Dominion Energy South Carolina, Inc.
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June 8, 2023

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

Serial No.: 22-249
NRA/YG: R0
Docket No.: 50-395
License No.: NPF-12

DOMINION ENERGY SOUTH CAROLINA (DESC)
VIRGIL C. SUMMER NUCLEAR STATION (VCSNS) UNIT 1
LICENSE AMENDMENT REQUEST – EMERGENCY RESPONSE ORGANIZATION (ERO) AUGMENTATION TIME CHANGE, EMERGENCY OPERATIONS FACILITY RELOCATION AND OTHER EMERGENCY PLAN CHANGES

Pursuant to the provisions of Title 10 of the Code of Federal Regulations (10 CFR Part 50.54(q)(4), Part 50 Appendix E, Section IV.E.8.b, and Part 50.90), Dominion Energy South Carolina (DESC) is hereby submitting a License Amendment Request for Virgil C. Summer Nuclear Station (VCSNS) Unit 1.

The proposed amendment would modify the VCSNS Emergency Plan by:

(1) Extending Emergency Response Organization (ERO) Augmentation Times to 60 or 90 minutes from 30 or 60 minutes depending on specific ERO positions.

(2) Relocating the Emergency Operations Facility (EOF) and the Joint Information Center (JIC) from Ballentine, South Carolina and West Columbia, South Carolina to the Dominion Energy Corporate Emergency Response Center (CERC) in Glen Allen, Virginia.

(3) Adding 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).

(4) Revising the minimum staffing definition for the Emergency Response Facilities (ERF) to align with new facility activation criteria.

(5) Extending facility activation requirements to 90 minutes after declaration of an Alert or higher classification.

(6) Reorganizing the VCSNS Emergency Plan Table B-1a based on emergency preparedness functions.

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

(8) Removing references to chemistry, maintenance, firefighting, first aid/rescue, site access control and personal accountability functions being on-shift from Table B-1a.

Attachment 1 to this letter provides a description and assessment of the proposed changes. Attachment 2 provides the current VCSNS Emergency Plan marked-up to show the proposed changes. Attachment 3 provides the revised (clean) VCSNS Emergency Plan pages. Attachment 4 provides a Table B-1 comparative chart. Attachment 5 provides the ERO position impact summary. Attachment 6 provides the No Significant Hazards Consideration for this proposed amendment. Attachment 7 provides the offsite response organization concurrence letters. Attachment 8 provides a list of references.

DESC requests approval of the proposed license amendment by May 31, 2024, with a 180-day implementation period.

In accordance with 10 CFR 50.91, "Notice for Public Comment; State Consultation," a copy of this application, with attachments, is being provided to the designated South Carolina State Official.

Should you have any questions, please contact Yan Gao at (804)-273-2768.

Respectfully,

James E. Holloway
Vice President – Nuclear Engineering and Fleet Support

Commitments made in this letter: None.

COMMONWEALTH OF VIRGINIA)
)
COUNTY OF HENRICO)

The foregoing document was acknowledged before me, in and for the County and Commonwealth aforesaid, today by James E. Holloway, who is Vice President – Nuclear Engineering and Fleet Support of Dominion Energy South Carolina, Inc. 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 8th day of June, 2023.

My Commission Expires: January 31, 2024

Kathryn Hill Barret
Notary Public
Commonwealth of Virginia
Reg. No. 7905256
My Commission Expires January 31, 2024

Kathryn H. Barret
Notary Public

ATTACHMENTS

1. Description and Assessment
2. Current VCSNS Emergency Plan Pages Mark-up
3. Revised (Clean) VCSNS Emergency Plan Pages
4. Table B-1 Comparative Chart
5. ERO Position Impact Summary
6. No Significant Hazards Consideration Justification
7. Offsite Response Organization Concurrence Letters
8. References

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ATTACHMENT 1

DESCRIPTION AND ASSESSMENT

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DESCRIPTION AND ASSESSMENT

1.0 DESCRIPTION

The VSCNS Emergency Plan, was originally reviewed and approved by the NRC as meeting the requirements established in NUREG-0654, Revision 1, [8.3] as documented by NRC Safety Evaluation Report (SER), dated January 1982 [8.4].

VCSNS has four Emergency Response Facilities (ERFs) augmenting the on-shift staff: the TSC, the OSC, the EOF, and the Joint Information Center (JIC). During an emergency, the Shift Manager initially assumes emergency response command and control as the Interim Emergency Director (IED) until relieved by the Emergency Director.

VCSNS uses four standard levels of emergency classification as described in NUREG-0654, Revision 1, [8.3]. At the Alert or higher emergency classification levels, the TSC and OSC are activated. The EOF and JIC are activated at the Site Area Emergency or higher classification.

1.1 Summary Description of Proposed Changes

Dominion Energy South Carolina (DESC) proposes revisions to the Virgil C. Summer Nuclear Station (VCSNS), Unit 1, Radiation Emergency Plan/Emergency Plan. The proposed change items are summarized below:

- Extension of Emergency Response Organization (ERO) augmentation response times from 30 and 60 minutes to 60 minutes for support roles and 90 minutes for roles performing relief functions.

- Extension of facility activation requirements for the Technical Support Center (TSC) and Operational Support Center (OSC) from 60 minutes to 90 minutes.

- Addition of definition for ‘facility activation’ criteria.

- Redefinition of “minimum staff” positions.

- Reorganization of Table B-1a staffing based on Emergency Preparedness (EP) functions to better align to NUREG 0654, Revision 2, [8.1] Table B-1 guidance.

- Reduction of the Emergency Action Level (EAL) classification at which the Offsite Survey Teams are dispatched from Site Area Emergency (SAE) to Alert.

- Removal of references to activities managed by processes outside of the VCSNS Emergency Plan.

- Relocation of administrative positions from the VCSNS Emergency Plan to implementing procedures.

- Replacing the Emergency Operations Facility (EOF) and Joint Information Center (JIC) with the Corporate Emergency Response Center (CERC)
- Generic ERO staff position title updates

For the proposed changes, the following key points are further noted:

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

The proposed change extends the facility activation timeframe for the TSC and OSC from 60 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 Part 2, Section B of the proposed VCSNS Emergency Plan. Provision of augmented staff to perform support functions for this 30-minute period is discussed in Section 3.0 of this attachment.

(2) Extension of the augmentation time for Emergency Response Organization (ERO) members from 30 and 60 minutes to 60 and 90 minutes

The proposed change revises the VCSNS Emergency Plan by extending 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. The proposed change will not be applied as permission to delay response to an event.

In order to justify a 90-minute response time for certain VCSNS augmented resources, an analysis of site procedures and their bases was completed. The analysis evaluated event diagnostic/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 also evaluated equipment failures in order to establish the sequence of actions taken in scenarios where procedure actions alone were not successful in the first 90 minutes after event initiation. The results of this analysis are included in Section 2.3 of this attachment.

The diverse and redundant nature of the Emergency Core Cooling System (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 during the initial response to an event. The proposed change does not affect the requirements related to performance of maintenance activities after the first 90 minutes from declaration of an event. Details associated with the ECCS are addressed in Section 2.1.1 of this attachment.

The proposed changes credit technological advances, enhanced capabilities to restore safety functions, and other strategies to extend the augmentation response times. Examples include the use of installed safety and non-safety systems and applicable Beyond Design Basis strategies. The credited strategies will continue to ensure actions

can be taken by on-shift resources to initiate troubleshooting and repairs of safety functions, and that extending the augmentation response times for TSC and OSC positions to 90 minutes will continue to ensure effective and timely emergency response.

(3) Revised definition of 'minimum staff' and 'facility activation' in the Emergency Response Facilities (ERFs) to align with new fleet standard criteria

The proposed change revises the use of the term 'facility activation' as it relates to Emergency Response Facility (ERF) readiness to accept emergency response functions and standardizes the facility activation 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, Protective Action Recommendations, 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 positions required to transfer oversight of in-plant teams from the Control Room. Revised figures have been added to the VCSNS 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. Details associated with the revised ERO, and key responsibilities and tasks as identified in NUREG-0654, Revision 1, [8.3] and NUREG-0654, Revision 2, [8.1] Table B-1, are included in Section 3.0 of this attachment.

(4) Reorganization of Table B-1a based on EP functions to better align to NUREG-0654, Revision 2, [8.1], Table B-1 guidance

NUREG-0654, Revision 2, [8.1] Table B-1, placed greater focus on EP functions performed by Plant Operations personnel. In this proposed change, only plant Operations personnel performing the EP functions of Classification, Notification, Core Damage Assessment, and on-shift ERO oversight are in included in Table B-1a. On-shift staffing requirements for Operations personnel is specified in VCSNS TS 6.2.2, Unit Staff. Other changes to the table include revisions of functional area descriptions to align with NUREG-0654, Revision 2 [8.1], Table B-1 and inclusion of positions required for activation of the TSC, OSC and EOF.

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

The current VCSNS Emergency Plan requires staffing of personnel for one (1) Offsite Field Monitoring Team (FMT) at 40 minutes, and a second Offsite Field Monitoring Team at 60 minutes, following the declaration of a Site Area Emergency or higher classification. Dispatch of FMTs occurs at the declaration of a Site Area Emergency or higher. This proposed change revises the title of the environmental monitoring function to Offsite Monitoring Teams and revises the requirement for the dispatch of the teams from declaration of a Site Area Emergency to declaration of an Alert or higher classification. Additionally, the proposed change combines the Onsite (out-of-plant) and In-Plant survey functions and extends the response time for RP qualified individuals performing these surveys from 30 minutes and 60 minutes to 60 minutes and 90 minutes, respectively.

(6) Removal of references to chemistry, maintenance, firefighting, first aid/rescue, and site access control and personal accountability functions on-shift from Table B-1a

Th proposed change removes VCSNS Emergency Plan references to positions performing non-EP functions in accordance with NUREG-0654, Revision 2, [8.1] Table B-1, Note iii. These positions are governed and maintained as required by TSs, the Fire Protection Plan, and site procedures. Reference to these positions/functions are also removed from other parts of the proposed VCSNS Emergency Plan as identified in Attachment 2 of this submittal.

(7) Relocating the current VCSNS EOF and JIC to the Dominion Energy Corporate Emergency Response Center (CERC)

Dominion Energy purchased Virgil C. Summer Nuclear Station (VCSNS) in 2019. Dominion Energy uses a Corporate Emergency Response Center (CERC) which currently functions as the consolidated emergency operations facility for North Anna Power Station (NAPS) and Surry Power Station (SPS). The proposed change would relocate the current EOF and JIC to the Dominion Energy CERC, located near Richmond Virginia. The proposed relocation of the VCSNS EOF and JIC is expected to have the following positive effects on VCSNS's emergency response capability:

- Increased number of site ERO members available for assignment to other positions in the TSC and the Operational Support Center (OSC)

- Increased efficiency due to using common practices and procedures in a single facility

- Enhanced availability of emergency response personnel due to EOF location being away from the reactor site which could be affected by a large-scale external event, hostile action, or radioactivity release

The straight-line distance from the VCSNS TSC to the current EOF is 12 miles and the straight-line distance from VCSNS to the CERC is 312 miles. Moving the EOF to the CERC will not adversely affect the functional capabilities of the EOF. The current EOF site will retain its functionality as an alternative facility as prescribed by 10 CFR Part 50, Appendix E, Section IV.E.8.d.

In addition, a near-site facility for use by NRC and offsite responders close to the nuclear power reactor site will be located at the current Nuclear Operations Building.

1.2 Description of Proposed Changes

A description of each of the proposed changes is presented in Table 1.2 - 1. Specific wording of each change is identified in Attachments 2 and 3 of this submittal.

Table 1.2 - 1 Descriptions of Proposed Changes		
Change No.	**Section**	**Description**
1	Part 1, Section H	Changed title of 'Interim Emergency Director' to 'Interim Station Emergency Manager' to align with Dominion fleet standard ERO.
2	Part 2, Section A.1.b	Realigned definitions of onsite and offsite ERO responsibilities, removed references to source departments for ERO positions, removed references to Firefighting, First Aid and Security and realigned responsibilities for the Onsite ERO in accordance with the proposed change.
3	Part 2, Section A.1.b.2)	Changed title of 'EOF Manager' to 'Corporate Response Manager (CRM)', removed references to source departments for ERO positions and realigned responsibilities for Offsite ERO in accordance with the proposed change.
4	Part 2, Section A.1.b.3)	Deleted reference to Emergency Public Information Organization (EPIO) as this organization is combined with the CERC response under the proposed change.
5	Part 2, Section A.1.b.4)	Deleted reference to Innsbrook Corporate Support Center (ICSC) as ICSC function will be performed at the CERC under the proposed change.
6	Part 2, Section A.1.c.	Deleted reference to the Emergency Control Officer as this position is replaced with the CERC Corporate Response Manager under the proposed change.
7	Part 2, Section A.4	Removed references to fire protection, security and emergency preparedness and revised 'ED' to 'SEM' in accordance with the proposed change. Also revised 'Radiation Protection' to 'Radiation Protection/Chemistry' to align with the site organizational structure.
8	Part 2, Section A.5	Updated ERO position titles in accordance with the proposed change.
9	Part 2, Figure A-2	Revised Figure A-2 to replace reference to the EOF and JIC with the CERC in accordance with the proposed change.
10	Part 2, Section B.1	Removed details related to initial response phase as this is governed by the augmentation process outlines in Table B-1a. Removed references to operations, security, chemistry, fire brigade and medical response to align EP with NUREG-0654, Revision 2, Table B-1 positions. Revised ERO position tiles to align with Dominion fleet standards. Revised 'Radiation Protection' to 'Radiation Protection/Chemistry' to align with the site organizational structure.
11	Part 2, Section B.2	Revised position titles to align with Dominion fleet standards, removed references to activities associated with the Control Room, TSC and EOF as these duplicate responsibilities discussed in Section B.5.
12	Part 2, Section B.3	Revised position titles to align with Dominion fleet standards, added figure depicting process and flow for transfer of command-and-control functions between facilities and removed references to command-and-control transfer process as this is described in site procedures.
13	Part 2, Section B.4	Revised list of non-delegable duties to align with command-and-control functions as outlined in the figure in Section B.3, revised ERO position titles to align with Dominion fleet standards and removed references to CSD and ICSC in accordance with the proposed change.
14	Part 2, Section B.5	Revised to remove reference to Annex 1, Table 2-1 and Part 2, Section B-1 which are deleted as part of the proposed change, removed references to Onsite and Offsite ERO and the EPIO in accordance with the proposed change.
15	Part 2, Section B.5.a	Revised list of ERO positions to align with proposed changes and NUREG-0654, Revision 2, Table B-1 guidance, revised response times and added reference to the Alternative Facility in accordance with the proposed change.

Table 1.2 - 1 Descriptions of Proposed Changes		
Change No.	**Section**	**Description**
16	Part 2, Section B.5.a.1)	Revised position titles to align with Dominion fleet standards, removed reference to operational duties performed outside of the EP in accordance with NUREG-0654, Revision 2.
17	Part 2, Section B.5.a.2)	Revised position titles to align with Dominion fleet standards.
18	Part 2, Section B.5.a.3)	Deleted reference to Emergency Preparedness Advisor as this position is not included in the proposed Emergency Plan. Activities previously performed by this position are performed by the State/Local Communicator in the TSC in accordance with the proposed change.
19	Part 2, Section B.5.a.3)	Renumbered and revised position titles to align with Dominion fleet standard ERO.
20	Part 2, Section B.5.a.4) through B.5.a.7)	Added description of new ERO positions in accordance with the proposed change.
21	Part 2, Section B.5.a.8) through B.5.a.13)	Renumbered and revised titles to align with Dominion fleet standard ERO.
22	Part 2, Section B.5.a.14)	Added description of Radiation Protection Supervisor ERO position in accordance with the proposed change.
23	Part 2, Section B.5.a.15)	Revised titles to align with Dominion fleet standard ERO.
24	Part 2, Section B.5.a.12)	Replaced Security Lead position with the Emergency Security Director (B.5.a.7) and relocated to the TSC.
25	Part 2, Section B.5.b.	Replaced references to 'Offsite ERO' with 'CERC', revised reference for facility activation to Alert from Site Area Emergency, updated ERO position titles, removed reference to 'EPIO' and replaced with a reference to the Joint Information System (JIS) as a function of the CERC.
26	Part 2, Section B.5.b.1)	Revised section to reflect new position title and associated responsibilities in order to align with Dominion fleet standard ERO.
27	Part 2, Section B.5.b.2)	Revised and renumbered 'EOF Manager' title to 'Technical Support Manager' to reflect new position title and associated responsibilities in order to align with Dominion fleet standard ERO.
28	Part 2, Section B.5.b.3)	Deleted 'Plant Engineering Advisor' position to align with Dominion fleet standard ERO.
29	Part 2, Section B.5.b.4)	Revised and renumbered 'Offsite Radiological Monitoring Coordinator' to 'Radiological Assessment Coordinator' and revised description to align with Dominion fleet standard ERO.

