Director
Radiological Protection Coordinator
Operations Coordinator
Electrical Coordinator
Mechanical Coordinator
Instrument Coordinator
RP Supervisor
Site Operations Personnel
EM Craft
MM Craft
IM Craft
On-Shift RP Personnel
RP Tech
RP Tech
RP Tech
RP Tech
RP Tech
RP Tech
• Shaded box is Min Staff for facility activation
• Positions listed are 90-minute responders
• Dotted lines indicate organizational links between Emergency Response Facilities or on-shift resources

~~RADIATION PROTECTION ORGANIZATION~~
~~FIGURE 5.5.c~~

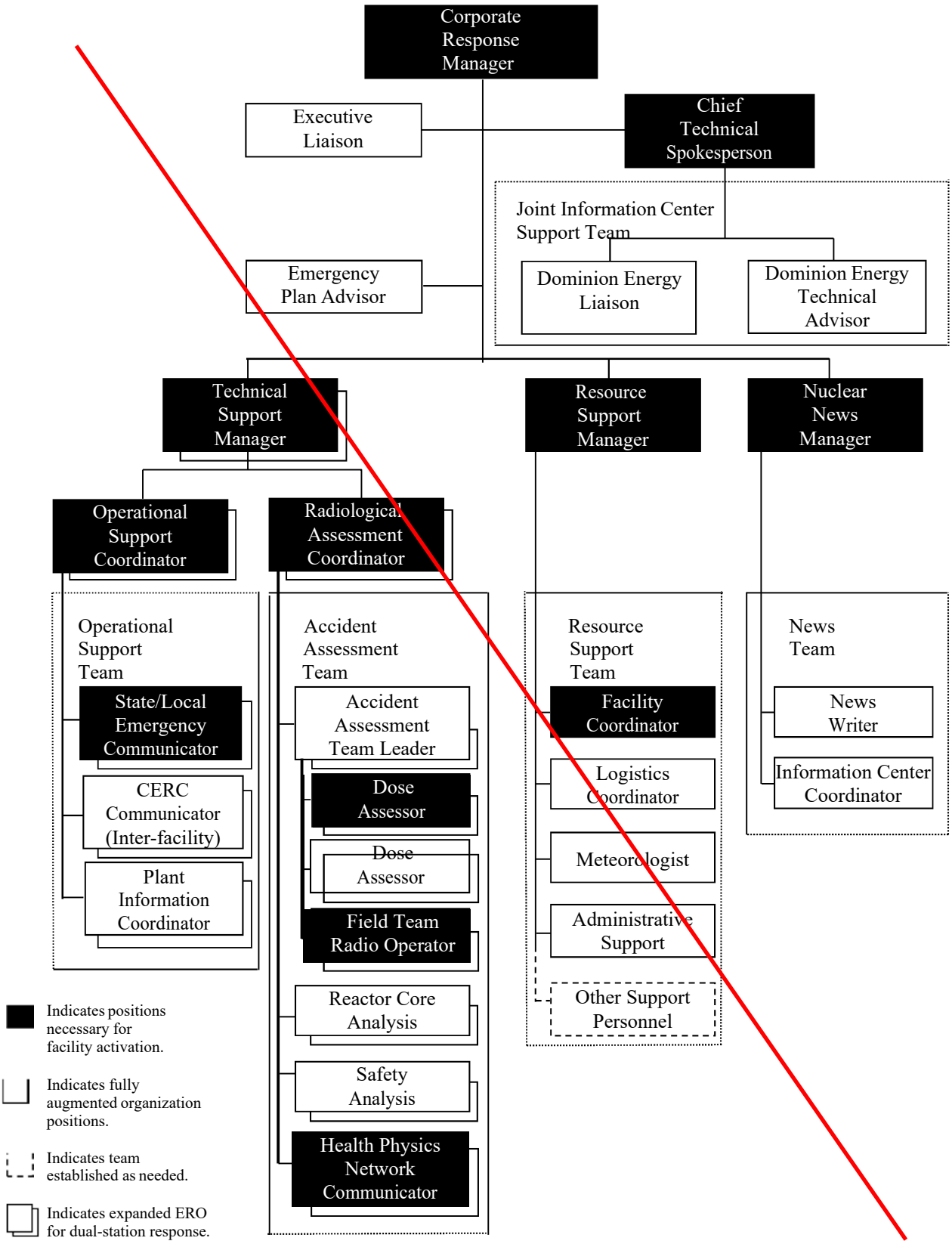


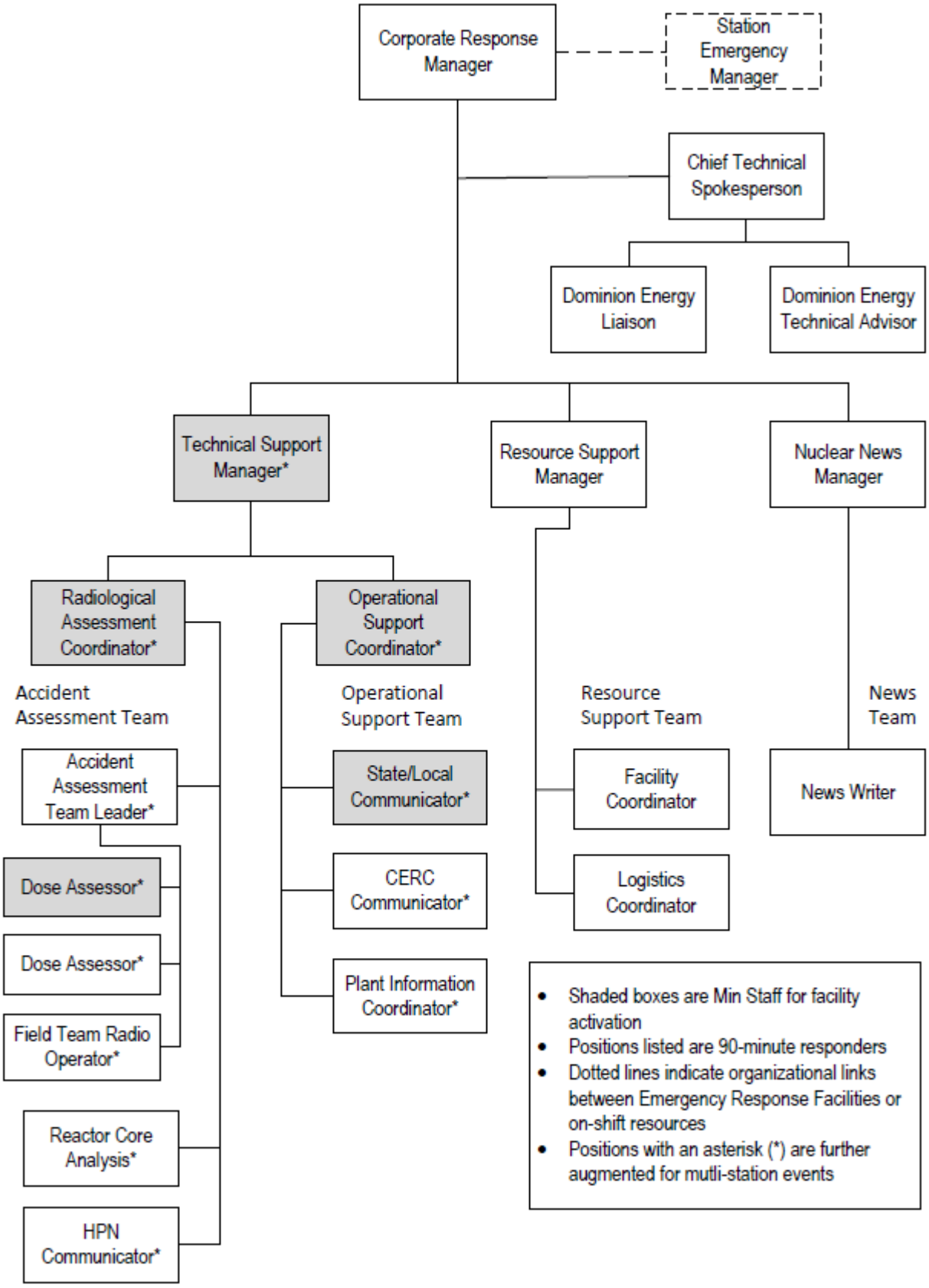
~~Indicates positions necessary following augmentation~~.

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

CORPORATE EMERGENCY RESPONSE CENTER ORGANIZATION

FIGURE 5.5-d




Corporate Response Manager
Station Emergency Manager
Chief Technical Spokesperson
Dominion Energy Liaison
Dominion Energy Technical Advisor
Technical Support Manager*
Resource Support Manager
Nuclear News Manager
Radiological Assessment Coordinator*
Operational Support Coordinator*
Accident Assessment Team
Operational Support Team
Resource Support Team
News Team
Accident Assessment Team Leader*
Dose Assessor*
Dose Assessor*
Field Team Radio Operator*
Reactor Core Analysis*
HPN Communicator*
State/Local Communicator*
CERC Communicator*
Plant Information Coordinator*
Facility Coordinator
Logistics Coordinator
News Writer
Shaded boxes are Min Staff for facility activation
Positions listed are 90-minute responders
Dotted lines indicate organizational links between Emergency Response Facilities or on-shift resources
Positions with an asterisk (*) are further augmented for mutli-station events

The EAL Technical Basis Document (referenced in Appendix 10.8) contains assessment criteria and action related to emergency classifications. 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 data retrieval and monitoring capabilities provide the information needed to make timely assessments and formulate appropriate protective actions.

6.3 Protective Actions

The Technical Support Manager or the SEM ~~(if the 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 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 initial protective action recommendations tied to plant conditions have been designed to comply with this time requirement. These recommendations are 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 Adult Thyroid CDE. A General Emergency will be declared when offsite Protective Action Guides (PAGs) of 1.0 Rem TEDE or 5.0 Rem Adult Thyroid CDE are likely 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. Special facilities are notified by

pregnant adults. 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 lifesaving actions, are consistent with EPA Emergency Worker and Life Saving Activity Protective Action Guides.

6.4.2 First Aid and Decontamination

The station has a First Aid Facility that contains 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 trained, certified, and available to respond to personnel injuries onsite.~~

In addition, the following Medical facilities and services are available:

1. Company nurse available on a part-time basis
2. Company Ambulance
3. Company designated physicians in the area
4. Local Rescue Squads
5. Virginia Commonwealth University Health

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 decontamination of the clothing. If 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 Surry County High School.