Table 1.2 - 1 Descriptions of Proposed Changes		
Change No.	**Section**	**Description**
30	Part 2, Section B.5.b.4)	Added the 'Accident Assessment Team' description to align with Dominion fleet standard ERO. This description replaces the Dose Assessor function as described in the current Plan.
31	Part 2, Section B.5.b.5)	Revised and renumbered 'Communications Coordinator' title to 'Operations Support Coordinator' and associated description to align with Dominion fleet standard ERO.
32	Part 2, Section B.5.b.6)	Added 'Operations Support Team' at the CERC. This Team is responsible for tracking plant conditions and transmitting notification to State and local governments.
33	Part 2, Section B.5.b.8)	Deleted 'State/County Communicator' description as this position is incorporated into the 'Operations Support Team' at the CERC.
34	Part 2, Section B.5.b.9)	Deleted 'Plant Security Advisor' position. Security functions will be performed by site security personnel in accordance with the Site Security Plan.
35	Part 2, Section B.5.b.7)	Revised and renumbered 'General Services Coordinator' position with 'Resource Support Manager' to align with Dominion fleet standard ERO.
36	Part 2, Section B.5.b.8)	Added 'Resource Support Team' description to align with Dominion fleet standard ERO.
37	Part 2, Section B.5.b.9)	Added 'Nuclear News Manager' to align with Dominion fleet standard ERO.
38	Part 2, Section B.5.b.10)	Added 'News Team' to align with Dominion fleet standard ERO.
39	Part 2, Section B.5.b.11)	Renumbered and revised work location for Chief Technical Spokesperson and removed reference to activities for coordinating with Public Information Officers.
40	Part 2, Section B.5.b.12)	Added 'Media Briefing Support Team' description to CERC staff to align with Dominion fleet standard ERO.
41	Part 2, Section B.5.c.	Deleted 'Emergency Joint Public Information Center Organization (EPIO)' as this function is incorporated into the CERC in accordance with the proposed change.
42	Part 2, Section B.5.c.2), 3) and 4)	Deleted 'Joint Information Coordinator', 'Technical Briefer' and 'Corporate Support Director (CSD)' positions to align with Dominion fleet standard ERO.
43	Part 2, Section B.6	Removed reference to 'Annex1 Table 2-1' and revised reference to "Section B-1" to read "Section B" as this section of the VCS Plan is being deleted under the proposed change.
44	Part 2, Figure B-1a	Overall ERO Command Structure is deleted and replaced with the TSC Organization in accordance with the proposed change.
45	Part 2, Figure B-1b	Onsite Emergency Response Organization is deleted and replaced by the new Figure B-1a, TSC Organization and new Figure B-1b, OSC Organization in accordance with the proposed change.

Table 1.2 - 1 Descriptions of Proposed Changes		
Change No.	**Section**	**Description**
46	Part 2, Figure B-1c	Offsite Emergency Response Organization, deleted and replaced with the CERC Organization in accordance with the proposed change.
47	Part 2, Figure B-1d	Emergency Public Information Organization is deleted. This organization is replaced by the CERC in accordance with the proposed change.
48	Part 2, Table B-1a	Staffing Requirements for the VCSNS ERO, deleted current table and replaced with revised table in accordance with the proposed change.
49	Part 2, Section C.1.c	Removed reference to facility accommodation detail to align with EP structure for other Dominion sites.
50	Part 2, Section C.2.a	Revised to identify the near site location available for use by offsite response personnel.
51	Part 2, Section D.1.a	Revised ERO position titles in accordance with the proposed change and revised NRC notification requirement to more closely align to 10 CFR 50.72.
52	Part 2, Section D.1.b	Revised ERO position titles in accordance with the proposed change and revised NRC notification requirement to more closely align to 10 CFR 50.72. Removed reference to classification by the Shift Manager as this statement is not material to the classification level.
53	Part 2, Section D.1.c	Removal of reference to actions completed by the ED as these are not material to the classification level and removal of reference to Emergency Public Information Organization in accordance with the proposed change.
54	Part 2, Section D.1.d	Removal of reference to actions completed by the ED as these are not material to the classification level.
55	Part 2, Section D.1.f	Revised ERO position titles in accordance with the proposed change and removed reference to the Recovery/Termination Checklist as this is described in site procedures.
56	Part 2, Section D.1.g	Revised ERO position titles in accordance with the proposed change and replaced references to classification level with ‘Recovery Phase’.
57	Part 2, Section D.1.h	Deleted ‘ECO’ since this position is eliminated in accordance with the proposed changes. This change also specifies that the Shift Manager remains solely responsible for implementation of the Emergency Plan.
58	Part 2, Section E.2.a	Revised to reflect changes to ERO activation process at the Alert classification.
59	Part 2, Section F.1.a	Revised to delete reference to EMNet communication system, changed reference from the ‘EOF’ to the ‘CERC,’ and revised the description of general backup communications capabilities in accordance with the proposed changes.
60	Part 2, Section F.1.b-d	Revised to replaced ‘EOF’ with ‘CERC’ in accordance with the proposed change.
61	Part 2, Section F.1.b-d.1)	Removed EOF reference to use of PBX system.

Table 1.2 - 1 Descriptions of Proposed Changes		
Change No.	**Section**	**Description**
62	Part 2, Section F.1.b-d.2)	Deleted reference to EMNet system for state/local notification. An ORO notification system is referenced in Section L of the proposed change.
63	Part 2, Section F.1.b-d.2)	Renumbered and removed reference to JIC lines as these are not included as part of the communication system with the CERC.
64	Part 2, Section F.1.b-d.4) and 5)	Renumbered and replaced EOF reference with CERC in accordance with the proposed change.
65	Part 2, Section F.1.f	Replaced references to EOF with CERC in accordance with the proposed change.
66	Part 2, Figure F-1	Notification Scheme revised to replace 'EOF' with 'CERC', updated position titles and removed reference to full augmentation in accordance with the proposed change.
67	Part 2, Figure F-2	ERF Communications Matrix revised to replace 'EOF' with 'CERC' and removed reference to JIC as this is now included in the CERC facility and revised position titles in accordance with the proposed change.
68	Part 2, Figure F-3	NRC Communications for Nuclear Response revised to replace 'EOF' with 'CERC' in accordance with the proposed change.
69	Part 2, Section G.1	Removed reference to 'EPIO' in accordance with the proposed change.
70	Part 2, Section G.3.a	Replaced reference to 'ICSC' with 'CERC' and added summary description related to news releases.
71	Part 2, Section G.3.a.1)	Deleted description of JICEPI Organization in accordance with the proposed change.
72	Part 2, Section G.3.a.2)	Deleted description of the JIC. New description included in Section H.2. in accordance with the proposed change.
73	Part 2, Section G.4.a	Deleted description of JIC staffing. Staffing described in Section H.2 and Section B, Figure B-1c.
74	Part 2, Section G.4.b	Replaced reference to Media and Rumor Control Monitor positions and added reference to Dominion Energy public information personnel as this group performs these functions under the proposed change.
75	Part 2, Section H	Replaced 'EOF' and 'JIC' with 'CERC'.
76	Part 2, Section H.1	Revised activation criteria for TSC and OSC, updated ERO position titles.
77	Part 2, Section H.1.a.	Revised position title and replaced 'EOF' and 'JIC' with 'CERC'.
78	Part 2, Section H.1.b.	Revised scope of emergency response actions from 'within the Protected Area' to 'onsite' to better reflect TSC responsibilities and replaced 'EOF' and 'JIC' with 'CERC'

Table 1.2 - 1 Descriptions of Proposed Changes		
Change No.	**Section**	**Description**
79	Part 2, Section H.1.c.	Updated position titles and removed reference to the location of the backup OSC being located in the building that houses the EOF in accordance with the proposed change.
80	Part 2, Section H.2	Revised to replace the Emergency Operations Facility description with that of the Corporate Emergency Response Center in accordance with the proposed change.
81	Part 2, Section H.3	Removed description of JIC. The JIC is an area within the CERC under the proposed change as described in Section H.2.
82	Part 2, Section H.3	Renumbered and added description of Alternative Facility.
83	Part 2, Section H.4	Renumbered and added description of the location for offsite agency coordination based on use of the CERC instead of the EOF in accordance with the proposed change.
84	Part 2, Section H.6	Renumbered and revised to remove note referencing NUREG-0654, Revision 1, Criterion II.B.5 based on proposed transition to NUREG-0654, Revision 2, standards. Revised section to reflect facility activation at the Alert or higher classification and remove description of JIC and ICSC staffing in accordance with the proposed change.
85	Part 2, Section H.7 and H.8	Renumbered and revised reference to 'EOF' with 'CERC' in accordance with the proposed change.
86	Part 2, Section H.11	Renumbered step, removed reference to 'EOF,' and removed parenthetical reference that does not apply to the OSC.
87	Part 2, Section H.13	Renumbered and replaced reference to 'Emergency Operations Facility' with 'Corporate Emergency Response Center' and removed reference to 'flashlights/batteries' as these are not required at the CERC. Updated reference to maps and drawing to account for electronic access to these items. Changed reference to a Dose Assessment Computer to Dose Assessment Capability.
88	Part 2, Section I.2	Revised to remove reference detail to align with other reference formats within the document.
89	Part 2, Section I.5	Replaced reference to 'EOF' with 'CERC' in accordance with the proposed change.
90	Part 2, Section I.8	Revised to reflect removal of requirement for onsite, 24-hour environmental survey capability and dispatch of Field Teams at the Alert rather than the Site Area Emergency classification.
91	Part 2, Section J.2, J.4 and J.5	Revised ERO position titles to align with Dominion fleet standard ERO.
92	Part 2, Section J.6	Revised department and position titles in accordance with the proposed change.
93	Part 2, Section J.7	Updated position titles and revised to reflect ability to develop protective action recommendations in the TSC if the CERC is unavailable.

Table 1.2 - 1 Descriptions of Proposed Changes		
Change No.	**Section**	**Description**
94	Part 2, Figure J-2	PAR Flowchart, Note 2, replaced reference to 'EOF' with 'CERC' in accordance with the proposed change.
95	Part 2, Section K	Revised ERO position titles to align with Dominion fleet standard ERO and department titles in accordance with the proposed change.
96	Part 2, Section L.1	Revised department title in accordance with the proposed change.
97	Part 2, Section L.2	Deleted section referencing First Aid as this program is managed outside of the VSCNS EP.
98	Part 2, Section L.2	Revised and renumbered to replace reference to 'EMNet' with generic ORO notification system reference to remove EP obsolescence issues as well as department title changes in accordance with the proposed change.
99	Part 2, Section M.1.a and b	Revised ERO position titles to align with Dominion fleet standard ERO in accordance with the proposed change.
100	Part 2, Section M.2	Recovery Organization description to align with CERC processes, replaced department titles and removed positions descriptions now discussed in Figure M-1.
101	Part 2, Figure M-1	Inserted organizational figure for example Recovery Organization to align with the Dominion standard for event response.
102	Part 2, Section N.2.b	Removed reference to communication between the EOF and JIC as both of these functions are maintained as part of the CERC in accordance with the proposed change.
103	Part 2, Section N.2.c	Removed reference to fire drills as these are managed outside of the VCSNS Emergency Plan.
104	Part 2, Section N.2.f	Renumbered and removed reference to the EOF and the JIC as these are incorporated into the CERC in accordance with the proposed change.
105	Part 2, Section O.3	Removed section related to First Aid Response as this function is managed outside the VCSNS Emergency Plan.
106	Part 2, Section O.3	Renumbered and revised to remove the reference to the EPIO in accordance with the proposed change.
107	Part 2, Section O.3.a	Renumbered and revised ERO position titles to align with Dominion fleet standard ERO.
108	Part 2, Section O.3.b.	Replaced reference to 'EMNet' with 'ORO notification system' to remove potential Plan obsolescence issues.
109	Part 2, Section O.3.c	Revised department title in accordance with the proposed change.
110	Part 2, Section O.3.d-h	Renumbered and removed references to Police, Security, Fire Brigade, Operations and Chemistry activities as these are governed outside of the

Table 1.2 - 1 Descriptions of Proposed Changes		
Change No.	**Section**	**Description**
		VCSNS EP. Revised department titles in accordance with the proposed change.
111	Part 2, Section O.3.i	Renumbered and removed references to EPIO Personnel as they are incorporated into the CERC in accordance with the proposed change.
112	Annex 1, Section 2	Deleted section as this information duplicates information included in Part 2 of the VCSNS Emergency Plan.
113	Annex 1, Section 4.C	Updated to reflect titles and activation time changes. Removed reference to first aid, search, and rescue in accordance with the proposed change.
114	Annex 1, Section D	Deleted section. Laboratories will be maintained by site chemistry department as required by site Technical Specifications.
115	Annex 1, Section E	Deleted section. First Aid program elements are maintained by the Operations Department and described in operations procedures.
116	Annex 1, Section 4.2	Replaced EOF reference with CERC in accordance with the proposed change.
117	Appendix 4	Revised definitions associated with facility and position changes in accordance with the proposed change.

2.0 TECHNICAL ANALYSIS

This section discusses plant system, design and reliability and technological changes in dose assessment, procedures and training which have been completed to better support on-shift functions and ease operator burden. An on-shift analysis utilizing NEI 10-05, “Assessment of On-Shift Emergency Response Organization Staffing and Capabilities,” [8.27] methodology determined that the proposed changes did not result in conflicting duties for on-shift personnel. Crediting diverse and redundant ECCS design, defense in depth capability through use of non-safety systems, Beyond Design Basis strategies, and the results of an analysis of troubleshooting and repair/corrective action procedures supports extension of augmented response times to 60 minutes and 90 minutes and is a reasonable and prudent means to ensure that no degradation or loss of function results from the proposed changes.

Regarding the proposed EOF relocation, NUREG-0696, “Functional Criteria for Emergency Response Facilities,” [8.9] describes the facilities and systems that nuclear power plant licensees can use to improve emergency response to accidents, such as the EOF, TSC, and OSC. NRC Interim Staff Guidance (ISG) NSIR/DPR-ISG-01, “Interim Staff Guidance – Emergency Planning for Nuclear Power Plants,” [8.7] also provides guidance on the functional criteria for ERFs and on the integrated support these facilities provide to the Main Control Room (MCR). These documents describe an acceptable method for complying with the requirements of 10 CFR 50, Appendix E, Section IV.E.8. Section 3.10 below utilizes the guidance in NUREG-0696, [8.9] to demonstrate the acceptability of the CERC for use as the VCSNS EOF/JIC. Attachment 2 and 3 contain

the affected VCSNS Emergency Plan mark-up and clean pages associated with the proposed changes .

2.1 Plant Systems

2.1.1 Emergency Core Cooling Systems (ECCS)

VCSNS UFSAR, Chapter 3, provides discussion on how VCSNS conforms to Appendix A to Part 50, "General Design Criteria for Nuclear Power Plants." 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 VCSNS ECCS utilizes abundant cooling water that is available to the core at a rate sufficient to maintain the core geometry and assure that the post-accident clad metal-water reaction is limited to less than 1%. The design is adequate to ensure performance of the required safety functions even with the loss of a single component, assuming electric power is available from either the offsite or the onsite electric power sources.

Relative to emergency power for ECCS, Section 3.1.2.2 of the VCSNS UFSAR describes the VCSNS electrical power system conformance with 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.

To conform to this GDC, VCSNS employs onsite and offsite power systems that can independently supply the electric power required for the operation of safety-related systems. The onsite power required to operate Engineered Safety Features (ESF) System equipment is supplied by two diesel generators. The offsite power required to operate safety-related systems is supplied by two independent sources, one from the 230 kV system and one from the 115 kV system. Each source supplies total power requirements for either one or both of the redundant and independent power distribution systems for the ESF Systems.

Normal ESF operating status and deviations from this status, including the ECCS and associated power sources, is controlled by the VCSNS Technical Specifications.

System performance is tracked and trended by the site and has demonstrated 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, safety-system reliability is driven by Maintenance Rule performance criteria.

The robust ECCS capability, performance, reliability, and protection against single point failures provides the basis for removal of maintenance personnel from on-shift.

2.1.2 Plant Computer System

Through the 1980s and 1990s, multiple computer system upgrades have taken place at VCSNS. These upgrades include replacement of the P2500 Computer with the Integrated Plant Computer System (IPCS) which was capable of real-time data collection and monitoring, and a reporting system that acquired data from plant instruments and other plant computer subsystems. The data generated by the IPCS was displayed in the MCR, TSC, and EOF and interfaced with the Data Display System (DDS) computer for use on the local network.

In 2004, IPCS was replaced with a Windows PC based system. This change increased computing power and computer memory, and includes a system storage capacity to allow for more effective display of information.

Benefits of the upgraded system include:

- Graphing and trending capabilities
- Historical data recording and retrieval through the Database Display System (DDS)
- Includes processes for ERDS and SPDS
- Design provides for a high degree of reliability through use of redundant system processes
- Uninterruptable Power Supplies are installed on Plant Computer servers

2.1.3 Dose Assessment

For on-shift dose assessors, an automatic data feed from the Integrated Plant Computer System (IPCS) 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 IPCS have been developed that obtain and monitor 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

Previous primary dose assessment capability during the early 1980's was based on Emergency Assessment and Response System (EARS). EARS was installed on a limited number of HP 9845 computers, including one in the TSC and one in the EOF. The dose calculation of whole body and child thyroid dose used a segmented gaussian plume model. Requiring manual input, source term was calculated from post-accident sample analysis, grab samples, plant vent monitor, containment purge monitor, main steam line monitors, containment leakage information, and FSAR based default assumptions. A manual back-up calculation method was provided for cases where the EARS was not available. Dose Assessment originating from on-shift Control Room personnel was based on nomograms. In 1988, EARS was replaced with the Emergency Dose Assessment Program (EDAP). EDAP used a straight line gaussian plume model, requiring manual input of radiation monitor and meteorological data. Source term mixture was based on FSAR accident analysis assumptions. Capability for dose assessment using back calculation of field team surveys and analysis was also provided.

During 2009, the Meteorological Information and Dose Assessment System (MIDAS-NU), a Windows based PC application, was approved for use on site. Calculated dose rates and integrated dose for whole body and adult thyroid were based on plume shine, ground shine, and inhalation, and provided ingestion pathway dose out to fifty miles. The dose

calculation utilized source term from FSAR design bases accident analysis descriptions. The MIDAS-NU dose model utilized two dispersion models. The first model was based on a time dependent variable trajectory Gaussian plume model that enables the plume direction and location to vary every fifteen minutes as weather conditions change. The second model, used for back calculation from field measurements, was simplified, estimating transport and dispersion in a uniform wind field with no changes in wind speed or direction. This software provided capability for automatic input of basic meteorological data and radiological data from the plant computer system or manual input by the user. Additional data was input by the user to complete the dose assessment calculation. MIDAS-NU ran on PCs located in the HP Count Room, EOF and TSC adjacent to the Control Room.

Current on-shift dose assessment

In 2014, VCSNS implemented an upgrade to MIDAS-NU. The upgrade included use of an event tree to determine isotopic mixtures used in dose calculations based on NUREG-1228, [8.21] and RTM-96, [8.22] guidance as well as the capability to project dose for multiple accidents. Additionally, the use of an automatic feature for auto-collection of meteorological and radiation monitor data was implemented.

MIDAS-NU software is periodically tested and provided, at a minimum, on dedicated workstations in the HP Count Room, EOF, and the TSC adjacent to the Control Room to ensure dose assessment capability. In addition, MIDAS-NU software can be run from any computer that has been loaded with the MIDAS-NU software. Meteorological and radiation monitor data is automatically retrieved from the plant computer or input manually if data is not available from the plant computer or is suspect. If manual entry of data is required, the data can be 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 system status. This dose assessment process is utilized by on-shift and augmented responders. The automated input of meteorological and radiological data into the MIDAS software, in conjunction with the menu driven data input methodology, supports performance of timely and accurate dose projections by the on-shift and augmented dose assessors.

2.2 Training Improvements

2.2.1 Operations Training

Training is used to strategically drive and sustain improved performance at VCSNS and is administered through the application of the Systematic Approach to Training (SAT) to ensure that accredited training is conducted in accordance with industry-accepted standards in INPO ACAD-02-001, [8.25] “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 control room 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.

2.2.2 Shift Technical Advisor (STA) Training

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 Shift Manager with operability, risk and reportability determinations. The Shift Technical Advisor (STA) training program was developed to train the STA as an advisor to the control room team in accordance with the guidelines of NUREG-0737 [8.23]. In 1990, INPO developed additional training guidelines as detailed in INPO 90-003, [8.32] "Guidelines for Training and Qualifications of Shift Technical Advisors." In 2014, INPO issued updated STA Training Guidance, INPO ACAD 14-002, [8.33] "Guidelines for Training and Qualifications of Shift Technical Advisors," which incorporated industry experience and addressed the STA role in Beyond Design Basis strategies. The site training procedure describes the content of simulator training for the role of the STA.

2.3 Procedure/Process Improvements

VCSNS utilizes emergency response and supporting procedures developed in accordance with NUREG-0737, [8.23] and 0737, Supplement 1 [8.24]. The development process was based on direct analysis of accidents and transients. The conditions directed by NUREG-0737, [8.23] included needs analyses based on events contained in the Final Safety Analysis Report, loss of instrumentation busses, and natural phenomena such as earthquakes, floods, and tornadoes.

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

VCSNS EOPs have been improved through incorporation of internal operating experience and industry initiatives since the original emergency plan approval. Current EOPs use a symptom-based approach that demands less assessment and interpretation of plant conditions by the operating crews. The EOPs interface with the Integrated Plant Computer System (IPCS) allows for electronic monitoring of Critical Safety Function Status Trees (CSFSTs) which graphically display plant conditions relative to limits or required actions and provides a recommendation regarding which EOP applies. Overall,

the improvements made to EOP procedures greatly reduce the operator's reliance on the emergency response organization during the initial phases of any event.

The current EOP/AOP procedures support a broad range of events within the design basis and the current event response procedures were developed in accordance with NUREG-0899, [8.26] "Guidelines for the Preparation of Emergency Operating Procedures". These procedures implement a function-based program to assist in mitigating the consequences of a broad range of accidents and equipment failures. These procedures are indication based and direct the Operations crew through a sequence to determine equipment availability to maintain the plant in a safe condition regardless of the specific event.

2.3.2 Emergency Plan Implementation Procedures

In 2009, VCSNS updated the classification methodology to NEI 99-01, Revision 5 [8.28]. VCSNS further updated EALs in 2015 to NEI 99-01, Rev 6 [8.29]. These EALs were approved by the NRC via letter dated April 13, 2015 [8.6]. The current VCSNS EALs contain 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. The current EALs allow the on-shift operators to focus on event mitigating actions without the aid of the emergency response organization during the initial phases of any event. Additionally, IPCS includes visual and audible alarm indications for Radiation Monitors that correspond to EAL criteria.

2.3.3 Beyond Design Basis

The Beyond Design Basis measures provide additional capabilities supporting the on-shift staff based on the assumption that the site could be isolated for up to six hours. VCSNS has developed BDB and FLEX Strategies in accordance with NEI 12-06, "Diverse and Flexible Coping Strategies (FLEX) Implementation Guide," [8.30] in order to provide protection against a broad range of extreme external hazards. Site specific assessments of a broad spectrum of possible external hazards were completed in accordance with Appendix B of NEI 12-06, [8.30]. The strategies resulting from the site-specific assessments provided greater diversity and flexibility to cope with a wider range of potential damage states.

The FLEX procedures utilize the pre-developed engineering strategies from the NEI 12-06, [8.30] assessment to provide alternate core cooling designed for use by the minimum administrative level staff with the assumption that the site will be inaccessible for up to six hours. The FLEX procedures have been validated using the minimum administrative level staff established to meet the requirements of NEI 12-01, "Guideline for Assessing Beyond Design Basis (BDB) Response Staffing and Communications Capabilities." [8.31] The proposed on-shift staffing described in this LAR will not impact the established minimum administrative level staffing. Additionally, a detailed procedural analysis supporting the

proposed changes in this LAR confirmed the diagnostic steps in the EOPs can be performed by the proposed on-shift staff.

Sample scenarios evaluated during the staffing analyses included a large break loss of cooling accident (LBLOCA) and station blackout (SBO) with extended loss of AC power. The scenarios assumed that the event occurred during off-hours with only on-shift staff available for response.

For the LBLOCA event there is a loss of offsite power with emergency diesels available and the initiation of safety injection (SI). The response by Operations during the first 90 minutes via EOPs is to address the SI through implementation of manual actions and transition to FRP FR-P.1, "Response to Imminent Pressurized Thermal Shock Condition," with monitoring of critical safety function status. The FRP provides the steps needed to effectively integrate the strategy.

Further supporting the on-shift staffing analysis meeting the requirements of NEI 12-01, [8.31] DESC validated the ability of the isolated on-shift staff to implement strategies and documented in a detailed FLEX Validation Technical Report, [8.34] and in accordance with the requirements of NEI 12-06, "Diverse and Flexible Coping Strategies (FLEX) Implementation Guide", Appendix E [8.30]. The validation was intended to provide reasonable confidence that required tasks, manual actions and decisions for FLEX strategies are feasible and can be executed within the constraints identified in the Overall Integrated Plan (OIP) / Final Integrated Plan (FIP) for Order EA-12-049 [8.35].

The detailed procedural analysis performed for this submittal, the on-shift staffing analyses performed to validate FLEX strategies, and the detailed FLEX Validation Technical Report [8.34] performed by DESC provides reasonable assurance that the diagnostic aspects of troubleshooting necessary to ensure the plant is maintained in a safe condition can be performed by the proposed on-shift staff during the first 90 minutes after an emergency declaration of an Alert or higher.

2.3.4 Procedure/Process Improvement Validation

VCSNS performed detailed procedural analyses to validate the effectiveness of the proposed procedural changes identified to support the request for extended augmentation times.

2.3.4.1 Performance Based Procedure Analysis

A performance-based analysis of applicable procedures and their bases was completed to provide the technical justification described in RIS 2016-10 [8.2]. This analysis included VCSNS 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 an emergency declaration of an Alert or higher.

The procedure analysis demonstrated on-shift personnel were able to perform required diagnostic activities for the first 90 minutes. The applicability to the specific functions addressed in NUREG-0654, Revision 2, [8.1] are addressed individually in Section 3, Functional Analysis.

2.3.4.2 Beyond Design Bases Analysis

NEI 12-01 [8.31] Guideline for Assessing Beyond Design Basis Response Staffing and Communications Capabilities

The proposed on-shift staffing described in this LAR will not impact the established minimum administrative level staffing used in the NEI 12-01, “Guideline for Assessing Beyond Design Basis (BDB) Response Staffing and Communication Capabilities” [8.31] assessment, and the capability for successful implementation of FLEX strategies is maintained.

FLEX Validation Technical Report VC-Report-000-TR00080-007 [8.34]

As discussed in Section 2.3.3, DESC validated the ability of the isolated on-shift staff to implement strategies as documented in a detailed FLEX Validation Technical Report, [8.34] and in accordance with the requirements of NEI 12-06, “Diverse and Flexible Coping Strategies (FLEX) Implementation Guide”, Appendix E [8.30]. The validation was intended to provide reasonable confidence that required tasks, manual actions and decisions for FLEX strategies are feasible and can be executed within the constraints identified in the Overall Integrated Plan (OIP) / Final Integrated Plan (FIP) for Order EA-12-049 [8.35].

The validation process was focused on assuring confidence in the reliability of the actions required. The validation process included specific analysis of actions requiring initiation within the six-hour period when the site is anticipated to be inaccessible. The validation process included:

- Simulated Scenario – A timed validation method using a simulator or mock-up to validate a decision or action in a procedure/guideline.

- In-plant Timed Walkthroughs and/or Timed Demonstrations – A timed validation method where procedure/guideline performance is simulated by walking through the procedure/guideline steps at the locations specified in the procedure/guideline and/or by demonstrating the action through the physical deployment of equipment, if appropriate. No manipulation of installed plant equipment is required.

- Reasonable Judgment – A validation method used to estimate the time required to accomplish a portion of a Timed Sensitive Action (TSA), where Simulator and In-plant Timed Walkthrough methods are not practicable for the task to be performed due to safety of plant/personnel concerns. If used, Level A reasonable judgment should be based on prior performance of similar tasks or evaluations. A TSA cannot be validated solely with Level A Reasonable Judgment.

Equipment necessary to accomplish each FLEX strategy was deployed from its storage location and staged at its designated staging point. Any connectivity challenges were identified in the Station's corrective action program and were resolved prior to the required NRC Order compliance date.

The FLEX Validation Technical Report [8.34] demonstrated, with reasonable confidence, the station's ability to execute individual FLEX strategies. Each validation demonstrated the ability to execute individual FLEX strategies with sufficient margins to respond to unforeseen challenges.

2.4 Technical Summary

The sections under 2.0 described the following:

- The improved on-shift processes
- Diverse and redundant ECCS design
- Improved access to plant information due to improvements in the Plant Computer System
- Improvements in dose assessment capabilities
- Enhanced training for on-shift staff
- Procedural/process improvements
- Development and deployment of Beyond Design Basis processes

In summary, this LAR concludes that VCSNS defense in depth capability is sufficient to support the extension of plant augmentation times. Plant system design and reliability, improvements to software, training, and procedures, and the development and implementation of beyond design basis strategies have reduced burden on on-shift staff in responding to potential emergencies. Analyses of procedures and required staff responses, including the validation of FLEX strategies in accordance with NEI 12-06, Appendix E [8.30] requirements, supports the extension of augmented response times and confirms that on-shift personnel will remain capable of implementing response strategies without conflicts in on-shift assignments. These analyses ensure that the diagnostic aspects of troubleshooting necessary to ensure the plant is maintained in a safe condition can be performed by the on-shift staff until augmented.

3.0 FUNCTIONAL ANALYSIS

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

The results of the function analysis for the major EP functional areas as described in NUREG-0654, Revision 1, [8.3] and Revision 2, [8.1] Table B-1 are provided below. In addition, NUREG-0696, [8.9] as updated by NSIR/DPR-ISG-01, [8.7] "Emergency Planning for Nuclear Power Plants", provides guidance for complying with 10 CFR 50, Appendix E, Section IV.E.8. The information provided below addresses this guidance to demonstrate acceptability of the proposed EOF's attributes with respect to VCSNS.

In general, the analysis is organized in three parts to provide details related to each of the areas:

- ◊ VCSNS Emergency Plan, Revision 5
- ◊ The current VCSNS Emergency Plan
- ◊ The proposed VCSNS Emergency Plan

3.1 Plant Operations and Assessment of Operational Aspects

NUREG-0654, Revision 1, [8.3] assumes the function of plant operations and assessment of operational aspects is performed by on-shift staff throughout the emergency. NUREG-0654, Revision 2, [8.1] replaced the Plant Operations and Assessment of Operational Aspects Major Functional Area with Command and Control and Emergency Classifications. Revision 2 placed greater focus on EP Functions performed by plant Operations personnel.

In the proposed change, only plant Operations personnel performing EP functions of classification, notification, core damage assessment and on-shift ERO oversight are included in Table B-1a. On-shift staffing of Operations personnel is maintained under VCSNS Technical Specification (TS) 6.2.2, "Unit Staff." This change is aligned with NUREG-0654, Revision 2, [8.1] Table B-1, as noted in the Table B-1 Comparative Chart, provided in Attachment 4.

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

NUREG-0654, Revision 1, [8.3] 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 after ERFs are activated. NUREG-0654, Revision 1, [8.3] also has a position responsible for evaluation of plant conditions and classification recommendations as an ancillary duty. NUREG-0654, Revision 2, [8.1] identifies a position responsible for overall command and control of the Emergency Response Organization (ERO), Emergency Action Level (EAL) approval and authorization of personnel dose extensions.

◊ In Revision 5 of the VCSNS Emergency Plan, the Shift Supervisor would assume the duties of Interim Emergency Director and would be responsible for emergency response efforts until relieved. Activation of the TSC and OSC was initiated at an Alert

or higher classification and activation of the EOF at the Site Area Emergency (SAE) or higher classification. Augmentation capability to support on-shift staff within 30 and 60 minutes was established. In Revision 65 of the VCSNS Emergency Plan, the Shift Supervisor (SS) position was renamed Shift Manager (SM).

◊ The current VCSNS Emergency Plan maintains the Revision 5 augmentation times and transition of event responsibilities from the Control Room to the TSC at the Alert classification, and subsequently to the EOF upon declaration of a Site Area Emergency or higher classification. The Shift Manager assumes the duties of Interim Emergency Director and is responsible for emergency response efforts until relieved. Activation of the TSC and OSC are initiated at an Alert or higher classification and the EOF at a Site Area Emergency (SAE) or higher classification. Augmentation capability to support on-shift staff within 30 and 60 minutes is required to be established.

◊ The proposed change revises the title of Interim Emergency Director (IED) to Interim Station Emergency Manager (ISEM) to align with Dominion standard ERO titles and maintains event classification as a responsibility of this position. The ISEM also has responsibility for staffing of the TSC and OSC at an Alert or higher classification. The proposed change extends TSC Station Emergency Manager (SEM) and Emergency Operations Manager response times from 60 minutes to 90 minutes. The change also replaces the existing 60-minute EOF response time at a SAE or higher classification with 90-minute response time at the Corporate Emergency Response Center (CERC) at an Alert or higher classification.

Classification

The proposed change extends the timeframe for event classification by the SM/ISEM by 30 minutes. The procedure analysis demonstrated that oversight of the plant is maintained by the Unit Shift Supervisor, allowing the SM/ISEM to maintain focus on event classification. Additionally, the proposed change maintains the Shift Technical Advisor (STA) position for performance of the core damage assessment function and providing support to the SM/ISEM in performing the classification function. The availability of the Unit Shift Supervisor and the STA position provides the support needed to allow the SM/ISEM to perform the Classification function for the first 90 minutes after an event without conflicts.

Command and Control

The proposed change impacts the command-and-control function by adding a definition of ‘facility activation’ for the TSC, OSC and CERC. The proposed change also extends the time during which responsibility for oversight of on-shift ERO and event command and control functions, including PAR development and authorization of personnel dose extensions, will be performed by the SM/ISEM by 30 minutes.

The NRC Emergency Communicator continues to be augmented at 60 minutes and reports to the Control Room to support performance of the Notification/Communication function until it is transferred to the CERC. Likewise, the Dose Assessment Team Leader is augmented at 60 minutes to support the dose assessment function, along with three

(3) RP qualified individuals and one (1) Offsite Monitoring Team that provide support for the radiological assessment functions, as described in section 3.4.