Security personnel may patrol the land area to ensure eviction of unauthorized personnel. Since the station's drinking water supply is from deep wells, there is no agricultural production in this area, and there are no milk cows in this area, contamination control methods affecting these are unnecessary. The area may

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), and the Corporate Emergency Response Center (CERC). 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~~ is 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. 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 communications 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 these individuals responsible for carrying out assigned emergency response tasks plus other technical advisors, as necessary.

7.1.2 Operational Support Center

The Operational Support Center (OSC), located in the Work Control Center, is the designated reporting location for the pool of workers who compose Damage Control Teams, the Fire Brigade, the First Aid Team, and the Search and Rescue Team. Station Operations personnel not required for Control Room operation may also assemble at the OSC unless already performing an emergency function outside the Control Room (or otherwise instructed by the Shift Manager/SEM). In the event that the primary facility is unavailable; an Alternate OSC has been designated in the Maintenance Building.

7.1.3 Technical Support Center

The TSC 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 SEM. The primary location contains controlled copies of selected manuals, procedures, drawings, and other documents as designated by Nuclear Records Department directives. Information about plant conditions is available via real time data displays from the Plant Computer System (PCS). Dedicated phone line communications have also been 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 limits. Radiation monitoring equipment for making airborne particulate and direct radiation measurements is installed in the TSC. The TSC houses the Plant Computer System Data Communications Processors. Inputs from plant sensors are processed by these units and the information is transmitted to facilities

including the Control Room and CERC for display on video terminals. Refer to Section 7.3.4, Plant Process Parameter Monitoring, for a description of the PCS.

7.1.4 Corporate Emergency Response Center

The CERC is the consolidated emergency operations facility (EOF) for Surry Power Station and North Anna Power Station. The CERC is located at the Innsbrook Technical Center in Glen Allen, Virginia. The facility provides workstations 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.

7.1.5 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 JIC is located at the Virginia State Police Administrative Headquarters in Chesterfield, Virginia. These company statements are prepared at the CERC.

~~A Local Media Center (LMC) may be staffedactivated as an adjunct to the JIC. The LMC for Surry Power Station is located on Route 650 on company property. The facility is designated as the Surry 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 LMC become uninhabitable, small groups of the media, no more than 20, can be accommodated in the CERC with the approval of the Corporate Response Manager.~~

7.1.6 Alternate Facility When Under Threat or Experiencing Hostile Action

The Surry County Administration Building 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 CERC, control room, and plant security. The 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 Surry 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 Surry 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

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.

The Plant Computer System (PCS) was installed in order to support the data acquisitions need of the emergency response facilities. The PCS will provide 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. PCS monitors are strategically located in areas including the Control Room, TSC, and CERC. 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 system as they collect and process parametric data from the various plant sensors. The PCS will process inputs from plant sensors and distribute information to the Control Room and TSC. Secure links on the station LAN and corporate Wide Area Network (WAN) will provide data to designated LAN/WAN-connected PCs, which have the appropriate software and security level for access, including the CERC.

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: Surry Units 1 and 2 - Issuance of Amendments Re: Elimination of Post-Accident Sampling System Requirements, dated December 18, 2001, Serial No. 01-761)~~

ERF COMMUNICATIONS

TABLE 7.1

Operational Support Center (OSC)

1. Public Address Intercom
2. Dedicated voice communications to Control Room and TSC
3. Radio System
4. Station PBX phone

Corporate Emergency Response Center (CERC)

1. Dedicated voice communications to TSC, ~~LMC,~~ and VEOC
2. Dominion Energy Emergency Notification System (DEENS)
3. Commercial Phones
4. Radio System
5. Station PBX Phones
6. OPX Phones
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

Near Site Location For Offsite Agency Coordination

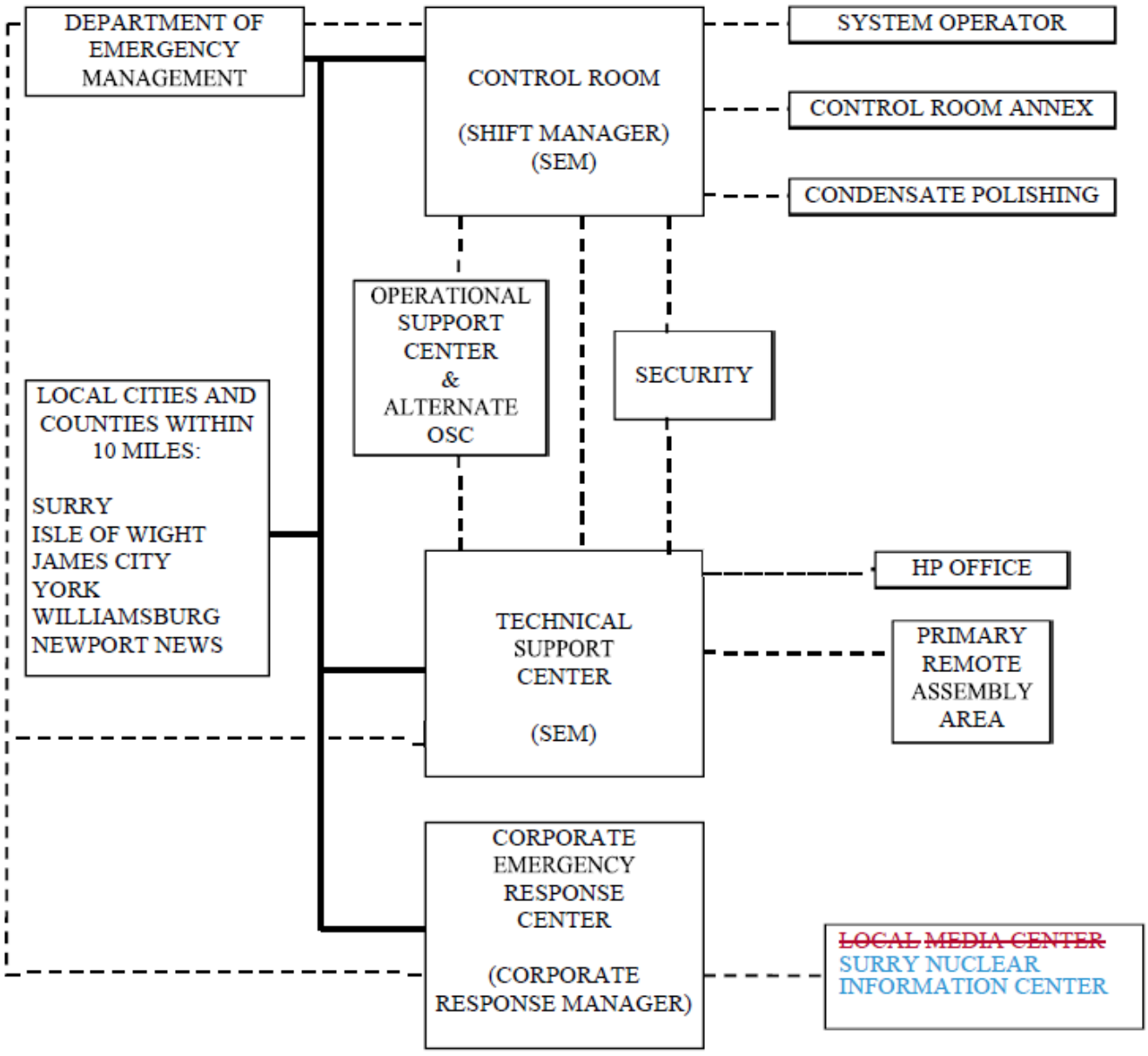
1. Commercial phones
2. Computers with internet access

~~Local Media Center (LMC)~~

~~1. Commercial Lines~~

~~2. Dedicated voice communications to CERC Newsroom~~

COMMUNICATIONS LINKS
FIGURE 7.3



LEGEND: DEDICATED VOICE COMMUNICATION ----------
DOMINION ENERGY EMERGENCY NOTIFICATION SYSTEM (DEENS) ━━━━━

NOTES:
1. PUBLIC ADDRESS INTERCOM SYSTEM AVAILABLE THROUGHOUT THE STATION.
2. BASE, PORTABLE AND MOBILE RADIOS ARE USED TO COMMUNICATE BETWEEN FACILITIES, MONITORING AND DAMAGE CONTROL TEAMS, ETC.
3. PBX, OPX AND COMMERCIAL TELEPHONE LINES ARE ALSO AVAILABLE

TABLE 8.1

EMERGENCY PREPAREDNESS TRAINING

EMERGENCY RESPONSE POSITION	SCOPE OF TRAINING (See Footnotes)
Station Emergency Manager	1,2,7,123,145
Shift Technical Advisor	1,2,123,145
Emergency Communicator	1,3,123
Emergency Procedures Coordinator	1,2,123
Emergency Operations Director	1,2,123,145
Emergency Maintenance Director	1,4,6,123
Emergency Technical Director	1,6,123,145
Emergency Security~~Administrative~~ Director	1,6,7,13
Radiological Assessment Director	1,9,10,11,123,145
Radiation Protection Supervisor	1,10,11,123
Operational Support Center Director	1,4,5,123
OSC Support Team	1,4,5,123
Technical Support Team	1,6,123,145
~~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	1,8,123
Dose Assessment Team	1,9,123
Sample Analysis and Monitoring Teams	1,11,123
~~Fire Brigade~~	~~1,13,14~~
~~First Aid Team~~	~~1,13,14~~
Damage Control Team	1,4,123
~~Search and Rescue Team~~	~~1,13,14~~
Corporate Response Manager and Technical Support Manager	1,123,156,167
Nuclear News Manager and News Team	1,123,167,178
Chief Technical Spokesperson and JIC Support Team	1,123, 167,178
~~Executive Liaison~~	~~1,13,16,17~~
Operations Support Coordinator and Operations Support Team	1,123,145,167
Radiological Assessment Coordinator	1,9,10,123,145,167
Accident Assessment Team dose assessors	1,9,123,167
HPN Communicator	1,3,123,167
State & Local Emergency Communicator (CERC)	1,3,123,167
CERC positions not listed above	1,123,167
~~Information Center Coordinators~~	~~1,13,19~~

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.~~12. Training provided emphasizes: Organizational interfaces and responsibilities appropriate for individual position assignments.

~~14.~~13. 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 Surry 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.~~14. Training provided emphasizes: Use of the Plant Computer System appropriate for individual position assignments.