Upon activation of the TSC, OSC and CERC at an Alert or higher classification, typical transfer of State/local Notification and Protective Action Recommendation functions will occur from the Control Room to the CERC while event Classification, Federal Notification and Emergency Exposure Authorization functions transfer from the Control Room and to the TSC. Responsibility for oversight of the ERO in the plant transitions from the Control Room to the OSC.

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, Protective Action Recommendations, 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 positions responsible for oversight of on-shift ERO once transferred from the Control Room.

The proposed definition for facility activation is based on responder availability to perform response actions in each facility and identifies the following required minimum staff positions associated with command and control as noted in revised VCSNS Emergency Plan Figures B-1a, B-1b, and B-1c:

- 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)
- Operations 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 if minimum staff positions are filled. The availability of the on-shift dose assessor and communicator to support Notification, PAR and exposure control for 60 minutes until augmented, and the additional oversight support provided by

the Dose Assessment Team Leader within 60 minutes of an Alert or higher classification, enables performance of command-and-control functions by the SM/ISEM for the initial 90 minutes after an event. This definition continues to be aligned with NSIR/DPR-ISG-01 guidance [8.7].

3.3 Notification/Communication Function

Per NUREG-0654, Revision 1, [8.3] the Notification/Communication function included major tasks to notify licensee, state, local and federal personnel and maintain communications. NUREG-0654, Revision 2, [8.1] Table B-1, maintains the function as described in NUREG-0654, Revision 1 [8.3].

Licensee Notification

◊ Revision 5 of the VCSNS Emergency Plan identified notification of licensee off duty personnel as a responsibility of the Shift Supervisor/Interim Emergency Director (SS/IED). This notification was completed at an Alert or higher classification or when deemed necessary by the SS/IED. In Revision 65, the title of the Shift Supervisor was changed to Shift Manager (SM).

◊ The current VCSNS Emergency Plan maintains the Revision 5 responsibility for ERO notification at an Alert or higher classification.

◊ For the proposed change, there are no revisions to the performance of ERO notification function.

State, Local and Federal Notification

◊ In Revision 5 of the VCSNS Emergency Plan, state/local and federal notifications were performed by an on-shift individual and augmented by one (1) responder at 30 minutes and two (2) additional 60-minute responders. Through Revision 67, two (2) additional 60-minute responders were added to the augmented response. The addition of the two additional responders was the result of an observation during a 2014 NRC Inspection that identified the notification duty for completion of the Emergency Notification Form (ENF) by Emergency Planning Representatives in the ERO was not described in the VCSNS Emergency Plan.

◊ The current VCSNS Emergency Plan maintains the on-shift and augmented organization for the state/local and federal notification functions as described in Revision 67 with one (1) responder at 30 minutes and four (4) additional 60-minute responders.

◊ The proposed change maintains the on-shift resource for performance of state/local and federal notification functions, and augmented support at 60 minutes by the NRC Emergency Communicator. The proposed change extends the augmentation time of the State/Local Communicator in the CERC to 90 minutes. The NRC Emergency Communicator initially reports to the Control Room to provide support for the on-shift notification function and then transitions to the TSC upon activation of the facility at 90

minutes. Performance of the Notification function was validated during the OSA to ensure there were no conflicting duties for on-shift personnel as a result of the proposed changes.

Additionally, the proposed change revises the responsibilities of the State/Local Communicator in the TSC to include completion of the Emergency Notification Form (ENF), if the CERC is unavailable, and removes the EP Advisor position from this facility. This change aligns with Dominion TSC organizational staffing.

The use of the on-shift resource for performance of notification activities for the first 60 minutes until augmented by the NRC Emergency Communicator ensures there is no loss of capability resulting from extending this on-shift responsibility for an additional 30 minutes. The proposed change is aligned with NUREG-0654, Revision 2, [8.1] staffing for the 60-minute augmented response time for this function.

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

Per NUREG-0654, Revision 1, [8.3] the Radiological Accident Assessment and Support of Operational Accident Assessment functional area includes the Emergency Operations Facility (EOF) Director; Offsite Dose Assessment; Offsite, In-Plant and On-site (Out-of-plant) surveys; and Chemistry/Radiochemistry major tasks. NUREG-0654, Revision 2, [8.1] Table B-1 changed the functions associated with radiological accident assessment to address radiological aspects only.

<u>EOF Director Major Task</u>

Revision 5 of the VCSNS Emergency Plan included simultaneous staffing of the TSC and OSC at an Alert or higher classification with the EOF activated at a SAE or higher classification. Initial direction and coordination of onsite emergency operations functions transitioned from the SS/IED in the Control Room to the ED in the TSC and subsequently to the Emergency Control Officer (ECO) at the EOF. Details regarding Direction and Control of Emergencies are discussed in Section 3.2 of this Attachment.

<u>Offsite Dose Assessment Major Task</u>

◊ In Revision 5 of the VCSNS Emergency Plan, performance of dose assessment on-shift was not specifically addressed. Initial performance of dose assessment was completed by the 30-minute responder. Two (2) EOF dose assessment positions responding at 60-minutes were added to the VCSNS Emergency Plan in Revision 60 as part of the Unit 2 and Unit 3 Combined Operating License Application (COLA). In Revision 62, responsibility for performance of dose assessment by on-shift personnel was added to the VCSNS Emergency Plan, as noted in the VCSNS On-Shift Staffing Assessment.

◊ The current VCSNS Emergency Plan maintains the Revision 62 on-shift and augmented dose assessment responsibilities, with initial performance of dose

assessment being completed by on-shift personnel and by a 30-minute responder. Two (2) EOF dose assessment positions respond at 60-minutes.

◊ The proposed change maintains responsibility for the on-shift dose assessment function as an ancillary duty of an RP qualified individual. The proposed change extends the 30-minute response time to 60-minutes for the augmented Dose Assessment Team Lead position and extends the remaining 60-minute response time for other dose assessment positions to 90-minutes. The Dose Assessment Team Lead serves in a support role for on-shift staff performing of dose assessment and providing oversight of RP qualified individuals responding at 60-minutes.

Radiological dose assessment has benefited from technological advances, as described in Section 2.1.3 of this attachment, that make it simpler and less time consuming. Recent improvements in dose assessment capability have resulted from the implementation of the MIDAS computer code, which includes an expanded isotopic library, enhanced user interface and additional output reporting capabilities. These improvements provide additional support for extending performance of this function by the on-shift dose assessor by 30 minutes.

Given the technical improvements in dose assessment capabilities, performance of this function by on-shift staff for the first 60 minutes after an event does not result in conflicts in the performance of on-shift responsibilities and is aligned with NUREG-0654, Revision 2, [8.1] Table B-1 guidance.

Offsite Surveys Major Task

◊ In Revision 5 of the VCSNS Emergency Plan, Offsite Surveys were initiated at an SAE or higher classification by two (2) 40-minute and two (2) 60-minute augmented responders.

◊ The current VCSNS Emergency Plan maintains the Revision 5 requirements for staffing of augmented resources at 40 minutes (with two (2) 40-minute augmented responders) and 60 minutes (with two (2) 60-minute augmented responders) and dispatch of offsite monitoring teams after declaration of an SAE or higher classification.

◊ In the proposed change, dispatch of the two (2) Offsite Monitoring Teams (OMTs) is extended by 20 minutes and 30 minutes respectively and occurs at an Alert or higher classification rather than at an SAE or higher classification. The dispatch of OMTs at an Alert or higher classification, combined with improvements in monitoring capability as provided by the IPCS discussed in Section 2.1.2 and the use of updated dose assessment software as described in Section 2.1.3 of this attachment, provides the means for tracking potential radioactive releases in the early stages of an event and serves as the basis for extending the augmentation response times from 40 minutes and 60 minutes to 60 minutes and 90 minutes. The proposed change is aligned with NUREG-0654, Revision 2, [8.1] Table B-1 staffing for the environmental monitoring function.

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

◊ Revision 5 of the VCSNS Emergency Plan identified one (1) 30-minute and one (1) 60-minute augmented responder who were responsible for performance of Onsite (out-of-plant) surveys. An on-shift HP Specialist was responsible for performance of In-plant surveys, augmented by one (1) 30-minute and one (1) 60-minute responder.

◊ The current VCSNS Emergency Plan maintains the Revision 5 requirement for performance of on-shift and augmented Onsite (out-of-plant) and In-plant surveys with one (1) 30-minute and one (1) 60-minute augmented responder responsible for performance of Onsite (out-of-plant) surveys. An on-shift HP Specialist is responsible for performance of In-plant surveys, augmented by one (1) 30-minute and one (1) 60-minute responder.

◊ The proposed change aligns the Onsite (out-of-plant) and In-plant functions and provides for augmented response by three (3) RP qualified individuals at 60-minutes and three (3) additional RP qualified individuals at 90-minutes at an Alert or higher classification.

Improvements in technology allow for remote monitoring of plant radiological conditions in key areas by on-shift RP qualified personnel. This remote monitoring network provides for easy access to plant area radiation data and allows on-shift RP qualified personnel to quickly provide radiological information to the ISEM/SM, including changes in radiological conditions that could impact response activities. The improvements have 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).

The RP qualified individual, while monitoring in-plant conditions, is also able to track and trend radiological conditions in most key areas. Access to this information reduces the number of physical surveys needed in the plant prior to the arrival of augmented resources.

As a result, extending augmented response times from 40 minutes and 60 minutes to 60 minutes and 90 minutes does not adversely impact radiological monitoring capability and is aligned with NUREG-0654, Revision 2, [8.1] Table B-1 guidance.

Chemistry/Radiochemistry Major Task

◊ Revision 5 of the VCSNS Emergency Plan did not address performance of on-shift chemistry functions. Initial performance of chemistry functions was performed by one (1) 40-minute and one (1) 60-minute augmented responder. In Revision 26, an on-shift Chemistry position was added to the Staffing Requirements to better align the VCSNS Emergency Plan with NUREG-0654, Revision 1, [8.3] Table B-1.

◊ The current VCSNS Emergency Plan maintains the Revision 26 requirement for one (1) on-shift Chemistry Technician as well as augmentation by one (1) additional Chemistry Technician at 60 minutes.

◊ The proposed change removes the Chemistry position and references to performance of chemistry sampling from the VCSNS Emergency Plan as sampling

activities are controlled and governed by other station processes and requirements not associated with the emergency plan. Chemistry sampling results will continue to be used to inform emergency classification decisions as before. These changes are aligned with the guidance contained in NUREG-0654, Revision 2, [8.1] Table B-1.

3.5 Plant System Engineering, Repair and Corrective Actions Functions

Per NUREG-0654, Revision 1, [8.3] the Plant System Engineering, Repair and Corrective Actions functional area includes Technical Support and Repair and Corrective Actions Major Tasks. NUREG-0654, Revision 1, [8.3] 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

◊ Revision 5 of the VCSNS Emergency Plan included a Shift Technical Advisor (STA) position who advised the Shift Supervisor on operations activities and provided engineering support prior to staffing of the TSC. The position was augmented at 30 minutes by the Core Engineer and at 60 minutes by a Mechanical and Electrical Engineer. In Revision 26, the 30-minute response time for the Core Engineer was revised such that the Core Damage Assessment (CDA) function remained with the STA until the Core Engineer arrived. The change was approved by NRC Region II Letter, dated August 21, 1990 [8.8].

◊ The current VCSNS Emergency Plan maintains the Revision 26 augmentation time as approximately 30 minutes for the Core Engineer position. Augmentation time of the Mechanical and Electrical Engineer remains unchanged at 60 minutes. The Core Damage Assessment (CDA) function remains with the Shift Technical Advisor (STA) until the Core Engineer arrives.

◊ 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 TSC Reactor Engineer, from approximately 30 minutes to 90 minutes and extends the Mechanical Engineer and Electrical Engineer response times from 60 to 90 minutes. To ensure continued performance of the Core Damage Assessment (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 on-shift STA with core damage assessment capability that is functionally equivalent to that used by the Reactor Engineer in the TSC.

As discussed in Section 2.3.3 and 2.3.4.2, the FLEX Validation Technical Report [8.34] demonstrated, with reasonable confidence, the station's ability to execute individual FLEX strategies. Each validation plan demonstrated ample margin to accomplish the strategy with sufficient margin to respond to unforeseen challenges.

The combination of indication-based Emergency Operating Procedures and application of Beyond Design Basis and FLEX strategies eliminate the need for Electrical or

Mechanical Engineering resources prior to the proposed augmentation times. This conclusion has been validated via the detailed procedural analysis conducted to support this proposed change and is further supported by on-shift staffing analyses.

Repair and Corrective Actions Major Task

◊ Revision 5 of the VCSNS Emergency Plan included Mechanical Maintenance and Instrument and Control (I&C) Technician on-shift positions. These positions were augmented by an I&C Technician at 40 minutes, and one (1) Mechanical Maintenance, one (1) Radwaste Operator, two (2) Electrical Maintenance and one (1) additional I&C Technician at 60 minutes after an Alert or higher classification. In Revision 27, an Electrical Maintenance position was added as a 30-minute responder and removed from the 60-minute response column. This change was made to better align 30-minute and 60-minute augmented response with NUREG-0654, Revision 1, [8.3] Table B-1. In Revision 62, one Electrical Maintenance and one Mechanical Maintenance position were added to the on-shift staffing. This change was the result of completion of the NEI 10-05 [8.27] On-Shift Staffing Analysis.

◊ The current VCSNS Emergency Plan maintains the Revision 62 on-shift and 30-minute and 60-minute augmented response at an Alert or higher classification. On-shift staff includes one (1) Electrical, two (2) Mechanical Maintenance, and one (1) Instrument and Control (I&C) Technician positions. These positions are augmented by one (1) Electrical Maintenance position as a 30-minute responder, one (1) I&C Technician as a 40-minute responder, and one (1) Mechanical Maintenance, one (1) Radwaste Operator, one (1) Electrical Maintenance and one (1) additional I&C Technician as 60-minute responders at an Alert or higher classification.

◊ The proposed change removes the reference to performance of maintenance activities by on-shift personnel 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 Section 2.3.3 and 2.3.4.2, the FLEX Validation Technical Report [8.34] demonstrated, with reasonable confidence, the station's ability to execute individual FLEX strategies. Each validation plan demonstrated ample margin to accomplish the strategy with sufficient margin to respond to unforeseen challenges.

The detailed procedural analysis performed for this submittal, supported by the on-shift staffing analyses performed to validate FLEX strategies and the detailed FLEX Validation Technical Report [8.34] performed by DESC, ensure that the diagnostic aspects of troubleshooting necessary to ensure the plant is maintained in a safe condition can be performed by the proposed on-shift staff until augmented.

The combination of the indication-based Emergency Operating Procedures and the application of Beyond Design Basis and FLEX strategies eliminate the need for Electrical or Mechanical Maintenance Technician resources prior to the proposed augmentation times. This conclusion has been validated via the detailed procedural analysis conducted to support this proposed change and is further supported by on-shift staffing analyses.

3.6 Protective Actions (In-Plant) Function

Per NUREG-0654, Revision 1, [8.3] 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, [8.3] Table B-1 notes that HP Technician expertise may be provided by shift personnel assigned other functions. NUREG-0654, Revision 2, [8.1] Table B-1 combined the Protective Action function with the Radiation Protection function.

◊ Revision 5 of the VCSNS Emergency Plan provided for performance of in-plant protective actions as an ancillary duty of the on-shift HP Specialist. The in-plant protective action function was augmented by one (1) additional HP Specialist at 30 minutes and two (2) additional HP Technicians at 60 minutes.

In Revision 26, an additional on-shift position and a 30-minute response position was added in support of this function. The change was made to better align the site on-shift and augmented response with NUREG-0654, Revision 1, [8.3] Table B-1.

◊ The current VCSNS Emergency Plan maintains the on-shift and augmented RP response as stated in Revision 26 of the VCSNS Emergency Plan. It provides in-plant protective actions as an ancillary duty of the on-shift HP Specialists. These positions are augmented by two (2) additional HP Technicians at 30 minutes and two (2) additional HP Technicians at 60 minutes.

◊ The proposed change combines the Protective Action and Radiological Assessment functions and utilizes the two (2) on-shift RP qualified individuals for performance of these tasks as noted in NUREG-0654, Revision 2, [8.1] Table B-1 and extends the response time for additional RP qualified individuals from 30 and 60 minutes to 60 minutes and 90 minutes after declaration of an Alert or higher classification.

The performance of access control and dosimetry activities are primarily completed using self-reading dosimeters (SRDs) which are obtained prior to entry into radiologically controlled areas (RCA). The type used is an alarming electronic dosimeter (ED). Radiation work permits (RWP), including one specifically for use by Operations during radiological emergencies, establish the necessary preset alarms for the SRDs. The access control system provided at the RCA is used by individuals to log into the RCA, verify SRD operation, check for errors, and ensure the SRD has been calibrated. Additionally, the system provides the user an opportunity to verify RWP setpoints and ensures appropriate dose margin. The proposed changes are aligned with NUREG-0654, Revision 2, [8.1] Table B-1 guidance.

3.7 Firefighting Function

The Firefighting Function is not identified as an EP Function in NUREG-0654, Revision 2 [8.1].

Per NUREG-0654, Revision 1, [8.3] the Firefighting functional area is addressed by use of a Fire Brigade and managed in accordance with site Technical Specifications. NUREG-0654, Revision 2, [8.1] Table B-1 does not address the firefighting function as this is performed under the site Fire Protection Plan.

◊ In Revision 5, of the VCSNS Emergency Plan, Fire Fighting response by on-shift personnel was the responsibility of the Fire Brigade in accordance with site Technical Specifications. Augmented support was provided by offsite resources and was available as needed.

◊ The current VCSNS Emergency Plan maintains the Revision 5 requirement for on-shift Fire Brigade members in accordance with site Technical Specifications, as well as augmentation by local fire firefighting support resources.

◊ The proposed change removes the reference to the Firefighting function in Table B-1a as this is addressed under the VCSNS Fire Protection Program. This change is aligned with the guidance provided in NUREG-0654, Revision 2, [8.1] Table B-1.

3.8 Rescue Operations and First-Aid Function

The Rescue Operations and First-Aid Function is not identified as an EP Function in NUREG-0654, Revision 2 [8.1].

NUREG-0654, Revision 1, [8.3] Table B-1 notes that this function may be provided by shift personnel assigned other functions. NUREG-0654, Revision 2, [8.1] Table B-1 removed rescue operations and first aid as these tasks are outside the purview of the VCSNS Emergency Plan.

◊ Revision 5 of the VCSNS Emergency Plan provided for first-aid treatment of injured personnel by qualified on-shift personnel as an ancillary duty. Search and rescue activities were performed by first-aid and fire brigade personnel.

◊ The current VCSNS Emergency Plan maintains this commitment through the use of on-shift First-Aid Responders. First-aid treatment for injured personnel is provided by qualified on-shift personnel as an ancillary duty. Search and rescue activities are performed by first-aid and fire brigade personnel.

◊ The proposed change removes the reference to the Rescue Operations and First-Aid function in Table B-1a as this is a responsibility of the site Operations and is maintained in accordance with Operations procedures. This change is consistent with guidance provided in NUREG-0654, Revision 2, [8.1] Table B-1.

3.9 Site Access Control and Personnel Accountability Function

The Site Access Control and Personnel Accountability Function is not identified as an EP Function in NUREG-0654, Revision 2 [8.1].

NUREG-0654, Revision 1, [8.3] the Site Access Control and Personnel Accountability functional area is addressed by Security personnel in accordance with the Site Security Plan.

◊ Revision 5 of the VCSNS Emergency Plan provides for on-shift Security responders in accordance with the Site Security Plan.

◊ The current VCSNS Emergency Plan maintains the Revision 5 requirement and provides for on-shift Security responders in accordance with the Site Security Plan.

◊ The proposed change removes the reference to the Site Access Control and Personal Accountability function in Table B-1a as this is addressed in the Site Security plan. This change is aligned with guidance provided in NUREG-0654, Revision 2, [8.1] Table B-1.

3.10 Aspects associated with EOF relocation

This change proposes relocation of the existing VCSNS EOF and JIC (in South Carolina) to the Dominion Energy CERC facility in Virginia, abbreviated as "the CERC". The CERC will contain both the EOF and the JIC functions. As specified in NUREG-0696, [8.9] the CERC is the location where the Corporate Emergency Director will direct a staff in evaluating and coordinating the overall company activities involved with an emergency. Activation of the CERC is mandatory upon declaration of an Alert or higher Emergency Classification Level (ECL).

3.10 (a) Proposed Changes

The current VCSNS Emergency Plan describes the emergency response centers with the following details in Part 2, Section H.2, "Emergency Operation Facility," which states:

"The EOF is the location where the ECO will direct a staff in evaluating and coordinating the overall company activities involved with an emergency. Activation of the EOF is mandatory upon declaration of a Site Area Emergency or higher classification. The EOF is located in Richland County near the intersection of Bickley Road and SC Hwy 176 and is outside the 10 Mile Emergency Planning Zone and greater than 10 miles from the Technical Support Center (TSC). The EOF provides for:

- *Management of overall emergency response*
- *Performance of the non-delegable emergency notification and PAR development and notification functions when in command and control*
- *Notification of appropriate corporate and station management*
- *Coordination of offsite radiological and environmental assessments*
- *Determination of recommended public protective actions*
- *Management of recovery operations from an Alert or higher classification*

• Coordination of emergency response activities with federal, state, and county agencies

The EOF was designed with the following considerations:

• The EOF is provided with access limiting devices when not in use and assigned security personnel during activation to ensure that only authorized personnel are permitted to enter the facility.

• The location provides optimum functional and availability characteristics for carrying out overall strategic direction of VCSNS emergency and support operations, determination of public protective actions to be recommended to offsite officials, and coordination with federal, state, and county agencies.

• It is of sufficient size to accommodate about 50 people including NRC representatives.

• It meets the criteria of NUREG-0696, "Functional Criteria for Emergency Response Facilities" regarding location, structure, habitability, size, communications, instrumentation, data system equipment, power supplies, technical data, records availability, and management. The EOF power is backed with an emergency diesel generator and has an uninterruptable power source to maintain loads during the transfer between power sources.

• It is equipped with reliable voice communications capabilities to the TSC, the Control Room, the NRC, and the state and county EOCs. In addition, the EOF has facsimile, computer transmission, and electronic transfer capabilities.

• Equipment is provided to gather, store, and display data needed in the EOF to analyze and exchange information on plant conditions with the station. The EOF technical data system receives, stores, processes, and displays information sufficient to perform assessments of the actual and potential onsite and offsite environmental consequences of an emergency condition.

• The EOF has ready access (either through hard copies or electronic media) to plant records, procedures, and emergency plans needed for effective overall management of VCSNS emergency response resources.

• It is designed to support a remote TSC and remote OSC in the event of an emergency which limits access to the site."

The proposed VCSNS Emergency Plan, which is provided in Attachment 2 and 3, includes the following details:

Part 2, Section H.2, "Corporate Emergency Response Center," states:

"The CERC is the consolidated emergency operations facility (EOF) and Joint Information Center (JIC) for VC Summer Nuclear Station, North Anna Power Station and Surry 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 location 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. Official company statements to the media are made from a designated location at the CERC utilizing a collaborative platform by the Chief Technical Spokesperson. These company statements are prepared at the CERC."

Part 2, Section H.3, "Alternative Facility When Under Threat of Experiencing a Hostile Action," states:

"The VC Summer facility located at 113 Ballentine Crossing Lane, Irmo SC serves as the Alternative Facility for emergency response staff if the site is under threat of or experiencing a 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 Alternative Facility, working with the CERC organization, provides capability for engineering assessment activities, including damage control team planning and preparation."

Part 2, Section H.4, "Location for Offsite Agency Coordination," states:

"The V.C. Summer Nuclear Operations Building (NOB) is the location made available 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 contacts 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."

Dominion Energy plans to conduct a drill requiring CERC activation to demonstrate VCSNS ERO capability. The drill will be conducted prior to implementation of this amendment request.

The scope of the drill will require coordination of response efforts for events occurring at VCSNS, specifically:

- Staffing and activation of the facility within 90 minutes for an Alert or higher emergency classification,
- Management of overall licensee emergency response,
- Coordination of radiological and environmental assessment,
- Determination of recommended public protective actions,
- Notification to the State of South Carolina,
- Coordination of event, plant, and response information provided to public information staff for dissemination to the media and public,

- Coordination of emergency response activities with Federal, State, and local authorities,

- Obtaining and displaying key plant data and radiological information for VCSNS, and

- Analyzing plant technical information and providing technical briefings on event conditions and prognosis to licensee staff and offsite agency responders for VCSNS.

This drill may be observed by NRC staff and representatives of the Federal Emergency Management Agency (FEMA). Offsite response agencies will be invited to participate or observe. Logistic arrangements will be coordinated with these organizations separately.

3.10 (b) Reason for the Proposed Changes

On January 1, 2019, Dominion Energy South Carolina (DESC) purchased South Carolina Electric and Gas Company (SCEG) which previously owned the Virgil C. Summer Nuclear Station (VCSNS). Corporate governance and support of VCSNS was transferred to the DESC headquarters located in Richmond, Virginia. DESC uses a Corporate Emergency Response Center (CERC) which functions as the consolidated emergency operations facility for North Anna Power Station (NAPS) and Surry Power Station (SPS). The proposed relocation of the VCSNS EOF is expected to have the following positive effects on VCSNS emergency response capability:

- Increased pool of site ERO members available for assignment to other positions in the TSC and the Operational Support Center (OSC)

- Increased efficiency using common practices and procedures in a single facility; and

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

The greater distance of the CERC from VCSNS does not impede implementation of CERC functions by VCSNS or the NRC. Offsite response organization (ORO) plans provide for CERC interface from their respective emergency operations centers (EOCs), primarily the South Carolina State EOC/Joint Information Center (JIC), although a representative may be sent to the CERC. The Chief Technical Spokesperson at the CERC is responsible for providing media briefings and news information to the media. At the Site Area Emergency level and above, VCSNS personnel are assigned as liaisons to the state of South Carolina, Lexington County, Richland County, Newberry County, and Fairfield County EOCs, when they are activated. Thus, the location of the proposed EOF does not impede ORO mobilization. Likewise, the time for the NRC Region II Incident Response Site Team to arrive at the CERC should be the same as that needed to travel to the existing Dominion Energy CERC to respond at an event at other Dominion nuclear power plants located in Virginia.

3.10 (c) VCSNS Emergency Plan Background

Revision 2 of the VCSNS Emergency Plan, dated October 1980, established an interim EOF located in an Administrative Office Complex approximately 1000 feet west of the VCSNS reactor building. Safety Evaluation Report (SER) NUREG-0717, "Safety Evaluation Report Related to the Operation of Virgil C. Summer Nuclear Station, Unit 1, Supplement 2," dated May 1981, [8.17] approved the location of the interim EOF and discussed an alternate EOF at the Parr facility approximately 2 miles from the reactor building. The SER also notes commitments regarding emergency response facilities.

Revision 5 of the VCSNS Emergency Plan, dated October 1981, provided updates prior to initial licensing that satisfied remaining open items related to meteorological and dose assessment capability regarding emergency preparedness for VCSNS. Revision 5 did not affect information related to the EOF. Safety Evaluation Report (SER) NUREG-0717, "Safety Evaluation Report Related to the Operation of Virgil C. Summer Nuclear Station, Unit 1, Supplement 3," dated January 1982, [8.18] approved the VCSNS Emergency Plan, Revision 5.

NRC letter dated August 5, 1983, [8.19] approved VCSNC Radiation Emergency Plan, Revision 9, which implemented the EOF in the training center.

Revision 58 of the VCSNS Emergency Plan implemented the current EOF location at 113 Ballentine Crossing Lane in Ballentine, South Carolina.

3.10.1 Functions

(1) Management of overall licensee emergency response

Operation of the CERC will not significantly alter the overall approach to emergency response at VCSNS. The Corporate Response Manager, who is in overall command and control of the Dominion Energy ERO, is the individual authorized to request assistance and resources from responding organizations.

Once it assumes responsibilities, the CERC will be the primary facility for offsite Protective Action Recommendation (PAR) development and notification of designated offsite agencies. Responsibility for event classification, NRC notifications using ENS, and emergency exposure controls will remain in the TSC.

The CERC staff has successfully demonstrated the ability to manage emergency response in several evaluated exercises and numerous drills and exercises during which offsite emergency response organizations have observed and/or participated. Participants have included representatives from the State of Virginia in support of SPS and NAPS emergency responses. DESC has procedures and practices in place for emergency management that will continue to be used after the proposed relocation and consolidation of the VCSNS EOF and JIC at the CERC. While revisions to some EOF-related procedures are anticipated, the consolidation will not alter or adversely affect the overall approach to the emergency response.

(2) Coordination of radiological and environmental assessment

The CERC will coordinate field team activities and perform dose assessments. Offsite environmental monitoring is performed by field monitoring team personnel under the direction of the Dose Assessment Team Leader in the TSC or the Accident Assessment Team in the CERC. The CERC Radiological Assessment Coordinator directs field team radio operator activities and dispatches Offsite Field Team members. VCSNS FMT activities are coordinated with environmental monitoring efforts performed by teams directed by the state of South Carolina.

The ability of the CERC to coordinate field activities and perform dose assessments has been successfully demonstrated in previous drills and exercises for other Dominion nuclear stations.

Communication and dose assessment capabilities are discussed in Section 3.10.6 and 3.10.8 below.

(3) Determination of recommended public protective actions

The ERO staff in the CERC will develop and provide PARs to offsite agencies based upon plant conditions or dose projections. The responsibility for PAR development will be assigned to the CERC Technical Support Manager.

Once approved, and upon implementation of the proposed changes to relocate and consolidate the VCSNS EOF/JIC, the CERC staff will continue to make Protective Action Recommendations (PARs) to offsite agencies based upon VCSNS plant conditions or dose projections. Procedures with plant-specific guidance will continue to be used in making PARs. To address differences in the development of PARs associated with SPS, and NAPS from VCSNS, the appropriate CERC personnel will receive additional training on VCSNS-specific PAR determinations prior to implementing the changes in support of EOF/JIC relocation and consolidation efforts.

(4) Notification of offsite agencies

Upon activation of the CERC, the ERO staff will make notifications to State, and local agencies for VCSNS. These notifications include initial emergency classification level (ECL) declarations, upgrades in the ECL, issuance of or change to PARs, and follow-up notifications. The CERC has enough workstations and personnel designated to communicate with offsite agencies to support communications for more than one site during concurrent activation. Primary and back-up communication methods will be available. Communication capabilities and methods are further described in Section 3.10.6 below.

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

The ERO staff in the CERC will provide event, plant, and response information to the Chief Technical Spokesperson and the Media Briefing Support Team. The Chief Technical Spokesperson will provide media and news information to the media.

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

Staffing for the CERC is addressed in the proposed VCSNS Emergency Plan (Attachment 2 of this submittal), Table B-1a, Staffing Requirements for the VCSNS ERO, and Figure B-1c, CERC Organization. Sections 3.2 through 3.4 above provide justification for EOF functions of command and control, communications, and management and performance of dose assessments and projections.

The CERC will be activated within 90 minutes following the declaration of an Alert or higher classification. Justification for this time frame is provided in Section 2.0.

(7) Coordination of emergency response activities with Federal, State, tribal, and local agencies

The NRC is notified via ENS immediately after notification of the designated offsite agencies listed in the site annex, but not later than one hour after the time one of the ECLs is declared, as required by 10 CFR 50.72(a)(ii)(3). Follow-up NRC notifications are made in accordance with 10 CFR 50.72(c). Responsibility for these notifications is transferred from the VCSNS Main Control Room (MCR) to the TSC where it remains for the duration of the event response. In addition, the TSC and the CERC have the capability of establishing Health Physics Network (HPN) communications with the NRC when requested.

If an incident's severity or uncertainty warrants entry into the NRC expanded activation emergency response mode, it is anticipated an NRC Region II site team may be dispatched to interface with their counterparts in the CERC and elsewhere, e.g., site TSC, South Carolina EOC. Arrangements meeting the 10 CFR 50.47(b)(3) emergency planning standard for accommodating responding organizations exist at the CERC, including a separate conference room in the CERC for the NRC Region II site team. The establishment of a near-site response location for the NRC is described below.

The state and county agencies listed in the VCSNS Emergency Plan are notified within 15 minutes of the initial ECL declaration and ECL upgrades. Interface between the CERC and OROs is primarily via the CERC. The Corporate Response Manager has overall responsibility for providing the interface between VCSNS and outside organizations. As indicated above, field monitoring team activities are coordinated with environmental monitoring efforts performed by teams directed by the state of South Carolina.

(8) Locating NRC and offsite agency staff closer to a site if the EOF is greater than 25 miles from the site

10 CFR 50, Appendix E, Section IV.b, stipulates the following:

"…For an emergency operations facility located more than 25 miles from a nuclear power reactor site, provisions must be made for locating NRC and offsite responders closer to the nuclear power reactor site so that NRC and offsite responders can interact face-to-face with emergency response personnel entering and leaving the nuclear power reactor site. Provisions for locating NRC and offsite responders closer to a nuclear power reactor

site that is more than 25 miles from the emergency operations facility must include the following:

(1) Space for members of an NRC site team and Federal, State, and local responders.

(2) Additional space for conducting briefings with emergency response personnel.

(3) Communication with other licensee and offsite emergency response facilities.

(4) Access to plant data and radiological information; and

(5) Access to copying equipment and office supplies..."

NSIR/DPR-ISG-01 [8.7] also provides a description of the facilities and capabilities that the EOF shall have, including provisions for a near-site facility as follows:

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

"The habitability criteria in Table 2 were retained since the criteria apply only to a primary EOF located within 10 miles of the TSC."

As part of implementation of the proposed change, DESC will make provisions available at the VCSNS Nuclear Operations Building (NOB), so NRC and offsite responders can interact face-to-face with emergency response personnel entering and leaving the nuclear power reactor site.

This location will include space for members of an NRC site team and federal responders; additional space for conducting briefings with emergency response personnel; communication capabilities with other licensee and offsite emergency response facilities; access to plant data and radiological information; and access to copying equipment and office supplies. This location is described in Part 2, Section H.4 of the proposed VCSNS Emergency Plan (Attachment 2).

(9) Obtaining and displaying key plant data and radiological information for each unit or plant the EOF serves

The CERC will have the capability to access key plant parameters from VCSNS. The data acquired from VCSNS can be displayed on screens in the CERC. Screens are available such that information from more than one site can be displayed. See Sections 3.10.7 and 3.10.8 for details.