~~16.~~15. Training provided emphasizes: Protective measures, notification systems and processes, offsite support group capabilities and interface, press release review, and recovery.

~~17.~~16. Training provided emphasizes: Activation and administration of the Corporate Emergency Response Center.

~~18.~~17. Training provided emphasizes: Staffing~~Activation~~ and administration of the Joint Information Center appropriate for individual position assignments.

~~Training provided emphasizes: StaffingActivation and administration of the Local Media Center appropriate for individual position assignments~~.

ATTACHMENT 2-2

Surry Power Station, Units 1 and 2:

Clean Emergency Plan Pages

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

Emergency Plan

Title: Surry Power Station Emergency Plan

Revision Number:	**Effective Date:**
XX	See DocTop

Approvals on File

- Emergency Planning Zones (EPZs)
- Plume Exposure Pathway EPZ - An area delineated by an approximate ten-mile radius circle around the Surry Power Station.
- Ingestion Exposure Pathway EPZ - An area delineated by an approximate fifty-mile radius circle around the Surry 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.
- 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.
- Facility Activation – An Emergency Response facility is activated when the minimum staff per Figures 5.3, 5.4 and 5.5 are available and the facility is ready to assume assigned functions. Although the facility may be ready, the on-shift staff may prioritize completion of critical tasks prior to turnover.
- 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 HOSTILE ACTION that results 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 Communities - This term shall be used to denote the counties of Surry, Isle of Wight, York and James City and the cities of Williamsburg and Newport News located in the approximate ten (10) mile Emergency Planning Zone.

- Nearsite - Within the Site Boundary, 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 Site Boundary.
- Onsite - The Protected Area (area surrounded by security fence) and Switchyard.
- 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 - 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 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 exposures.
- 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.
- 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.
- Site Boundary - The company-owned area within 1650 feet of Surry Unit 1 containment.
- Semi-annual - Occurring once during each of the first and last six months of the calendar year.
- Station Emergency Manager (SEM) - Designated onsite individual having the responsibility and authority for implementing the Emergency Plan.

1.1 Acronyms and Abbreviations

A/E	-	Architect/Engineer
AC	-	Alternating Current
APs	-	Abnormal Procedures
Appx.	-	Appendix
ATWT	-	Anticipated Transient Without Trip
BTL	-	Bottle
BX	-	Box
cc	-	Cubic Centimeter
CDE	-	Committed Dose Equivalent
Ce	-	Cerium
CEDE	-	Committed Effective Dose Equivalent
CERC	-	Corporate Emergency Response Center
CFR	-	Code of Federal Regulations
CH	-	Charging System
cm	-	Centimeter
COVEOP	-	Commonwealth of Virginia Emergency Operations Plan
cpm	-	counts per minute
Cs	-	Cesium
CSD	-	Cold Shutdown
CVCS	-	Chemical and Volume Control System
CW	-	Circulation (Circ.) Water
DBE	-	Design Basis Earthquake
DC	-	Direct Current
DDE	-	Deep Dose Equivalent
DECON	-	Decontaminate
DEPT.	-	Department
DLR	-	Dosimeter of Legal Record (personnel TLD)
DOE	-	Department of Energy
dpm	-	disintegrations per minute
ESD	-	Emergency Security Director
EALs	-	Emergency Action Levels
EAS	-	Emergency Alert System
ECC	-	Emergency Control Center
ECCS	-	Emergency Core Cooling System
EDE	-	Effective Dose Equivalent
e.g.	-	For example [From Latin exempli gratia]
EMD	-	Emergency Maintenance Director

LAN	-	Local Area Network
LCO	-	License Condition of Operation
LOCA	-	Loss of Coolant Accident
LW	-	Liquid Waste
MCL	-	Management Counterpart Link
MIDAS	-	Meteorological Information and Dose Assessment System
ml	-	milliliter
mph	-	miles per hour
mR/hr	-	Millirem perhour
MSL	-	Mean Sea Level
MWe	-	Megawatt electric
MWt	-	Megawatt thermal
N/A	-	Not applicable
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
OPS	-	Operations
OPX	-	Off-Premises exchange (Communications System)
OSC	-	Operational Support Center
PAGs	-	Protective Action Guides
PAR	-	Protective Action Recommendation
PBX	-	Private Branch exchange (Communications System)
PCS	-	Plant Computer System
Pk.	-	Package
PMCL	-	Protective Measures Counterpart Link
PORV	-	Power Operated Relief Valve
Pr	-	Pair
PSIA	-	Pounds per square inch absolute
PSIG	-	Pounds per square inch gauge
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

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 augmentation of the emergency 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 Surry ISFSI under provisions of Title 10 of the Code of Federal Regulations, Part 72, Subpart B, Section 32, Subsection (c).

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 emergency response facilities. Mobilization of the Offsite Monitoring Teams also occurs at this point.

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.

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.

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 information are available to the Shift Manager in the Control Room to 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 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 by the Station Emergency Manager in the onsite Technical Support Center (TSC).

The Corporate Emergency Response Center (CERC) is activated simultaneously with, but independent of, the TSC. The CERC is staffed by corporate personnel, including the Corporate Response Manager and Technical Support Manager, who direct the activities of this facility. Responsibilities of the Technical Support Manager, once the CERC has been activated, include communicating emergency status to the State and local governments, directing the efforts of the offsite monitoring teams, making radiological assessments, recommending offsite protective measures to the State, and arranging for the dispatch of any special assistance or services requested by the station. The Corporate Response Manager has the ultimate authority to commit company resources and set policy as part of managing the long term recovery effort.

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..

The basic shift (back-shift) complement of personnel performing EP functions is comprised of Operations and Health Physics. In addition, technical/engineering support is available on all shifts from the Shift Technical Advisor (STA). Dominion Energy’s Nuclear Facility Quality Assurance Program Description (Topical Report DOM-QA-1) provides the details of the normal station organization.

5.2 Emergency Response Organization

The first line of control in an emergency at Surry Power Station lies with the onshift personnel. The shift complement is staffed with personnel qualified to take the initial actions necessary to respond to an emergency. The on-shift emergency organization prior to augmentation is shown in Table 5.1. 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, onshift personnel make notifications to off-site authorities, and initiate a callout of supplementary emergency response personnel as required. The EPIPs are used procedurally to 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, Station Security will commence callout of supplementary emergency response personnel. Table 5.1 also represents the minimum number of personnel that are required to activate the TSC, OSC and CERC and the estimated response times of these personnel. The composition of the emergency response personnel assigned EP functions on shift and those who make up the augmentation crews are consistent with the staffing level goals promulgated by NRC Revised Table B-1. 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.

5.2.1 Station Emergency Position and Team Descriptions

The Station Emergency Organization consists of at least the positions discussed below. Reporting relationships are as depicted in Figures 5.3, 5.4 and 5.5. 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, and designated individuals will receive training for their emergency response duties.

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 operates from the Technical Support Center. The SEM ultimately reports to the Corporate Response Manager, once augmented. SEM responsibilities shall include, but not be limited to:

1) Classifying the emergency,
2) Authorizing notifications to the NRC, State and local agencies of the emergency status,
3) Recommending protective actions,
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 CERC Technical Support Manager will be responsible for notifying the State and local agencies of the emergency status and for recommending offsite protective measures to the State.

5.2.1.2 Emergency Communicators

The Emergency Communicators report to the SEM in the Control Room prior to activation of the TSC and CERC. The primary duties of the Emergency Communicators are to initially notify and periodically update the Emergency Operations Centers of the communities within the 10- mile Emergency Planning Zone, the Virginia Emergency Operations Center (VEOC), and the NRC. Responsibility for notification of State and local governments will transfer to the TSC or CERC upon activation of these facilities.

5.2.1.3 Emergency Procedures Coordinator

The Emergency Procedures Coordinator (EPC) reports to the SEM in the TSC as part of the augmentation of the onshift 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 EPIPs and other appropriate procedures,
4) Assisting the SEM in obtaining all procedures generated as a results 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 TSC as part of the augmentation of the onshift 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 onshift 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 ETD 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 (STA) will remain in the Control Room to advise the Shift Supervisor or Assistant Shift Supervisor on engineering and accident assessment matters. 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 Security Director

The Emergency Security Director (ESD) reports to the SEM in the TSC as part of the augmentation of the on-shift emergency organization. The ESD acts as the liaison between site Security and the TSC and directs security activities.

5.2.1.9 Radiological Assessment Director

The Radiological Assessment Director (RAD) reports to the SEM in the Technical Support Center after relieving the interim director who was the Senior Health Physics representative onsite at the initiation of the emergency. He directs the activities of the Radiation Protection Supervisor in maintaining the Radiation Protection Program onsite 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 CERC.

Other duties of the RAD are to provide status of offsite releases to the SEM, to evaluate radiological conditions and recommend onsite and offsite protective actions to the SEM, to provide recommendations and Health Physics coverage for onsite corrective actions, to direct decontamination efforts, and to provide HP coverage for evacuation of onsite personnel.

5.2.1.10 Radiation Protection Supervisor

The position of Radiation Protection Supervisor (RPS) will be filled upon augmentation of the on-shift emergency organization. The RPS normally operates from the Station HP Office and reports to the RAD. The RPS directs the activities of In Plant Monitoring Personnel Monitoring and Decontamination, Onsite (Out of Plant) Monitoring and Evacuation Monitoring functions. The RPS will also provide radiological support, as needed, to the Damage Control Team. Additional duties include evaluating onsite radiological conditions, ensuring that appropriate monitoring and sampling are performed, checking the appropriate personnel monitoring is performed and personnel exposures are evaluated, and maintaining dose records. The RPS shall also recommend onsite protective measures to the RAD 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)

The position of OSC Director will be staffed upon augmentation of the on-shift emergency organization. The OSC Director operates from the Operational Support Center and reports to the SEM, normally through the EMD. The duties and responsibilities of the OSC Director include planning, scheduling and material requisitioning in support of damage control tasks. The OSC Director is also responsible for accountability, dispatch and control of response teams.

5.2.1.12 OSC Support Team

The OSC Support Team operates 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, coordinates the efforts of the Damage Control Teams and provides logistical and communications support.

5.2.1.13 Technical Support Team

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

The Team shall assist the ETD in analyzing electrical, mechanical, instrumentation and control, 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 Security Team

The Security Team reports to the ESD. This Team will maintain personnel accountability, control search activities for unaccounted for personnel, 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 SEM.

5.2.1.15 Dose Assessment Team

This Team will operate 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 RAD 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 results of offsite releases and dose projections to date to the RAC in the CERC. The Dose Assessment Team Leader will also inform the RAC of the locations of 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 CERC upon full staffing of the facility. The Dose Assessment Team will then provide support to the RAD regarding onsite response and interface with the CERC.

5.2.1.16 Offsite Monitoring Teams

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

5.2.1.17 Evacuation Monitoring Team

This Team is under the direction of the RPS and is staffed 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.

5.2.1.18 In-Plant Monitoring Team

The In-Plant Monitoring Team reports to the RPS in the Station HP Office. This Team will perform monitoring and sample collection inside the protected area. The team will also provide monitoring services to the Damage Control Team if required.

5.2.1.19 Personnel Monitoring and Decontamination Team

This Team reports to the RPS in the Station HP Office. The Team will monitor and decontaminate personnel if required.

5.2.1.20 Onsite (Out of Plant) Monitoring Team

An RP Technician reports to the RPS and operates out of the Station HP Office. The RP Technician performs monitoring and sample collection within the protected area.

5.2.1.21 Damage Control Team

The Damage Control Team reports to the OSC Director. When support is required, designated personnel may report to the EMD or the responsible emergency director.

The Damage Control Team is a pool of mechanics, electricians, instrument technicians and operators from which Damage Control Task Teams are formed to conduct emergency assessment and repairs. Damage Control supervisors may be designated to assist in the selection of personnel for Damage Control Task Teams and monitoring of emergency maintenance activities.

5.2.2 Corporate Emergency Position and Team Descriptions

The CERC Emergency Organization consists of at least the positions discussed below. Reporting relationships are as depicted in Figure 5.3. 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 staffed 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 Support Manager, the Nuclear News Manager, the Chief Technical Spokesperson.

5.2.2.2 Technical Support Manager

The Technical Support Manager (TSM) reports to the CRM and is responsible for the command functions related to prompt and accurate dose assessments; notifying state and local governments of the emergency status and any changes in a timely manner and assessing and providing protective action recommendations to offsite authorities. The TSM is also responsible for 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 Support Manager

The Resource Support Manager (RSM) reports to the CRM and is responsible for logistical and administrative support for the CERC. The RSM supervises the Resource Support 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 Corporate Emergency Position and Team Descriptions

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

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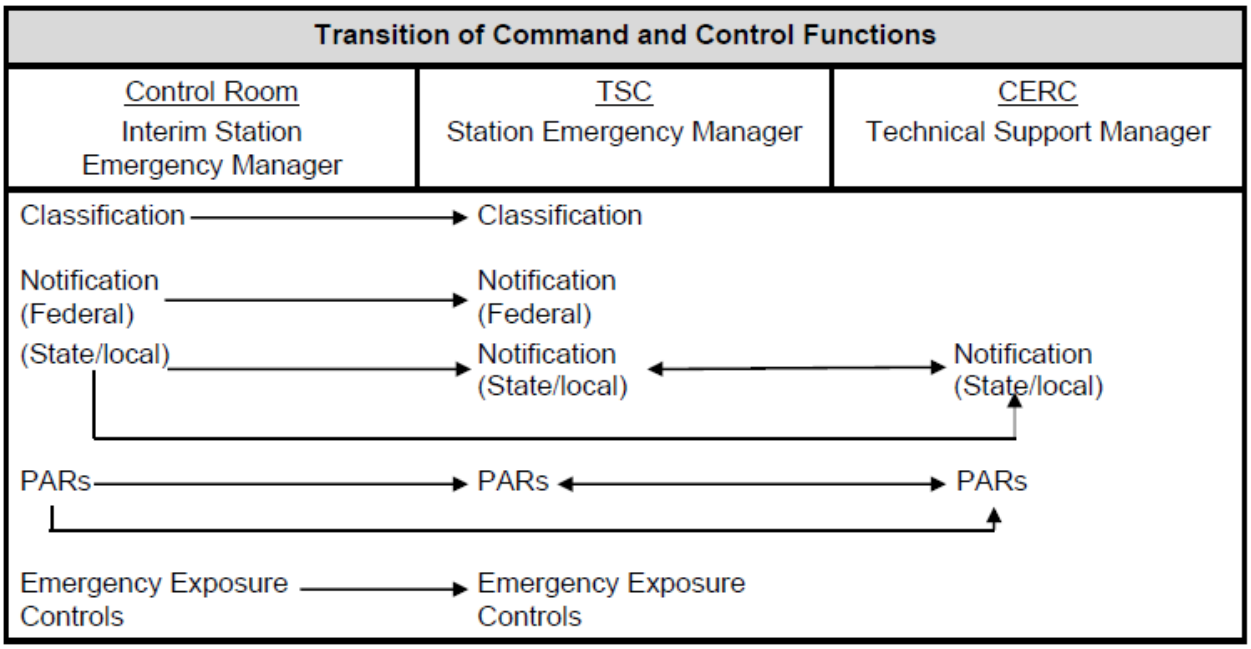
5.2.2.5 Chief Technical Spokesperson

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.

If conditions at the Station require an Alert or higher classification, the CERC, TSC and OSC shall be activated. The facility activation goal for the TSC, OSC and CERC is approximately 90 minutes from the declaration of an Alert or higher emergency classification.. The SEM would normally forward information or request additional support through the Corporate Response Manager located in the CERC (See Figure 5.2). Additional resources shall be obtained through personnel assigned to the CERC. Those additional personnel directed to report to the site during the emergency shall report to the SEM for assignment. Figures 5.3, 5.4 and 5.5 display minimum staff required for activation of each facility. The transition of command and control functions from the Control Room to the TSC and CERC are outlined below.



5.3.1 Notification and Response

The emergency response organization (ERO) is notified to augment in the event of an Alert, Site Area Emergency or General Emergency. The following functions 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 CERC.

5.3.1.2 Logistics Support for Emergency Personnel

The CERC Resource Support 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 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 North Anna Power Station, A/E, and NSSS vendor. Consulting services would be obtained as necessary.

5.3.1.4 Interface with Governmental Authorities

CERC management is responsible for contacting governmental agencies when coordinating mobilization of resources or requesting additional support. The CERC, once activated, serves as principal point of interaction between the 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 or Public Affairs representative in the Joint Information Center. The Chief Technical Spokesperson is responsible for meeting with the news media. Releases will be coordinated with the appropriate governmental authorities. Briefings can be conducted at the Joint Information Center at the Virginia State Police Administrative Headquarters in Chesterfield, Virginia when staffed.

5.3.2 Vendor and Supplemental Personnel Support

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, the NSSS vendor will 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:

Virginia Department of General Services, Division of Consolidated Laboratory Services, Richmond, VA (75 minutes)

Virginia Department of Health, Office of Radiological Health Mobile Laboratory (75 minutes)

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 firefighting, rescue squad, medical and hospital services. Responding rescue squads are trained in the handling, treatment, and transportation of injured personnel.

Virginia Commonwealth University Health has developed an emergency plan designed to provide medical care in the case of a radiation emergency. The VCU Health 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 VCU Health will be made to alert them to activate their emergency plan. A copy of the VCU Health Radiation Emergency Plan is maintained on file by the Nuclear Emergency Preparedness department. Letters of Agreement in support of the Surry Emergency Plan will be renegotiated once every 2 years. Copies of current agreements are maintained on file by the Nuclear Emergency Preparedness department. Negotiation responsibility lies with the Manager Nuclear Fleet Emergency Preparedness. Letters of Agreement are limited to Federal, State,

In the event of an emergency of any classification, the SEM will notify all local jurisdictions (Surry County, York County, James City County, Isle of Wight County, Williamsburg City, and Newport News City) and VEOC by using DEENS. If DEENS is out of service, commercial telephone lines will be used to make the notifications. The above localities have a system to call back to the power station and check the message.

5.4.6 Counties and Cities Within the Fifty Mile Ingestion Pathway Zone

The local communities directly involved in the emergency plan are Surry, Isle of Wight, James City, Williamsburg, York and Newport News. They have emergency response functions as previously stated in this section.

The communities within the fifty mile EPZ are listed in Figure 5.6a and depicted in Figure 5.6b. In the event of an emergency, notification of and interaction with these entities is a function 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 the 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.

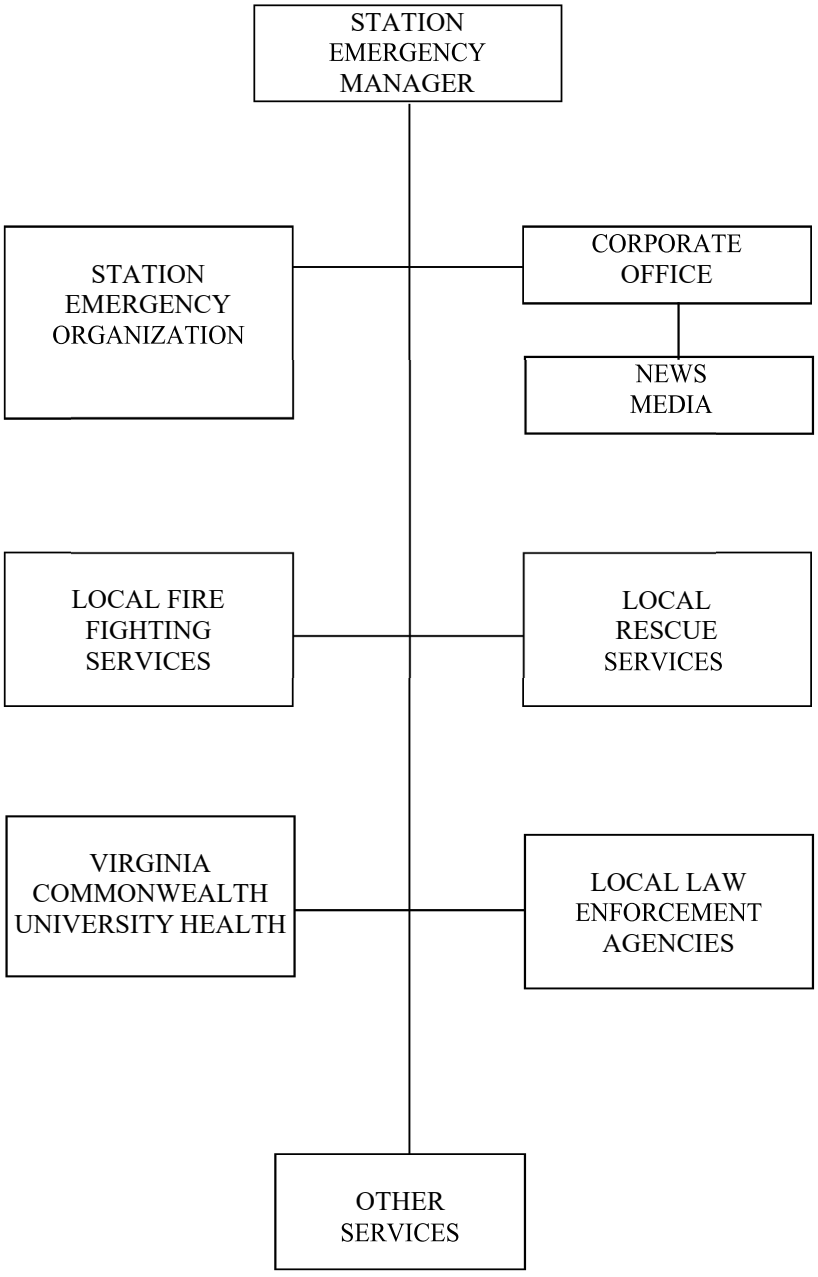
The SEM or Corporate Response Manager may request FRMAC assistance directly or through the NRC (Federal Coordinating Agency). The Company will provide designated facilities for the NRC (Federal Coordinating Agency) in the CERC. There are three commercial air terminals in close proximity (i.e., within 75 minutes driving time) to Surry Power Station: Newport News/Williamsburg International Airport in Newport News, Virginia; Richmond International Airport (RIC) in Richmond, Virginia; and Norfolk International Airport in Norfolk, Virginia. It is estimated that a FRMAC Advance Party could be expected at the site within 6 to 14 hours following the order to deploy.