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

The CERC has the capability to access key plant parameters from VCSNS as described in Sections 3.10.7 and 3.10.8. Knowledge of these parameters allows the CERC staff to assess the severity of an accident, project the accident's course, and provide DESC/VCSNS management with information needed for mitigation, recovery, and PARs. The ERO staff in the CERC includes members who are technically qualified to analyze relevant information from the plant information systems. The CERC is equipped to accommodate licensee staff and offsite agency responders' technical briefings. The CERC has enough workstations to monitor conditions at more than one site simultaneously, and it is equipped with sufficient conference rooms for licensee staff and offsite agency responders' technical briefings. Telephone conferencing capability is available for briefing responders not located in the CERC.

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

DESC will maintain the ability of the CERC to support simultaneous events for at least two (2) sites. The CERC is capable of monitoring and analyzing events at VCSNS and other Dominion sites simultaneously. Enough workstations are available for data retrieval and the facility has adequate display capability to simultaneously present this information to the CERC staff. In addition, the capability is provided to support communications to offsite agencies for more than one event. The ERO augmentation process provides sufficient staff in the event that more than one station is in an ECL requiring CERC activation. When the ERO call-out system is activated, all ERO members are notified to establish adequate coverage of ERO positions at their designated ERFs. With regard to staffing the CERC, ERO personnel at the DESC corporate office, the same location as the CERC, are required to promptly report to their assigned ERF upon activation. Excess personnel that respond may be assigned support responsibilities or be designated as a relief shift.

The CERC currently assumes the functions discussed above for SPS and NAPS during drills, exercises, and actual emergencies. The ERO personnel assigned to the CERC are experienced in the management of emergency response. Also, an advantage of being located near the DESC corporate offices in Innsbrook, Virginia, is that the CERC ERO staff includes the expertise of DESC corporate personnel. This includes important groups such as Fleet Emergency Preparedness, Corporate Engineering, Safety Analysis, and Probabilistic Risk Assessment as well as other individuals with a wide range of expertise.

The CERC staff will receive training on the applicable characteristics of VCSNS prior to implementation of the proposed changes to relocate and consolidate the VCSNS CERC. This training will include instruction on the reactor technologies involved related to VCSNS, differences in the radiological and environmental characteristics of the newly added station, and the determination of PARs. In addition, as with the other stations currently using the CERC, periodic training will be provided in accordance with the DESC Emergency Preparedness Emergency Response Organization (ERO) Training and Qualification Program requirements to maintain proficiency in release path determination, PAR determination, and dose assessment.

Because SPS and NAPS have utilized the consolidated CERC for many years, the CERC staff is experienced in the coordination of emergency response activities with offsite agencies. DESC does not anticipate any adverse impacts associated with coordinating emergency response functions and capabilities after VCSNS is included at the CERC facility.

3.10.2 Location, structure, and habitability

The CERC is located in Dominion's Innsbrook Technical Center (ITC) at 5000 Dominion Boulevard, Glen Allen, Virginia. The straight-line distance from this location to the VCSNS TSC is 312 miles.

The CERC meets the intent of the guidance in NUREG-0696 [8.9] that the building be "well-engineered for the design life of plant." The building is designed to withstand wind speeds up to 120 mph. The building is capable of withstanding wind loads and live loads equal to or greater than those specified in the BOCA National Building Code/1981 [8.20]. The building is in a minimal flood hazard zone which is outside the 500-year flood zone [8.36].

There are no specific NUREG-0696 [8.9] habitability criteria for an EOF located more than 10 miles from a nuclear station and a back-up facility is not required. The CERC is greater than 10 miles from VCSNS. Thus, CERC functions would not be interrupted during radiation releases where it is necessary to recommend protective actions for the public to offsite officials.

Access to the ITC is continually controlled by a security service. The main entrance to the CERC is controlled by a monitored electronic card reader that allows entry to authorized personnel only. When the CERC is activated, these doors may be placed in a mode that allows general access.

3.10.3 Staffing and training

Incorporating the VCSNS EOF/JIC into the CERC will not adversely affect the ability of the CERC to be staffed in a timely manner. The facility will be staffed with experienced personnel from the DESC Corporate office in Innsbrook, Virginia. The CERC staff has demonstrated its ability to staff the CERC in a timely fashion after an event declaration requiring activation during augmentation drills. The CERC staff currently includes personnel to manage overall licensee emergency response, coordinate radiological and environmental assessment, determine recommended public protective actions, and interface with offsite officials. These functions will continue to be performed after the implementation of the proposed relocation and consolidation efforts.

The CERC staff is currently proficient in emergency response for SPS and NAPS. The CERC staff will receive VCSNS-specific training on release in progress determination, release paths, dose assessment, and PAR determination prior to implementation of the changes supporting the relocation and consolidation of the EOF/JIC. The CERC staff will

be trained in the emergency response for VCNS in accordance with the VCSNS Emergency Plan.

This training is similar to SPS and NAPS training. Key decision makers will attend VCSNS-specific training as required based on their prior experience and training. Proper response to a VCSNS emergency will be within the capabilities of the CERC staff. Transferring EOF functions to the CERC will allow VCSNS to better focus station resources on site accident management.

The ERO staff for the CERC is described in Part 2, Section B.5.b of the proposed VCSNS Emergency Plan, and the training program is described in Part 2, Section O. Training for key ERO members supporting VCSNS and other Dominion stations will include station-specific differences related to their roles, e.g., technical data display systems, plume exposure pathway risk jurisdictions, release pathways, station ingress and egress routes, and evacuation time estimates.

3.10.4 Size

The total usable space of the CERC is approximately 5987 square feet. Based on the 75 square foot per person guidance of NUREG-0696, [8.9] this provides enough space for approximately 80 individuals. The expected number of EOF personnel during a dual-station event, including offsite agency responders, will be less than 60.

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

Figure 3.10.4 – 1 Proposed CERC Layout

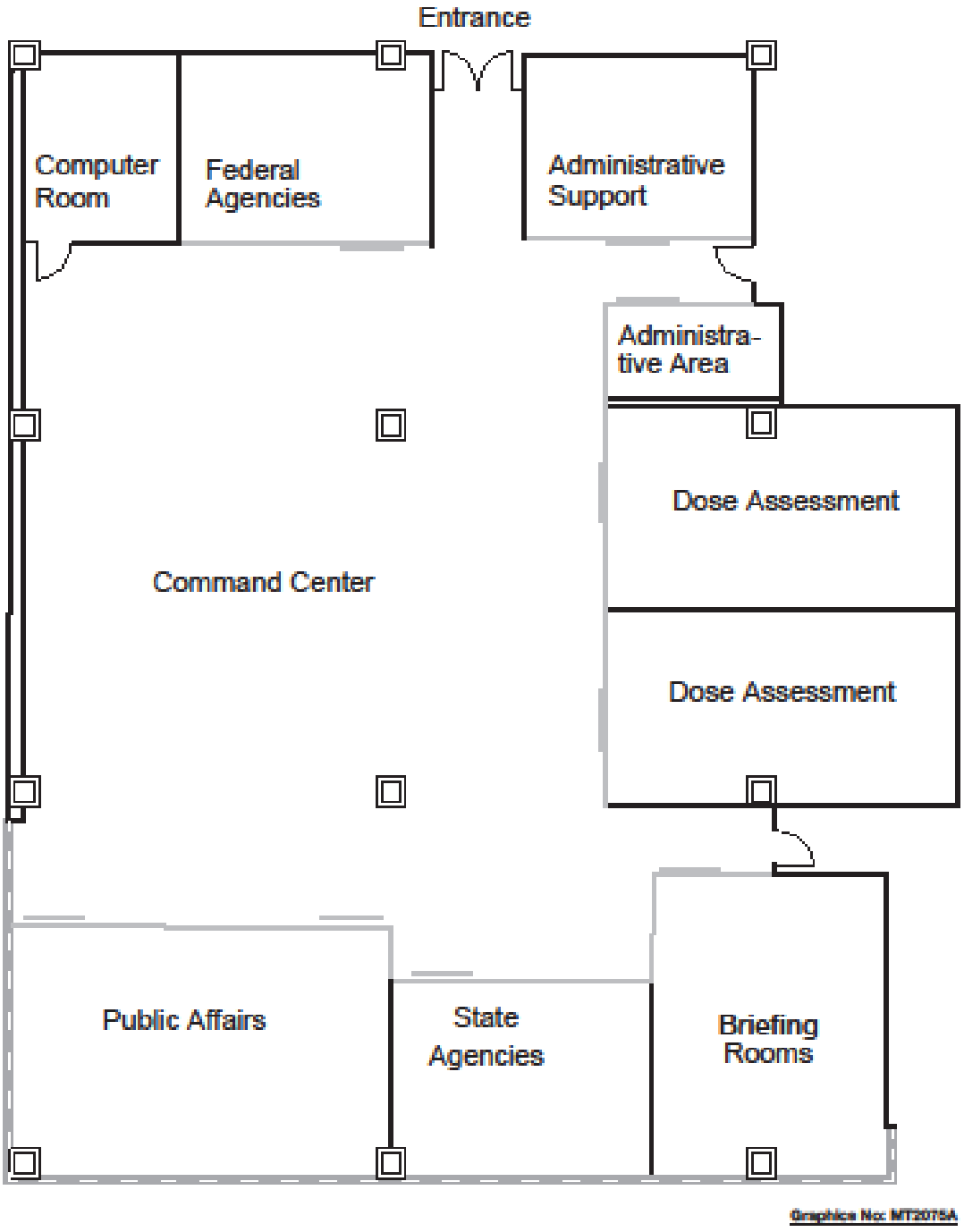


Table 3.10.4 – 1 Description of Proposed CERC Layout

Area	**Description**
Command Center	Main area (approximately 46 ft x 55 ft) with tables for NAPS, SPS, and VCSNS designated for management, intra-facility communications and plant parameter monitoring, common tables for logistics and external affairs functions, table for federal and state representatives, and tables for observers.
Computer Room	Houses Information Technology server equipment, power strips and communications connections (approximately 12 ft x 14 ft).
Federal Agencies	Office area (approximately 15 ft x 20 ft) with conference table, electrical outlets, communications network ports, and screen connection(s). Chairs, a speaker phone, dry erase board, and networked display screen are also in this office area.
Administrative Support	Office area (approximately 14 ft x 17 ft) with location-specific procedures, reference materials and administrative supplies, and multi-function device copier/scanner/printer
Administrative Area	Office area (approximately 7 ft x 14 ft) for use as needed
Dose Assessment (2 rooms)	Office areas (approximately 16 ft x 28 ft) designated for NAPS SPS, and VCSNS. Provided in this area are: • Networked display screens • Multi-function device copier/scanner/printer • Computers
Public Affairs	Office area (approximately 20 ft x 30 ft) with: • Multi-function scanner/printer • Networked display screens • Dry erase board • Computers • TVs
State Agencies	Office area (approximately 15 ft x 20 ft) with conference table having AC plug-ins, power strips and screen connection. Chairs, speaker phone, dry erase board, and networked display screen are also provided in this office area.
Briefing Room	Office area (approximately 20 ft x 22 ft) with: • Dry erase board • Networked display screen • Tables and Chairs

3.10.5 Radiological Monitoring

The CERC is greater than 10 miles from the VCSNS. Consequently, the habitability criteria described in NUREG-0696, [8.9] Section 4.2, Table 2, are not applicable.

3.10.6 Communications

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

- Dominion Energy Virginia (DEV) and DESC installed telephone system (to manage licensee emergency response resources and communications with NAPS, SPS, and VCSNS TSCs) with access to the DEV and DESC internal phone system, public switched network, and long distance.

- NAPS, SPS, and VCSNS Dominion Energy Emergency Notification System (for providing emergency notifications to State and site-specific risk jurisdiction 911 Centers/EOCs).

- Radio systems for communication with NAPS, SPS, and VCSNS field monitoring teams will be available to coordinate radiological monitoring.

- NRC Emergency Telecommunications System telephones (Emergency Notification System, Health Physics Network, Protective Measures Counterpart Link, Reactor Safety Counterpart Link, Management Counterpart Link, and local area network connections are provided by the DEV and DESC communications infrastructure).

- Scanning (e-mail) transmission capability

The emergency communications systems at the CERC are designed to ensure the reliable, timely flow of information between all parties having an emergency response role. The emergency communications system permits simultaneous communications from the Station or CERC to the site-specific risk jurisdiction 911 Centers/local EOCs and the State of South Carolina EOC on a 24-hour per day basis.

Existing commercial telephone service will serve as the designated back-up means of communications in the event of an emergency communication system failure. DEV and DESC have telecommunications capabilities that can provide access to long-distance networks without having to go through a local telephone company switch. An Enterprise Transport Network provides Wide Area Network (WAN) connectivity, dedicated voice communication phone and radio control circuits between station emergency response facilities and the CERC, the Commonwealth of Virginia Emergency Operations Center (VEOC), and the South Carolina Emergency Operations Center. Telephones are provided for the respective federal and state representatives. Multifunction machines are

available in the CERC to support the transmission of information between the emergency response facilities and state, local, and federal authorities.

3.10.7 Instruments, data system equipment, and power supplies

Data acquisition for the CERC is achieved through a secure connection to the plant computer servers. The CERC has access to displays that are representative of the displays in the Control Room via the DEV Wide and Local Area Networks (WAN and LAN). DEV has established an availability goal for the LAN/WAN that exceeds the 0.01 unavailability goal identified in NUREG-0696 [8.9]. The CERC has access to the same data points that are available to the Operators in the Control Room and emergency responders in the TSCs, including the SPDS data points. The video display system in the CERC will display the graphics on screens in the Command Center area.

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

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

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

3.10.8 Technical data and data system

The CERC will have the capability to receive, store, process, and display information needed to perform assessments of actual and potential offsite environmental consequences during an emergency at NAPS, SPS, and VCSNS. A proxy server will allow the display of data points that cover Type A, B, C, D, and E variables discussed in NUREG-0696, [8.9] Section 4.8. In addition, the meteorological variables required for dose assessment will be made available through the proxy server. This data will also be

accessible from a historical database. The CERC dataset includes radiological, meteorological, and other environmental data as needed to:

- Assess environmental conditions
- Coordinate radiological monitoring activities, and
- Recommend implementation of offsite emergency plans

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

3.10.9 Records availability and management

Key reference materials for NAPS, SPS, and VCSNS will be maintained in the CERC. In addition, station design documentation, plant drawings, procedures, etc., are available electronically via the local area network connection.

Examples of the above include:

- Plant Technical Specifications – accessed electronically
- Plant operating procedures – accessed electronically
- Emergency operating procedures – accessed electronically
- Final Safety Analysis Reports – accessed electronically
- Emergency plans – Station emergency plans and State emergency plans (including site specific appendices) – accessed electronically
- Offsite population distribution data – accessed electronically
- Evacuation plans – accessed electronically
- Drawings – accessed electronically

4.0 CONCLUSIONS

The proposed changes continue to support the functional areas of the VCSNS 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, do not adversely affect the site's ability to respond to an event and do not delay performance of maintenance functions.

Re-alignment and extension of RP staffing augmentation response times from a total of 8 RP individuals at 30 and 60 minutes to a total of 6 RP qualified individuals at 60 and 90 minutes for the in-plant, onsite (out-of-plant), and protective action functions as described in NUREG-0654, Revision 2, [8.1] Table B-1, does not adversely affect the performance of radiological assessment or protective action functions associated with event response. DESC has incorporated new technologies in installed in-plant monitoring capability and the use of telemetry ensures the emergency response functions identified in the VCSNS 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 sampling teams are dispatched by 30-minutes; however, sampling teams will be dispatched at an Alert or higher classification rather than at a Site Area Emergency or General Emergency. Initiation of environmental sampling 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 not performing EP functions and removal of chemistry activities controlled and governed by other station processes and requirements not associated with the emergency plan is aligned with NRC guidance. Similarly, removal of references to admin/support positions are included in the proposed change. These positions and functions will be maintained in the VCSNS Emergency Plan Implementing Procedures (EPIPs).

The implementation of FLEX strategies utilizing pre-engineered responses and pre-staged equipment demonstrated, as shown in the FLEX Validation Technical Report [8.34], that on-shift personnel are able to initiate diagnostic activities for the first 90 minutes. Additionally, there will be no technical support or corrective actions activities requiring additional mechanical or electrical engineering or maintenance expertise during the 90-minute timeframe once the identified procedure revisions and training are completed. The result of the FLEX Validation Technical Report [8.34] provides the bases for extension of augmented response to 60 and 90 minutes with no resulting conflicts in performance of on-shift tasks.

The proposed relocation of the VCSNS EOF and JIC to the Dominion Energy CERC continues to provide adequate emergency facilities and equipment for supplying direction and exercising control during an emergency.

Therefore, the proposed augmentation time changes and the use of the CERC for the EOF and JIC will continue to ensure the VCSNS Emergency Plan meets 10 CFR 50.54(q)(2), the requirements of 10 CFR 50, Appendix E, and the planning standards of 10 CFR 50.47(b).