Further information concerning objectives and organization is provided in the FRMAC Operations Plan (See Appendix 10.3).

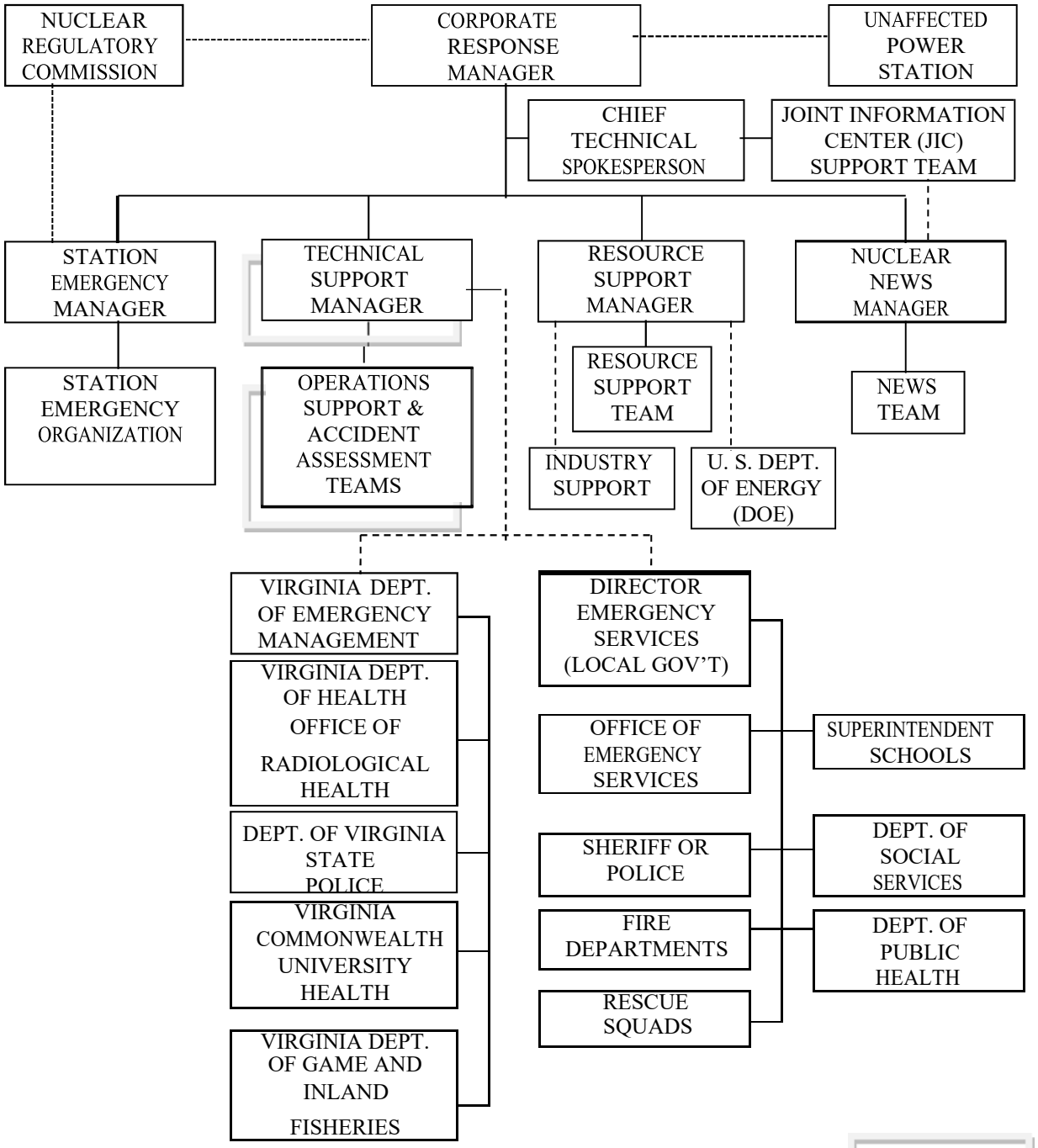
Minimum Shift Manning Requirements
Table 5.1

Major Functional Area	Major Tasks	Position Title/Expertise	Proposed On-Shift	Capability for Additions
				90 min
Emergency Direction and Control	Oversight	Unit Shift Supervisor (SRO)	2	------
		Technical Support Manager (CERC)	------	1
	Classification	Shift Manager (SRO)	1	------
		Station Emergency Manager (TSC)	------	1
		Emergency Operations Director (TSC)	------	1
Notification/ Communication	Licensee, Local/State Federal personnel and maintain communication	Emergency Communicator (SRO/RO/NO)	2	------
		State/local Communicator (CERC)	------	1
		NRC Emergency Communicator (TSC)	------	1
		State/local Communicator (TSC)	------	1
Radiological Accident Assessment	Offsite Dose Assessment	RP Technician	1	------
		Rad Assessment Coordinator (CERC)	------	1
		Dose Assessment Team Member (CERC)	------	1
		Operational Support Coordinator (CERC)	------	1
		Radiological Assessment Director (TSC)	------	1
		Dose Assessment Team Leader (TSC)	------	1
	Offsite Surveys	Offsite Monitoring Team Leader	------	2
		Offsite Monitoring Team Member	------	2
	In-plant/Onsite (out-of-plant)	RP Technician	1	2
	Protective Actions	RP Technician	1	4
Plant System Engineering	Technical Support	Shift Technical Advisor (SRO/STA)	1	------
		Reactor Engineer (TSC)	------	1
		Electrical Engineer (TSC)	------	1
		Mechanical Engineer (TSC)	------	1
Repair and Corrective	Repair and Corrective Actions	Mechanical Maintenance (OSC)	------	1
		Electrical Maintenance (OSC)	------	1
		I&C Maintenance (OSC)	------	1
		OSC Director (OSC)	------	1
		Mech. Maint. Coordinator (OSC)	------	1
		Elec. Maint. Coordinator (OSC)	------	1
		I&C Maint. Coordinator (OSC)	------	1
		RP Coordinator (OSC)	------	1
Total			**9**	**32**

STATION TO SUPPORT GROUP INTERFACE
PRIOR TO AUGMENTATION OF THE ONSITE EMERGENCY ORGANIZATION
FIGURE 5.1



STATION TO SUPPORT GROUP INTERFACE FOLLOWING CERC ACTIVATION FIGURE 5.2



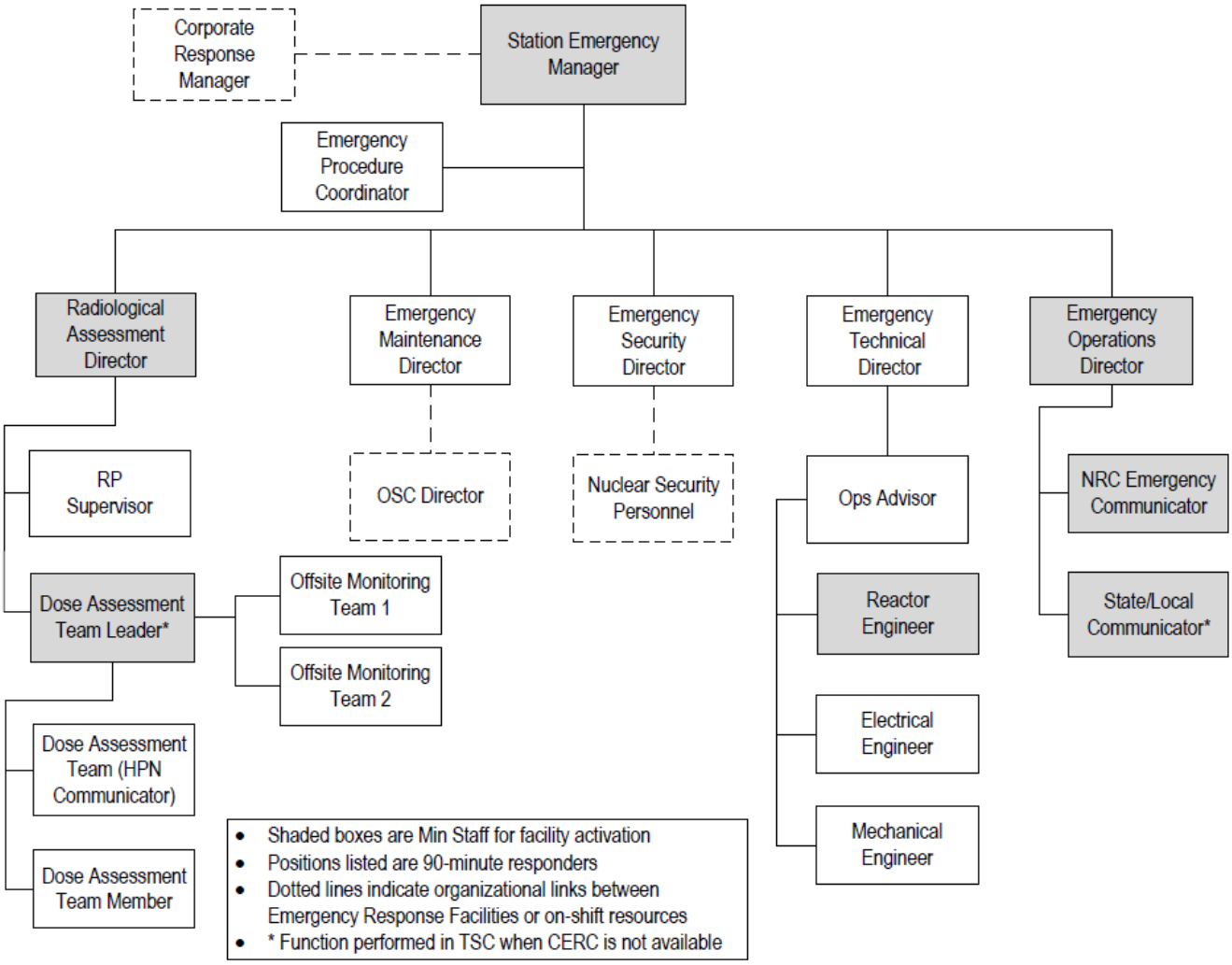
SYMBOLS:

MANAGEMENT CONTROL ————————

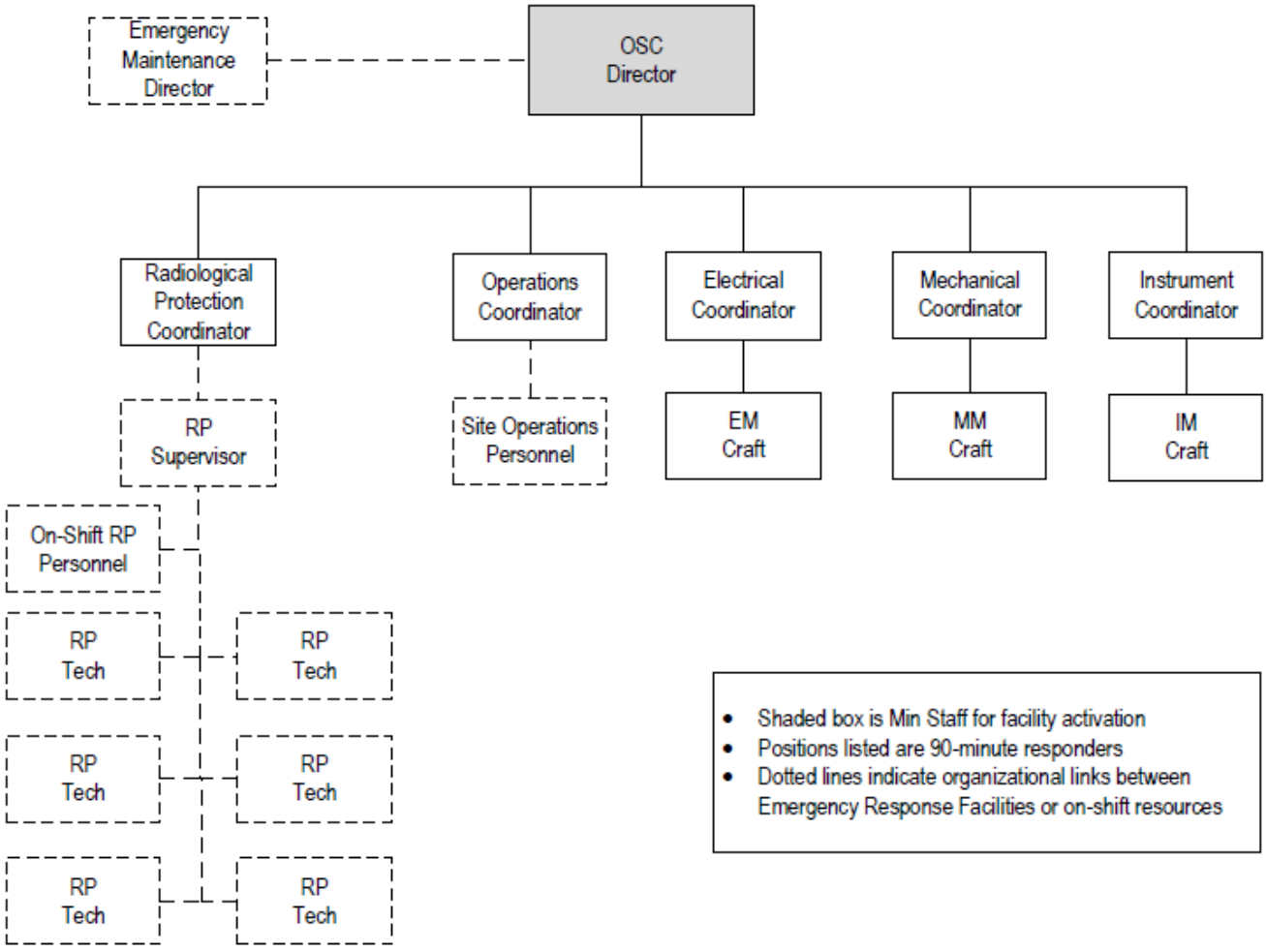
COORDINATED ASSISTANCE ----------

SHADED BOX IDENTIFIES SUPPLEMENTAL STAFFING WHEN CERC SUPPORTING SURRY AND NORTH ANNA

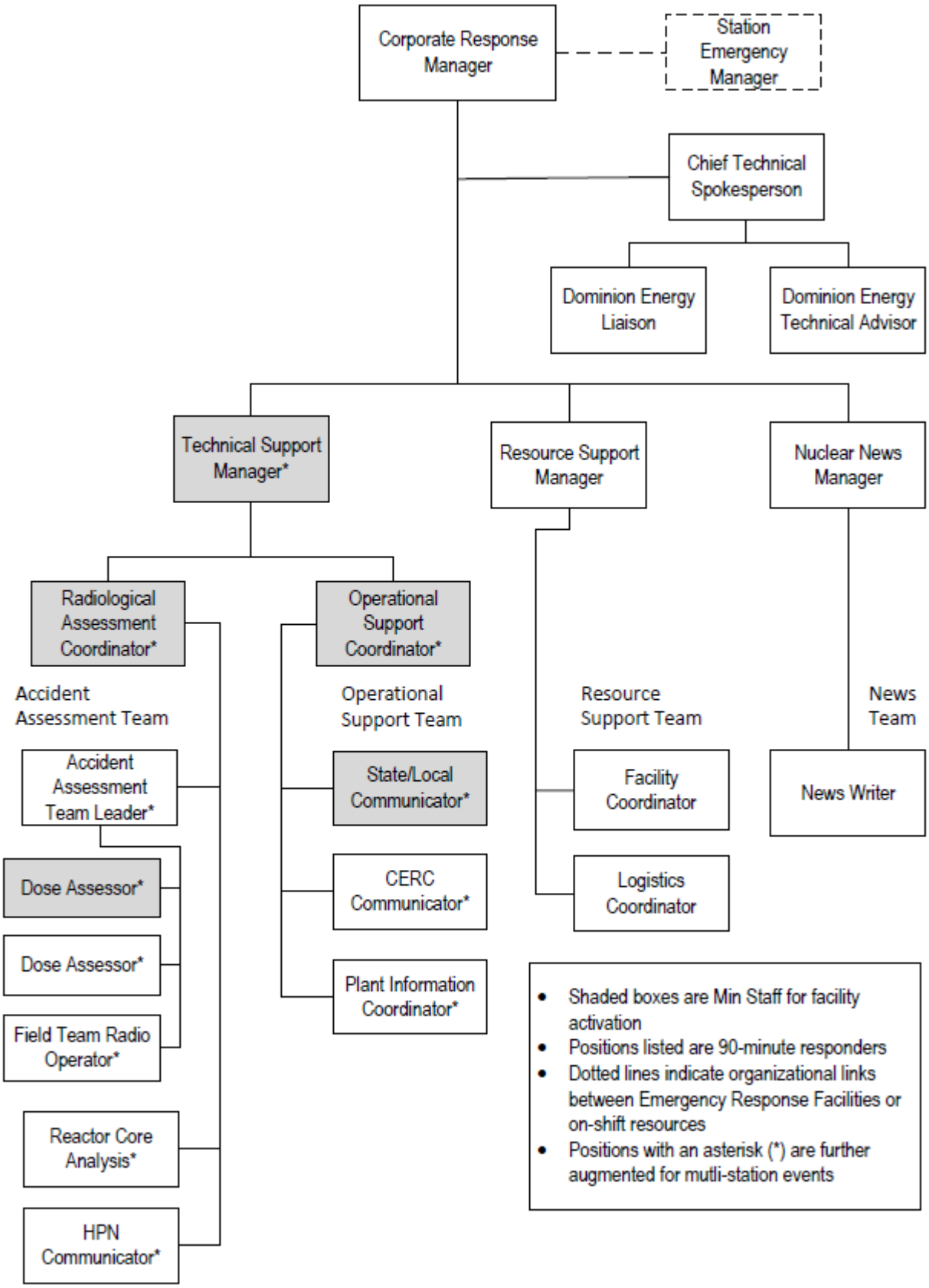
TECHNICAL SUPPORT CENTER ORGANIZATION
FIGURE 5.3



OPERATIONAL SUPPORT CENTER ORGANIZATION
FIGURE 5.4



CORPORATE EMERGENCY RESPONSE CENTER ORGANIZATION
FIGURE 5.5



The EAL Technical Basis Document (referenced in Appendix 10.8) contains assessment criteria and action related to emergency classifications. 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 data retrieval and monitoring capabilities provide the information needed to make timely assessments and formulate appropriate protective actions.

6.3 Protective Actions

The Technical Support Manager or the SEM 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 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 initial protective action recommendations tied to plant conditions have been designed to comply with this time requirement. These recommendations are 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 Adult Thyroid CDE. A General Emergency will be declared when offsite Protective Action Guides (PAGs) of 1.0 Rem TEDE or 5.0 Rem Adult Thyroid CDE are likely 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. Special facilities are notified by

pregnant adults. 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 lifesaving actions, are consistent with EPA Emergency Worker and Life Saving Activity Protective Action Guides.