5.0 REGULATORY ANALYSIS

5.1 Applicable Regulatory Requirements/Criteria

10 CFR 50.47(b) specifies the planning standards that the onsite and offsite emergency response plans must meet for NRC staff to make a finding that there is reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency. Specifically,

10 CFR 50.47(b)(1) states: *(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.*

10 CFR 50.47(b)(2) states: *(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 VCSNS Emergency Plan includes onsite and offsite emergency response plans that meet the requirements listed in 10 CFR 50.47(b)(1) and (2). This LAR proposes to remove maintenance personnel from on-shift, extend staff augmentation response times from 30/40/60 minutes to 60/90 minutes, and relocate the VCSNS EOF and JIC to CERC. The VCSNS Emergency Plan will continue to have onsite and offsite emergency response plans that meet 10 CFR 50.47(b).

10 CFR 50.47(b)(3) requires that arrangements to accommodate State and Local staff at the licensee's EOF have been made. Compliance with this requirement is discussed in Section 3.10.1.(7) above.

10 CFR 50.47(b)(8) requires that adequate emergency facilities and equipment to support the emergency response are provided and maintained. Following approval and implementation of the proposed changes involving the relocation and consolidation of VCSNS EOF/JIC, VCSNS will still have an EOF from which effective direction can be given and effective control can be exercised during an emergency. Furthermore, the CERC meets the EOF criteria in NUREG-0696, [8.9] as discussed in this attachment.

10 CFR 50.47(b)(9) requires that adequate methods, systems, and equipment for assessing and monitoring actual or potential offsite consequences of a radiological emergency condition are in use. This requirement is encompassed in the EOF criteria in NUREG-0696, [8.9] as discussed in this attachment.

Section 4 of NUREG-0696 [8.9] provides guidance on the overall criteria for the EOF:

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

Compliance with these criteria, as applicable to the proposed change, is discussed in Section 3.10.1 – 3.10.9 above.

NUREG-0696 [8.9] expands on the Function criteria by providing the following requirements (this is the expanded list included in NSIR/DPR-ISG-01 [8.7]):

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

Compliance with each of these items is discussed in Section 3.10.1 above.

NRC Interim Staff Guidance NSIR/DPR-ISG-01 [8.7] provides information for addressing Emergency Planning requirements for nuclear power plants. This guidance is based on changes to Emergency Planning regulations in 10 CFR 50.47 and 10 CFR 50, Appendix E, that were published in the *Federal Register* on November 23, 2011 (76FR72560). This ISG identified several areas for potential Emergency Planning program improvement and increased clarity based on experience gained from Emergency Planning program implementation since the TMI accident, recent technological advances, and lessons learned from actual events, drills, and exercises. The ISG recognized that previous regulatory standards did not address the capabilities and functional requirements for a consolidated EOF, such as capabilities for handling simultaneous events at two or more sites or providing for NRC and offsite officials to relocate to a facility nearer the site if they desire when an EOF is located at a substantial distance from a site. The NRC revised regulations and provided associated guidance to reflect a performance-based approach for EOFs. The regulations and guidance provide functional requirements for these facilities, thus ensuring that the necessary capabilities are in place to protect public health and safety.

10 CFR 50.54(q), Emergency Plans, states:

(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 VCSNS 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 30/40/60 minutes to 60/90 minutes. The proposed changes are considered a reduction in effectiveness as defined in 10 CFR 50.54(q)(1)(iv) and require prior approval by the NRC in accordance with 10 CFR 50.54(q)(4). Therefore, DESC is submitting this LAR pursuant to 10 CFR 50.90.

The VCSNS 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).

10 CFR 50, Appendix E.IV states:

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 VCSNS Emergency Plan includes a description of the organization, including definition of authorities, responsibilities, and duties of individuals. The current VCSNS Emergency Plan (Revision 74) 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 30/40/60 minutes to 60/90 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 proposed increase in staff augmentation times. The proposed changes to the VCSNS 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.

10 CFR 50 Appendix E Section IV, Part E states, in part:

Adequate provisions shall be made and described for emergency facilities and equipment, including:

8.a. (i) A licensee onsite technical support center and an emergency operations facility from which effective direction can be given and effective control can be exercised during an emergency.

8.b. For a nuclear power reactor licensee's emergency operations facility required by paragraph 8.a of this section, either a facility located between 10 miles and 25 miles of the nuclear power reactor site(s), or a primary facility located less than 10 miles from the nuclear power reactor site(s) and a backup facility located between 10 miles and 25 miles of the nuclear power reactor site(s). An emergency operations facility may serve more than one nuclear power reactor site. A licensee desiring to locate an emergency operations facility more than 25 miles from a nuclear power reactor site shall request prior Commission approval by submitting an application for an amendment to its license. For an emergency operations facility located more than 25 miles from a nuclear power reactor

site, provisions must be made for locating NRC and offsite responders closer to the nuclear power reactor site so that NRC and offsite responders can interact face-to-face with emergency response personnel entering and leaving the nuclear power reactor site. Provisions for locating NRC and offsite responders closer to a nuclear power reactor site that is more than 25 miles from the emergency operations facility must include the following:

(1) Space for members of an NRC site team and Federal, State, and local responders.

(2) Additional space for conducting briefings with emergency response personnel.

(3) Communication with other licensee and offsite emergency response facilities.

(4) Access to plant data and radiological information, and

(5) Access to copying equipment and office supplies.

8.c. By June 20, 2012, for a nuclear power reactor licensee's emergency operations facility required by paragraph 8.a of this section, a facility having the following capabilities:

(1) The capability for obtaining and displaying plant data and radiological information for each reactor at a nuclear power reactor site and for each nuclear power reactor site that the facility serves.

(2) The capability to analyze plant technical information and provide technical briefings on event conditions and prognosis to licensee and offsite response organizations for each reactor at a nuclear power reactor site and for each nuclear power reactor site that the facility serves; and

(3) The capability to support response to events occurring simultaneously at more than one nuclear power reactor site if the emergency operations facility serves more than one site.

The proposed EOF location change to the CERC will result in a more than 25 miles relocation. The CERC will meet all the requirements stated in 10 CFR 50, Appendix E, Section IV, Part E.

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, [8.3] and NUREG-0654, Revision 2, [8.1] provide general guidance concerning the onsite emergency organization and allow licensees some flexibility in the number of on-shift staff required by EPs for response to emergency

events. NUREG-0654, Revision 1, [8.3] guidance recommends that there be, in addition to on-shift personnel, 30-minute and 60-minute responders. NUREG-0654, Revision 2, [8.1] 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, [8.1] also provides guidance that augmentation time be measured from the declaration of the emergency. The current VCSNS Emergency Plan staffing in Table B-1a meets the intent of NUREG-0654, Revision 1, [8.3] Table B-1. This LAR proposes to remove maintenance personnel from shift and extend staff augmentation response times from 30/40/60 minutes to 60/90 minutes. The proposed changes have been evaluated using a staffing analysis performed to verify compliance to 10 CFR 50, Appendix E.IV.A.9 requirements. The proposed changes to the VCSNS Emergency Plan meet the intent of NUREG-0654, Revision 2, [8.1] Table B-1. In addition, NUREG-0654, Revision 2, [8.1] established evaluation criteria related to EOF under applicable planning standards.

NUREG-0696

NUREG-0696 [8.9] provides compliance criteria for the EOF in various categories. The CERC will comply with these criteria as defined in NUREG-0696 [8.9]. In addition, the CERC will comply with the guidance stated in Section IV of NSIR/DPR-ISG-01 [8.7] for a performance-based approach for evaluating changes to a consolidated EOF.

5.2 Applicable Regulatory Guidance

Revision 2 to NUREG-0654/FEMA, [8.1] [Federal Emergency Management Agency]-REP-1, “Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants”, establishes evaluation criteria related to the EOF under applicable planning standards.

NUREG-0696, [8.9] “Functional Criteria for Emergency Response Facilities”, provides criteria for the NRC staff to use in evaluating whether an applicant or licensee meets the requirements in paragraph IV.E.8 of Appendix E to 10 CFR Part 50. Section 4, “Emergency Operations Facility,” of NUREG-0696 [8.9] provides compliance criteria for the EOF in the following categories:

- Functions (section 4.1)
- Location, Structure, and Habitability (section 4.2)
- Staffing and Training (section 4.3)
- Size (section 4.4)
- Radiological Monitoring (section 4.5)
- Communications (section 4.6)
- Instrumentation, Data System Equipment, and Power Supplies (section 4.7)

- Technical Data and Data System (section 4.8)
- Records Availability and Management (section 4.9)

The Office of Nuclear Security and Incident Response (NSIR)/Division of Preparedness and Response (DPR) Interim Staff Guidance (ISG) document, NSIR/DPR-ISG-01, "Emergency Planning for Nuclear Power Plants," dated November 2011 [8.7] supplements NUREG-0696 [8.9] and in Section IV.I provides a performance-based approach for evaluating changes to a consolidated EOF.

5.3 Precedents

This proposed VCSNS Emergency Plan staff augmentation related 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)

In addition, NRC has approved several consolidated EOFs located more than 25 miles from stations they support. The proposed VCSNS EOF consolidation is similar to changes approved by the NRC for other licensees. For instance,

- Xcel Energy Request for Emergency Operations Facility Consolidation and Relocation to replace the existing Monticello Nuclear Generating Plant and Prairie Island Nuclear Generating Plant EOFs, and their common backup EOF, with a consolidated EOF centrally located in the Xcel Energy headquarters, located in Minneapolis, NM [8.37]

- For Dominion Energy North Anna and Surry Power Stations, approved on February 27, 2019, [8.10]

- For Southern Nuclear Operating Company's Edwin I. Hatch Nuclear Plant, Joseph M. Farley Nuclear Plant, and Vogtle Electric Generating Plant [8.11]

During the past decade, NRC approved addition of plants to previously approved consolidated EOFs, including

- William States Lee III Nuclear Station [8.12]
- Brunswick, Robinson and Sheron Harris for Duke Energy's Charlotte EOF in Charlotte, North Carolina [8.12, 8.13],
- Calvert Cliffs for the Exelon Mid-Atlantic EOF in Coatesville, Pennsylvania [8.14]
- Southern Nuclear Operating Company's EOF [8.15] and River Bend's backup EOF [8.16]

5.4 No Significant Hazards Consideration

The no significant hazards consideration is presented in Attachment 6.

5.5 Conclusion

In conclusion, DESC has evaluated the proposed changes against the applicable regulatory requirements and acceptance criteria. The proposed VCSNS Emergency Plan changes continue to assure that regulatory requirements and emergency planning standards associated with emergency response are met.

Based on the considerations discussed above, DESC has determined that (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner; (2) such activities will be conducted in compliance with the NRC's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

6.0 ENVIRONMENTAL CONSIDERATION

DESC has determined that the proposed change would change a requirement with respect to installation or use of a facility or component located within the restricted area, as defined in 10 CFR 20, or would change an inspection or surveillance requirement. However, the proposed amendment does not involve (i) a significant hazards consideration, or (ii) a significant change in the types or a significant increase in the amounts of any effluent that may be released offsite, or (iii) 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, pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the proposed amendment.

ATTACHMENT 2

CURRENT VCSNS EMERGENCY PLAN PAGES MARK-UP

VIRGIL C. SUMMER NUCLEAR STATION
NUCLEAR OPERATIONS

NUCLEAR OPERATIONS
COPY NO. _____

RADIATION EMERGENCY PLAN

EP-100
REVISION XX

SAFETY RELATED

requirements of 10 CFR 50 Appendix E. Development of the Emergency Plan was based on NUREG-0654.

Acceptable alternate methods, which deviate from NUREG-0654, are allowed under Regulatory Guide 1.101, "Emergency Planning and Preparedness for Nuclear Power Reactors." However, any and all deviations will be documented in the Unit 1 Annex and evaluated as continuing to meet the Planning Standards of 10 CFR 50.47(b) and 10 CFR 50 Appendix E under the 10 CFR 50.54(q) process. This evaluation process is employed to ensure the continued effectiveness of the Emergency Plan and Unit 1 Annex.

Other applicable regulations, publications, and guidance were used (see Appendix 1, "References") along with site-specific documents to ensure consistency in the planning effort.

Section E: Contiguous-Jurisdiction Emergency Planning

The Emergency Plan recognizes the state of South Carolina, in cooperation with the EPZ counties, as the overall authority responsible for Protective Action Directives (PADs) in order to protect the health and safety of the general public.

Section F: Integrated Guidance and Criteria

This plan was developed in conjunction with federal, state, and county emergency response plans to ensure a consistent and integrated response to a classified event.

Section G: Funding and Technical Assistance

Dominion Energy is dedicated to providing the level of support necessary, as dictated by federal regulation, to ensure appropriate integration of the state, county, and VCSNS radiological emergency preparedness programs.

Section H: Emergency Response Organization

Dominion Energy acknowledges its primary responsibility for planning and implementing emergency measures within the EAB and for overall plant accident assessment. These emergency measures include corrective actions, protective measures, and aid for personnel onsite. To accomplish these responsibilities, Dominion Energy has established an augmented ERO that will be mobilized to provide the initial response to an event classified as an Alert, Site Area Emergency, or General Emergency. The ERO may be partially or fully activated during an Unusual Event, if the Interim Station Emergency Manager~~Director~~ (ISEM~~D~~) determines their assistance is needed to mitigate the event. In addition, advance arrangements have been made with offsite organizations for special emergency assistance such as ambulance, medical, hospital, fire, and police services.

In the longer time frame, a framework for a Recovery Organization is set forth in this plan. It is recognized that the normal station organization will be used for much of the recovery effort, with additional resources identified at the time of the event.

Section I: Federal Response

Provisions are made within the Emergency Plan for the integration of appropriate elements of federal assistance activities. Arrangements have been made to accommodate a federal response

b. During an emergency condition classified as an Alert, Site Area Emergency, or General Emergency, the station's augmented ERO is notified and responds to augment the normal plant organization under the direction of the ISEM~~D~~.

The augmented ERO consists of three major response suborganizations with inter-relationships as illustrated in Figure A-2:

1) The Onsite ERO, directed by the Station Emergency Manager~~Director~~ (SEM~~D~~), provides for:

- Control and operation of the plant.
- Mitigation of the emergency condition.
- Protection of station personnel ~~inside the Protected Area~~.
- Emergency support for Operations, Engineering, and Maintenance~~, Firefighting, Security, and first aid~~.

~~The onsite ERO is made up primarily of personnel from the station's day-to-day management team, Operations, Health Physics, Chemistry, Engineering, Maintenance, Security, and other site support personnel.~~

2) The Offsite ERO, directed by the Corporate Response~~EOF~~ Manager (CRM) provides for:

- Offsite radiological accident assessment.
- ~~Protection of station personnel outside the Protected Area.~~
- Emergency support for acquisition of material and support personnel.
- The primary interface between VCSNS and outside organizations responsible for the protection of the public.

~~The Offsite ERO is made up primarily of personnel from the station's high level management team, Security, Health Physics, and Training with support from other stations departments as necessary.~~

~~3) The Emergency Public Information Organization (EPIO), includes the JIC and the CERC/CSC and is directed by the Corporate Response Manager (CRM)Emergency Control Officer, coordinates with Public Information Officers (PIO) from other organizations to provide information to the public through the news media.~~

~~4) Innsbrook Corporate Support Center (ICSC), under the direction of the Corporate Support Director who reports to the ECO, is responsible for obtaining approval for and issuing press releases, media monitoring and rumor control, and corporate logistical support.~~

~~c. The Emergency Control Officer (ECO) is a senior VCSNS employee with overall responsibility for coordinating emergency response actions of the station, and the EPIO~~

~~with the affected state(s) and county agencies. The ECO is also responsible for designating the Chief Technical Spokesperson.~~

cd. Procedures for training and maintenance of the emergency organization are in place to ensure 24-hour-per-day staffing for emergency response, including established communication links.

2. State and County Functions and Responsibilities

The state and counties have emergency response plans that specify the responsibilities and functions for the major agencies, departments, and key individuals of their organizations. This information is located in their respective plans.

3. Agreements in Planning Effort

Written agreements establishing the concept of operations developed between VCSNS and other support organizations having an emergency response role have been developed. These agreements identify the emergency measures to be provided, the mutually accepted criteria for implementation, and the arrangements for exchange of information. Agreement letters are not necessary with federal agencies that are legally required to respond based on federal law. However, agreements are necessary if the agency was expected to provide assistance not required by law. Letters of Agreement shall be obtained with private contractors and others who provide services in support of the station during a declared emergency. A list of Letters of Agreement is provided in Appendix 2 of this Plan, the actual letters are maintained on file at the station. Letters of Agreement, as a minimum, state that the cooperating organization will provide their normal services in support of an emergency at the VCSNS site. A contract/purchase order with a private contractor is considered acceptable in lieu of a Letter of Agreement for the specified duration of the contract.

4. Continuous Coverage

VCSNS maintains 24-hour emergency response capability. The normal on-shift complement provides the initial response to an emergency. This group is trained to handle emergency situations (e.g., initiate implementation of the Emergency Plan, make initial accident assessment, emergency classification, notifications, communications, and PARs) until the augmented ERO arrives. The ERO is composed of a broad spectrum of personnel with specialties in Operations, Maintenance, Engineering, and Radiation Protection~~Radios~~/Chemistry, ~~Health Physics, fire protection, Security, communications, and Emergency Preparedness~~ who are available and trained to augment on-shift personnel in an emergency. Procedures for training and maintenance of the emergency organization are in place to provide the capability of continuous (24-hour) operations.

The SEM~~ED~~, located in the Technical Support Center (TSC), has the authority and responsibility for assuring continuity of resources (technical, administrative, and material) in the event of the activation of the ERO.