6.4.2 First Aid and Decontamination

The station has a First Aid Facility that contains the normal complement of first aid supplies and equipment necessary to treat those injuries not involving hospitalization or professional medical services.

In addition, the following Medical facilities and services are available:

1. Company nurse available on a part-time basis
2. Company Ambulance
3. Company designated physicians in the area
4. Local Rescue Squads
5. Virginia Commonwealth University Health

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 decontamination of the clothing. If 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 Surry County High School.

Security personnel may patrol the land area to ensure eviction of unauthorized personnel. Since the station's drinking water supply is from deep wells, there is no agricultural production in this area, and there are no milk cows in this area, contamination control methods affecting these are unnecessary. The area may be returned to a status not requiring evacuation when projected doses to the majority of non-essential workers is expected to be less than 1 Rem TEDE, less than 5 Rem Thyroid CDE, and less than 1000 dpm/100 cm^2 Beta-Gamma contamination.

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), and the Corporate Emergency Response Center (CERC). 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) is 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. 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 communications 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 these individuals responsible for carrying out assigned emergency response tasks plus other technical advisors, as necessary.

7.1.2 Operational Support Center

The Operational Support Center (OSC), located in the Work Control Center, is the designated reporting location for the pool of workers who compose Damage Control Teams, the Fire Brigade, the First Aid Team, and the Search and Rescue Team. Station Operations personnel not required for Control Room operation may also assemble at the OSC unless already performing an emergency function outside the Control Room (or otherwise instructed by the Shift Manager/SEM). In the event that the primary facility is unavailable; an Alternate OSC has been designated in the Maintenance Building.

7.1.3 Technical Support Center

The TSC 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 SEM. The primary location contains controlled copies of selected manuals, procedures, drawings, and other documents as designated by Nuclear Records Department directives. Information about plant conditions is available via real time data displays from the Plant Computer System (PCS). Dedicated phone line communications have also been 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 limits. Radiation monitoring equipment for making airborne particulate and direct radiation measurements is installed in the TSC. The TSC houses the Plant Computer System Data Communications Processors. Inputs from plant sensors are processed by these units and the information is transmitted to facilities

including the Control Room and CERC for display on video terminals. Refer to Section 7.3.4, Plant Process Parameter Monitoring, for a description of the PCS.

7.1.4 Corporate Emergency Response Center

The CERC is the consolidated emergency operations facility (EOF) for Surry Power Station and North Anna Power Station. The CERC is located at the Innsbrook Technical Center in Glen Allen, Virginia. The facility provides workstations 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.

7.1.5 Joint Information Center

Official company statements to the media will be made from Joint Information Center (JIC) by the Chief Technical Spokesperson. The JIC is located at the Virginia State Police Administrative Headquarters in Chesterfield, Virginia. These company statements are prepared at the CERC.

7.1.6 Alternate Facility When Under Threat or Experiencing Hostile Action

The Surry County Administration Building 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 CERC, control room, and plant security. The 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 Surry 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 Surry 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

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.

The Plant Computer System (PCS) was installed in order to support the data acquisitions need of the emergency response facilities. The PCS will provide 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. PCS monitors are strategically located in areas including the Control Room, TSC, and CERC. 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 system as they collect and process parametric data from the various plant sensors. The PCS will process inputs from plant sensors and distribute information to the Control Room and TSC. Secure links on the station LAN and corporate Wide Area Network (WAN) will provide data to designated LAN/WAN-connected PCs, which have the appropriate software and security level for access, including the CERC.

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.

ERF COMMUNICATIONS

TABLE 7.1

Operational Support Center (OSC)

1. Public Address Intercom
2. Dedicated voice communications to Control Room and TSC
3. Radio System
4. Station PBX phone

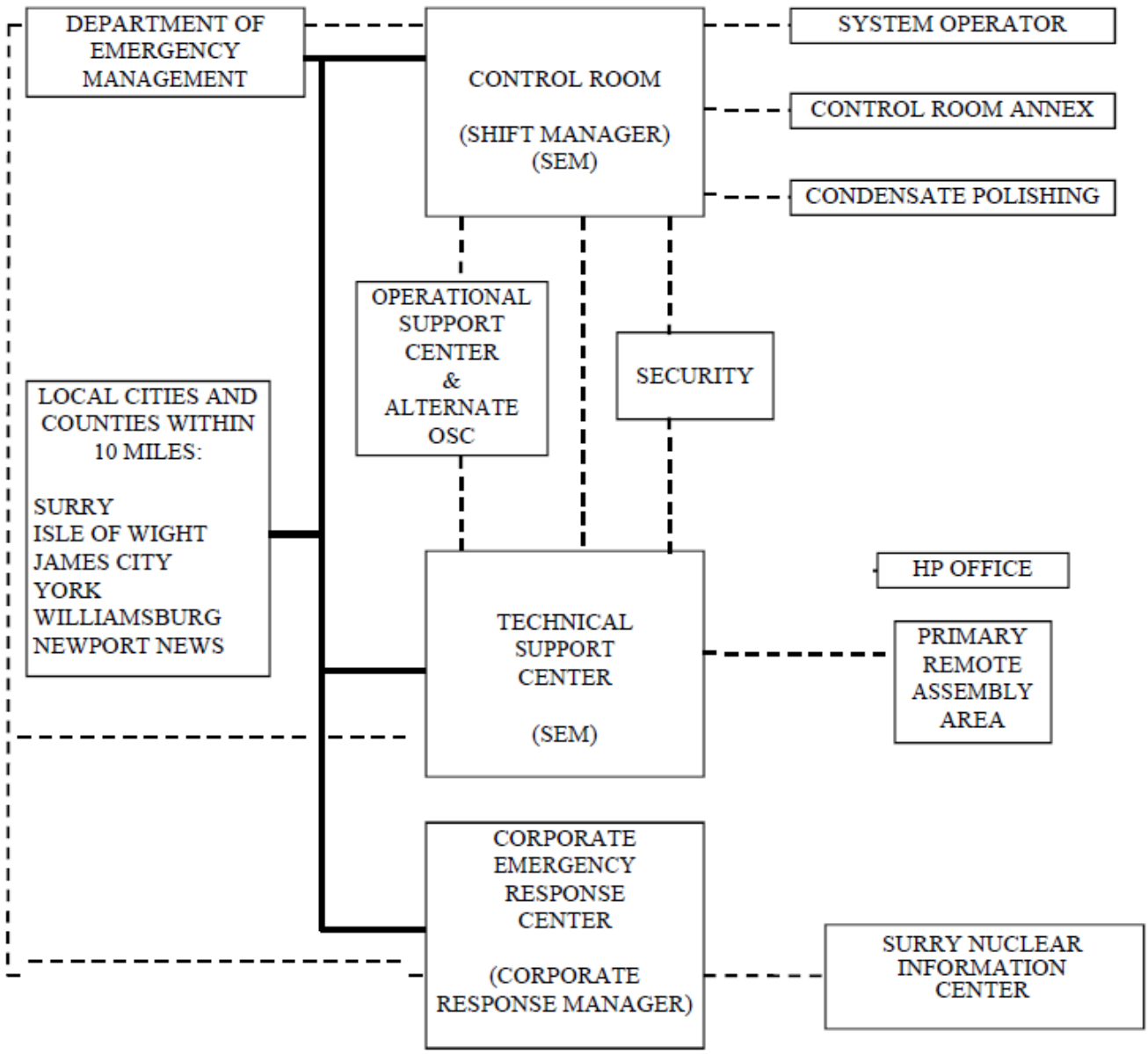
Corporate Emergency Response Center (CERC)

1. Dedicated voice communications to TSC, SNIC and VEOC
2. Dominion Energy Emergency Notification System (DEENS)
3. Commercial Phones
4. Radio System
5. Station PBX Phones
6. OPX Phones
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

Near Site Location For Offsite Agency Coordination

1. Commercial phones
2. Computers with internet access

COMMUNICATIONS LINKS
FIGURE 7.3



LEGEND: DEDICATED VOICE COMMUNICATION ----------
DOMINION ENERGY EMERGENCY NOTIFICATION SYSTEM (DEENS) ━━━━━

NOTES:
1. PUBLIC ADDRESS INTERCOM SYSTEM AVAILABLE THROUGHOUT THE STATION.
2. BASE, PORTABLE AND MOBILE RADIOS ARE USED TO COMMUNICATE BETWEEN FACILITIES, MONITORING AND DAMAGE CONTROL TEAMS, ETC.
3. PBX, OPX AND COMMERCIAL TELEPHONE LINES ARE ALSO AVAILABLE

TABLE 8.1

EMERGENCY PREPAREDNESS TRAINING

EMERGENCY RESPONSE POSITION	SCOPE OF TRAINING (See Footnotes)
Station Emergency Manager	1,2,7,12,14
Shift Technical Advisor	1,2,12,14
Emergency Communicator	1,3,12
Emergency Procedures Coordinator	1,2,12
Emergency Operations Director	1,2,12,14
Emergency Maintenance Director	1,4,6,12
Emergency Technical Director	1,6,12,14
Emergency Security Director	1,6,7,13
Radiological Assessment Director	1,9,10,11,12,14
Radiation Protection Supervisor	1,10,11,12
Operational Support Center Director	1,4,5,12
OSC Support Team	1,4,5,12
Technical Support Team	1,6,12,14
Security Team	1,8,12
Dose Assessment Team	1,9,12
Sample Analysis and Monitoring Teams	1,11,12
Damage Control Team	1,4,12
Corporate Response Manager and Technical Support Manager	1,12,15,16
Nuclear News Manager and News Team	1,12,16,17
Chief Technical Spokesperson and JIC Support Team	1,12,16,17
Operations Support Coordinator and Operations Support Team	1,12,14,16
Radiological Assessment Coordinator	1,9,10,12,14,16
Accident Assessment Team dose assessors	1,9,12,16
HPN Communicator	1,3,12,16
State & Local Emergency Communicator (CERC)	1,3,12,16
CERC positions not listed above	1,12,16

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: Organizational interfaces and responsibilities appropriate for individual position assignments.

13. Training provided emphasizes: Emergency organizational interfaces, search and rescue procedures, and communications systems.

14. Training provided emphasizes: Use of the Plant Computer System appropriate for individual position assignments.

15. Training provided emphasizes: Protective measures, notification systems and processes, offsite support group capabilities and interface, press release review, and recovery.

16. Training provided emphasizes: Activation and administration of the Corporate Emergency Response Center.

17. Training provided emphasizes: Staffing and administration of the Joint Information Center appropriate for individual position assignments.

ATTACHMENT 2-3

Surry Power Station, Units 1 and 2:

Table B-1 Comparison

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

Surry (SPS) *On-Shift* Table Comparison

Major Functional Area and Tasks	Position Title / Expertise	0654 Rev 1 Table B-1 On-shift	SPS Rev 40 On-Shift	SPS Rev 68 On-Shift	0654 Rev 2 Table B-1 On-Shift	SPS Proposed On-shift
Plant Operation and Assessment of Operation Aspects	Station Emergency Manager	1	1	1	1	1
	Shift Supervisor (SRO)	1	2	2		2
	Control Room Operator (RO)	2	3	4		
	Control Room Operator (AO)	2	4	7		
Emergency Direction and Control (Emergency Coordinator) ***	Station Emergency Manager	1**	1**	1**		1**
Notification / Communication **** State/Local and Federal	Emergency Communicator	1****	2**	2**	1*	2
Radiological Accident Assessment						
- Dose Assessment	Rad Assessment Director		1**	1	1*	1
- In-Plant/Onsite Surveys	In-plant Monitoring Team Member/Leader	1	2	1		1
- Chemistry Radiochemistry	Chemistry Team Member/Leader	1	1	1		
- Protective Actions	Personnel Monitoring Team Member/Leader	2**	2**	1	1	1
Plant System Engineering / Technical Support	Shift Technical Advisor	1	1*	1	1	1
Repair and Corrective Actions	Radwaste Operator		1**			
	Electrical Maintenance	1**	1*	1*		
	Mechanical Maintenance	1**	1*	1*		
	Instrument and Control					
Firefighting	Fire Team Members		5**	3		
Rescue Operations and First-Aid	First Aid Team Members	2**	2**	2**		
Site Access Control and Personnel Accountability	Security Personnel					
Total On-Shift		**10**	**13**	**22**	**5**	**9**

*Mechanical and Electrical maintenance personnel are normally on-shift 16 hours per day 7 days per week,
**May be provided by shift personnel assigned other functions
***Overall direction of facility response to be assumed by EOF director when all centers fully manned
****May be performed by engineering aide to shift supervisor

Surry (SPS) *30 Minute Alert or Greater* Augmented ERO Table Comparison

Major Functional Area	Position Title / Expertise	0654 Rev 1 Table B-1 Augment (30 min)	SPS Rev 40 (45 min)	SPS Rev 71 (45 min)	0654 Rev 2 Table B-1 (30-min)	SPS Proposed (45 min)
Command and Control	Emergency Coordinator					
Classification	Classification Advisor					
Notification / Communication	State/local	1				
	Federal					
Radiological Accident Assessment	Senior Manager/ Site RP Coordinator					
- Dose Assessment	Dose Assessor	1				
- In-Plant/Onsite Surveys	RP Technician	2				
- Chemistry Radiochemistry	Chemistry Technician					
- Protective Actions	RP Technician	2				
- Offsite Surveys	Team Lead and Driver	2				
Plant System Engineering / Technical Support	Ops Advisor					
	Core/Thermal Hydraulics Eng	1				
	Engineering Engineer					
	Mechanical Engineer					
	Engineering Support Supervisor					
Repair and Corrective Actions	Mechanical Maintenance	1	1	1		
	Electrical Maintenance	1				
	RP					
	Damage Control Team Coord					
	Field Team Director					
Total Augmented ERO		**11**	**1**	**1**		

Surry (SPS) *60 Minute Alert or Greater* Augmented ERO Table Comparison

Major Functional Area	Position Title / Expertise	0654 Rev 1 Table B-1 Augment (60 min)	SPS Rev 40 (60 min)	SPS Rev 71 (60 min)	0654 Rev 2 Table B-1 (60-min)	SPS Proposed (60 min)
Command and Control	Emergency Coordinator			1	1	
Classification	Classification Advisor				1	
Notification / Communication	State/local	1	2	2	2	
	Federal					
Radiological Accident Assessment	Senior Manager/ Site RP Coordinator				1	
- Dose Assessment	Rad Assessment Director	1	1	1	1	
- In-Plant/Onsite Surveys	Onsite and In-Plant Monitoring Team Member/Leader	2	4	4	2	
- Chemistry Radiochemistry	Chemistry Team Member/Leader		2	2		
- Protective Actions	Personnel Team Member/Leader	2	4	4	1	
- Offsite Surveys	Offsite Monitoring Team Member/Leader	2	4	4	2	
Plant System Engineering / Technical Support	Ops Advisor		1	1		
	Core/Thermal Hydraulics Eng	1	1	1	1	
	Engineering Engineer		1	1	1	
	Mechanical Engineer		1	1	1	
Repair and Corrective Actions	Mechanical Maintenance	1	1	1	1	
	Electrical Maintenance	1	2	2	1	
	Instrument and Control		2	2	1	
Total Augmented ERO		**11**	**26**	**27**	**17**	**0**

Surry (SPS) *60 Minute SAE or Greater* Augmented ERO Table Comparison

Major Functional Area	Position Title / Expertise	0654 Rev 1 Table B-1 Augment (60 min)	SPS Rev 40 (75 min)	SPS Rev 71 (75 min)	0654 Rev 2 Table B-1 (60-min)	SPS Proposed (75 min)
Command and Control	Recovery Manager			1	1	
Notification / Communication	State/local/Federal	2			1	
Radiological Accident Assessment - Dose Assessment - In-Plant/Onsite Surveys - Chemistry Radiochemistry - Protective Actions - Offsite Surveys	Radiological Assessment Coordinator	1		1	1	
	Dose Assessor				1	
	RP Technician					
	Chemistry Technician	1				
	RP Technician	1				
	Team Lead and Driver					
Plant System Engineering / Technical Support	Ops Advisor					
	Core/Thermal Hydraulics Eng					
	Engineering Engineer	1				
	Mechanical Engineer	1				
	Technical Support Manager			1		
	Plan/Design/Const Manager			1		
Repair and Corrective Actions	Mechanical Maintenance	1				
	Electrical Maintenance					
	Instrument and Control	1				
News Center	Chief Technical Spokesperson			1		
Total Augmented ERO		**15**	**0**	**5**	**4**	**0**

Surry (SPS) *90 Minute Alert or Greater* Augmented ERO Table Comparison

Major Functional Area	Position Title / Expertise	0654 Rev 1 Table B-1 Augment (90 min)	SPS Rev 40 (90 min)	SPS Rev 71 (90 min)	0654 Rev 2 Table B-1 (90-min)	SPS Proposed (90 min)
Command and Control	Emergency Coordinator		1			3
Notification / Communication	State/local					3
	Federal					
Radiological Accident Assessment	Senior Manager/ Site RP Coordinator		1			3
- Dose Assessment	Dose Assessor					2
- In-Plant/Onsite Surveys	RP Technician				2	2
- Chemistry Radiochemistry	Chemistry Technician					
- Protective Actions	RP Technician				1	4
- Offsite Surveys	Offsite Monitoring Team Member/Leader				2	4
Plant System Engineering / Technical Support	Ops Advisor					
	Core/Thermal Hydraulics Eng					1
	Electrical Engineer					1
	Mechanical Engineer					1
	Technical Support Manager		1			
	Plan/Design/Const Manager		1			
Repair and Corrective Actions	Mechanical Maintenance Tech.					1
	Electrical Maintenance Tech.					1
	I&C Technician				1	1
	OSC Director					1
	Electrical Coordinator				1	1
	Mechanical Coordinator				1	1
	I&C Coordinator				1	1
	RP Coordinator				1	1
News Center	Chief Technical Spokesperson		1			
Total Augmented ERO			**5**		**10**	**32**

ENCLOSURE 3

Letter of Concurrence from the
Virginia Department of Emergency Management

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

Dominion Energy Services, Inc.
Nuclear Emergency Preparedness
5000 Dominion Boulevard, Glen Allen, VA 23060
DominionEnergy.com

Dominion Energy®

July 8, 2022

Mr. Shawn G. Talmadge
State Coordinator
Virginia Department of Emergency Management
9711 Farrar Court
North Chesterfield, VA 23236

Dear Mr. Talmadge

Dominion Energy Virginia is in the process of asking the Nuclear Regulatory Commission (NRC) for approval to revise both of our North Anna Power Station (NAPS) and Surry Power Station (SPS) Emergency Plans. Below is the list of all proposed changes.

- Extend augmentation times to 90 minutes for TSC, OSC and CERC ERO members
- New facility activation definition *(from facility is capable to perform its functions to facility is capable of relieving the shift of duties)*
- Changing definition of minimum/full staff; all E-Plan designated positions will now be expected to respond at 90 minutes
- Remove administrative positions, those not included in the E-Plan, to non-emergency response procedures
- Remove E-Plan requirement for maintenance personnel to be on 16 hour shifts 7 days a week
- Aligning required ERO on-shift personnel with revised regulatory guidance
- Removal of the Local Media Center at each station as an emergency response facility

The change that may be visible to State response personnel are the E-Plan designated positions expected to respond within 90 minutes to the Corporate Emergency Response Center (CERC). At present, 12 CERC positions are expected to respond within 75 minutes. Within the proposed revision 18 CERC positions are expected to respond within 90 minutes.

Prior to seeking approval from the NRC, Dominion Energy Virginia hereby requests that your agency review this change for any impact it may have on your Radiological Emergency Preparedness (REP) plan for both NAPS and SPS. If you have any questions regarding these proposed emergency plan changes or this request, please feel free to contact me at (804) 273-3191. Otherwise, if you concur with the proposed emergency plan changes and that there are no impacts to the Offsite plans please evidence your concurrence by countersigning an original copy of this letter and returning such copy to me in the self-addressed, stamped envelope or via e-mail.

As always, your continued support of the Dominion Energy Virginia emergency preparedness program is greatly appreciated.

Sincerely,

James E. Collins
Manager, Nuclear Fleet Emergency Preparedness
NEP Letter File 2022-021

ACKNOWLEDGED AND AGREED

Virginia Department of Emergency Management

Name: Shawn Talmadge

Title: State Coordinator Date: 7/11/2022