5. Long-Duration Events

VCSNS maintains procedures for establishing the needed emergency response personnel during long-duration events. Appropriate staffing levels should be discussed with the SEM~~ED~~,

~~EOF Manager,~~ and CRM~~ECO~~ to minimize fatigue among the ERO. This discussion should consider the following:

a. Ensure shift staffing is sufficient to handle all emergency tasks. Consider having twice the needed personnel required to implement all mitigating strategies to ensure sufficient manpower is available.

b. Consider combining ERO teams at event onset to ensure that there are sufficient personnel to handle all tasks (e.g. A and C ERO teams, and B and D ERO Teams.)

c. Consider starting initial shift rotation of 12 hours on and 12 hours off to ensure that continuous coverage is maintained throughout the event. As the duration of the event continues, consider providing time off for personnel to prevent fatigue or stress, if the situation allows.

d. Consideration should be made for those emergency responders who need to manage family and other personal matters (on a case by case basis) while the emergency is in progress.

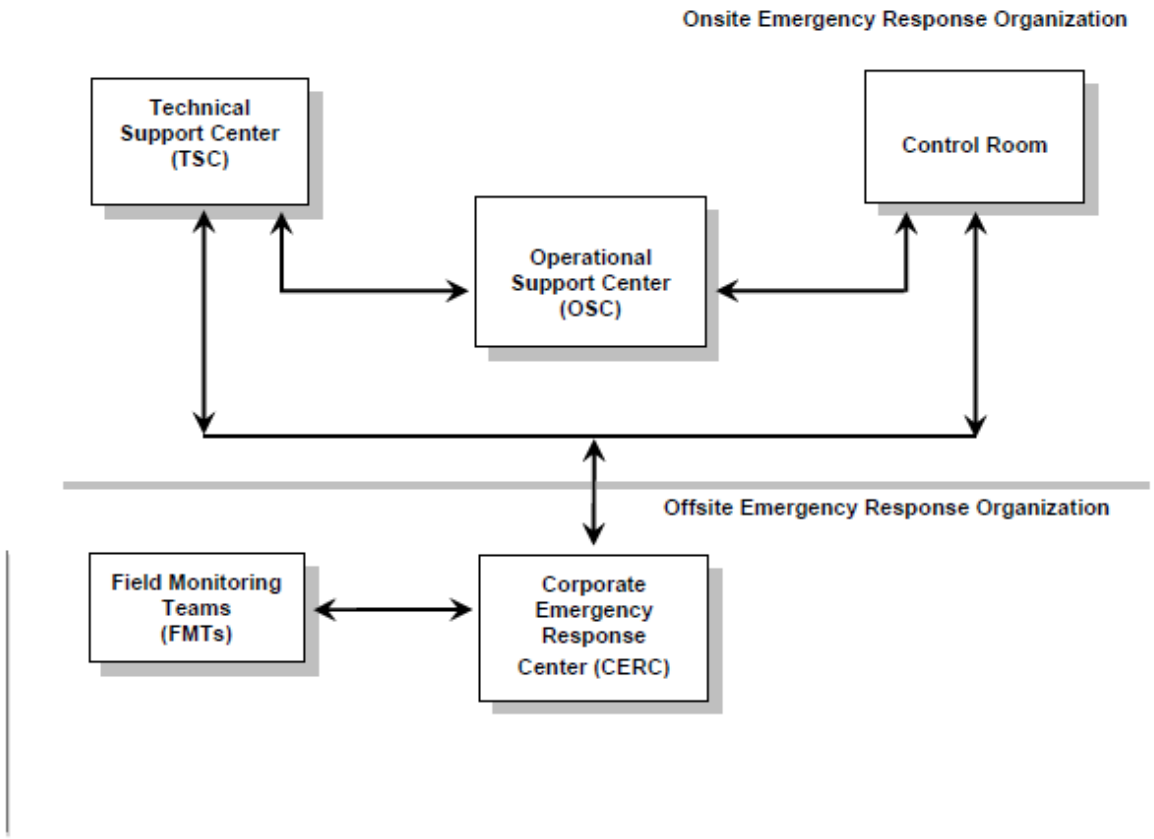


Figure A-2: VCSNS Augmented Emergency Response Organization Interrelationships

Section B: Emergency Response Organization

This section describes the ERO, its key positions, and associated responsibilities. It outlines the staffing requirements that provide initial emergency response actions and provisions for timely augmentation of on-shift personnel when required.

1. On-Shift Emergency Response Organization Assignments

The normal plant personnel complement is established with the Site Vice President, having overall authority for station operations. The Site Vice President, directs the unit organization in the management of the various departments while the Shift Manager retains the responsibility for actual operation of plant systems. ~~Emergency Preparedness must consider the capabilities of the normal plant organization and the ERO. The initial phases of an emergency situation at VCSNS will most likely involve a relatively small number of individuals. Those individuals must be capable of (1) determining that an emergency exists, (2) providing initial classification and assessment, (3) promptly notifying offsite authorities and individuals in the emergency organization, and (4) making PARs as needed. The subsequent phases of the emergency situation may require an increasing augmentation of the emergency organization.~~

The station has personnel on-shift at all times that can provide an initial response to an Emergency Event. ~~Annex 1 Table 2-1 and Part 2 Section B-1 and~~ Table B-1a outlines the unit on-shift and augmented emergency organization ~~and its relation to the normal staff complement.~~ Members of the on-shift organization are trained on their responsibilities and duties in the event of an emergency and are capable of performing all response actions in an Unusual Event and the initial actions of higher classifications. The ~~onsite~~ ERO will be activated at an Alert or higher classification ~~and the entire ERO will be activated at a Site Area Emergency or General Emergency~~.

Shift personnel have the capability at all times to perform detection, mitigation, classification, and notification functions required in the early phases of an emergency. Shift augmentation and further ERO involvement will be determined by the extent and magnitude of the event. When a transition to Severe Accident Management Guidelines (SAMGs) is initiated, the on-shift crew assumes the duties and responsibilities of the SAMG implementers.

Shift Manager: Has the responsibility and the authority to declare an emergency and becomes the Interim Station Emergency Manager ~~Director~~. In that role, the ISEM ~~ED~~ will initiate the appropriate immediate action in accordance with written procedures, mitigate the consequences of the emergency, activate the ~~onsite~~ ERO at an Alert, ~~and the entire ERO at a~~ Site Area Emergency or General Emergency and notify offsite support and government agencies, as appropriate. In the Shift Manager's absence or incapacitation, the line of succession is defined by unit's Operations and Emergency Plan Procedures.

Shift Technical Advisor: A qualified individual assumes an overview role as the technical advisor with the specific responsibility of monitoring the maintenance of core cooling and containment integrity. An individual assigned the duty as the Shift Technical Advisor shall be available to the unit Control Room at all times.

~~Control Room Operators: At least two qualified Reactor Operators are assigned to each shift during normal operations. They are responsible for operating plant equipment from the Control Room.~~

~~Auxiliary Operators: At least five non-licensed operators are assigned to each shift. They are responsible for operating plant equipment throughout the plant.~~

Radiation Protection / Chemistry: ~~The station Health Physics personnel are responsible for the handling and monitoring of radioactive materials. Included in this organization are Health Physics Supervisors, Staff, and Specialists~~. Radiation Protection and Chemistry carries out health physics and chemistry functions including radiological surveys, sample collection, issuing radiation work permits, personnel monitoring and maintaining primary and secondary chemistry.

~~Chemistry: The station Chemistry personnel are responsible for sampling of system effluents, and the chemical and radio-analytical analysis of these samples. Included in this organization are Chemistry Supervisors, Staff, and Specialists.~~

~~Security: The station Security personnel are responsible for the physical security of the site. Included in this organization are Security management, staff, and Security Officers.~~

~~A Fire Brigade for the Protected Area has been established by designating trained individuals as brigade members. The Fire Brigade Leader will be designated as per the FSAR.~~

~~A Medical Emergency Response Team (MERT) for the Protected Area has been established by designating trained individuals from the station.~~

An individual ~~(or group of individuals)~~ on each shift is trained and made available to act as the State/Local~~County~~ Communicator ~~for the Protected Area~~. This individual can notify station personnel, state agencies, county agencies, and the NRC. The State/Local~~County~~ Communicator will maintain communications as necessary until relieved by a qualified member from the augmented ERO. Typically S/L~~C~~ Communicators are used for telephone talkers only. The I~~ED~~/SEM~~ED~~ may designate trained and qualified S/L~~C~~ Communicators to complete the Emergency Notification Form prior to approval by the ISEM~~D~~/SEM~~ED~~.

2. Authority over the Emergency Response Organization

The ISEM~~D~~, SEM~~ED~~, ~~EOF Manager,~~ and Corporate Response Manager~~Emergency Control Officer~~ (CRM~~ECO~~) are the designated ~~VCSNS~~ individuals who have overall authority and responsibility, management ability, and technical knowledge for coordinating all emergency response activities at the VCSNS. ~~The IED is the Shift Manager. The ED, EOF Manager, and ECO are members of site management~~.

~~Control Room: IED (Shift Manager), initially in command and control until relieved by the Emergency Director (ED) in the TSC.~~

~~TSC: ED, when the TSC has attained activation staffing levels, assumes the responsibilities for classification, declaration, and notification of emergencies, evaluations of operational events, and mitigation development. These duties may only be turned over to another qualified ED, with exception of the notification, which may be turned over to the EOF Manager in the EOF.~~

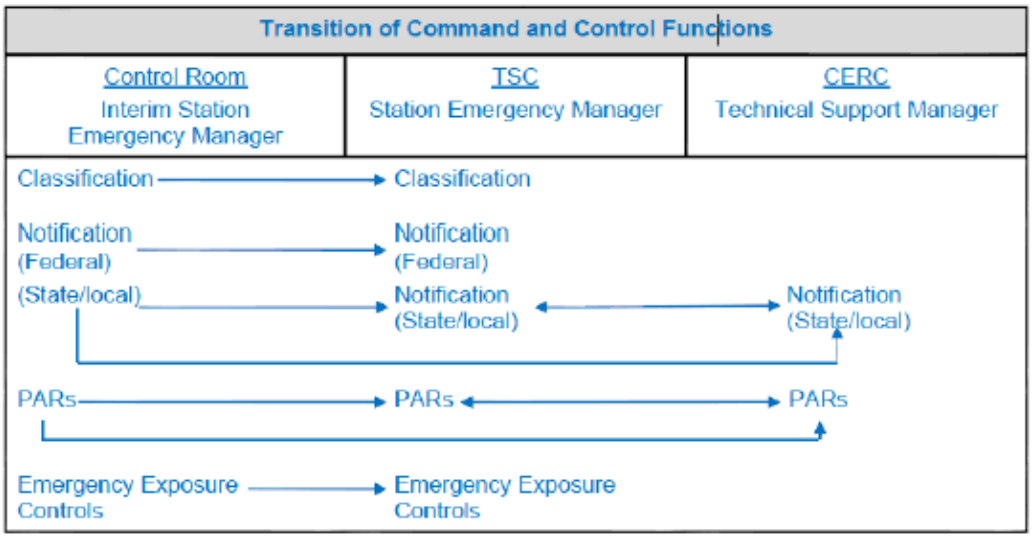
~~EOF: ECO, when the EOF has attained activation staffing levels, assumes overall command and control of VCSNS emergency response and site technical review of press releases. These duties may only be turned over to another qualified ECO.~~

~~EOF Manager, when the EOF has attained activation staffing levels, assumes command and control of the EOF, notification of local, state, and federal agencies, and development and notification of Protective Action Recommendations. These duties may only be turned over to another qualified EOF Manager.~~

3. Criteria for Assuming Command and Control (Succession)

Emergency personnel assume responsibility for their positions upon receiving notification to activate. The responsibility for initial assessment of, and response to, an emergency rests with the Shift Manager. The Shift Manager is the ISEM~~D~~ and has the SEM~~ED~~'s responsibilities and authority until relieved by a qualified SEM~~ED~~. The SEM~~ED~~ will relieve the Shift Manager of the responsibility for continued assessment of the severity of the emergency and functions as part of the ERO as appropriate in accordance with the guidance provided in the Emergency Plan, the Unit 1 Annex, and the emergency plan procedures. Final succession is achieved when the SEM~~ED, EOF Manager,~~ TSM and CRM~~ECO~~ assume overall command and control, and directs VCSNS's emergency response activities.

The Control Room is to be relieved of command and control as soon as possible after the declaration of an Alert or higher classification. ~~The overall c~~Command and control functions are transferred per the diagram below.



~~of the emergency is transferred directly to the ECO, as soon as possible. Command and control does not transfer to the TSC and EOF until the following criteria have been met:~~

- ~~Adequate staff levels are present in support of the non-delegable responsibilities~~
- ~~The status of the plant is well understood by the relieving individual~~
- ~~The staff has been fully briefed as to the status of the event and the current proposed plan of action~~
- ~~A formal turnover between the IED relinquishing command and control and the ED, EOF Manager, and ECO assuming command and control has been made~~

~~Although the ERO fulfills all regulatory requirements for emergency response, it may be altered at the discretion of the CRMECO. This type of alteration will be based on identified~~

~~needs within the ERO, event dependent criteria, and identified needs of the company as a whole.~~

4. **Non-Delegable Duties**

Non-delegable duties include the following functions:

- Event classification
- Development of PARs for the general public
- Notification of offsite authorities (approval of state, county, and NRC notifications)
- ~~Approving company press releases pertaining to the emergency~~

The Shift Manager is responsible for the initial classification of an event and assumes the position as ISEM~~D~~. In this capacity, the Shift Manager has responsibility for performing the non-delegable responsibilities until relieved.

The SEM~~ED~~ and the Technical Support Manager in the CERC~~(in the TSC)~~ will relieve the ISEM~~D~~ of the command and control, event classification, notification, and Protective Action Recommendation duties. ~~The CSD at the ICSC has the authority to approve company press releases. Once the EOF is activated, the EOF Manager will relieve the ED of emergency notifications and PAR development and Tthe CRMECO will relieve the ISEMD of overall command and control.~~

5. **Emergency Response Organization Position Responsibilities**

~~Annex 1 Table 2-1 and Part 2 Section B-1 and~~ Table B-1a outlines ERO positions required to meet minimum staffing and augmentation of the on-shift complement upon activation of the Emergency Response Organization (ERO)~~, and the major tasks assigned to each position.~~ The augmentation staffing levels are used as a planning basis to cover a wide range of possible events. For extended events (one that is expected to continue for more than 24 hours), actual staffing will be established by the SEM~~ED, EOF Manager,~~ and CRM~~ECO~~ based on the event and personnel availability. ~~However, reduced staffing will only occur after discussion concerning the impact on plant operations and emergency response with the ED, EOF Manager, and ECO.~~

~~As shown on Figure B-1a, the overall ERO is made up of three suborganizations:~~

- ~~The first is called the Onsite ERO. It is responsible for onsite emergency response activities. These activities include protecting plant personnel, mitigating the results of the event classifications, and keeping the Offsite ERO informed of onsite events and actions being taken.~~
- ~~The second is called the Offsite ERO, which is responsible for offsite emergency response activities. These activities include providing information to and interface with offsite authorities, monitoring offsite results of the event, protecting plant personnel outside the Protected Area, supporting the onsite organization, notifications, Protective Action Recommendations (PARs), and coordinating public information.~~

~~• The third is called the Emergency Public Information Organization and is responsible for providing accurate information to the public about the event through the news media.~~

~~Specific responsibilities for each sub organization and related positions are as follows:~~

a. Onsite ERO (Figure B-1a and b): The Onsite ERO is activated during an emergency classified as an Alert or higher. It can also be activated by the ISEM~~D~~ at his discretion during an Unusual Event. It functions under the direction of the SEM~~ED~~, who is responsible for organizing and coordinating the emergency efforts onsite~~at and within the Protected Area.~~

The Onsite ERO consists of station personnel who are involved with emergency response efforts necessary to control the plant during an incident. This organization operates out of the Control Room, the Technical Support Center (TSC), and the Operational Support Center (OSC). Collectively, members of the Onsite ERO provide for the following activities during an emergency:

~~• Plant systems operations and monitoring~~
- Emergency Direction and Control
- Notification / Communication
- Radiological Accident Assessment~~survey and monitoring (including Environmental Monitoring)~~
~~• Firefighting~~
~~• Rescue operations and first aid~~
~~• Decontamination~~
~~• Security of plant and access control~~
- Plant System Engineering
- Repair and Corrective Actions~~damage control~~
~~• Personnel protection including assembly, accountability, and evacuation~~
~~• Communications~~

Those personnel identified to augment the on-shift personnel within 60 minutes for performance of support activities and ~~about 6~~90 minutes for positions providing relief of emergency activities for control room personnel at ~~of~~ the declaration of an Alert or higher classification are part of the on-call ERO. These personnel are immediately available during normal working hours and are contacted by a call out system during nonworking hours.

For security-related events that would prevent the emergency responders from reaching the site, the augmented TSC, OSC, and Control Room responders would be directed to respond to the Alternative Facility ~~EOF~~ or another designated offsite location. ~~TSC/OSC/Control Room staffs will provide any possible assistance from this offsite staging area until such time as site access is restored.~~

~~All Onsite~~ ERO personnel shall have the authority to perform assigned duties in a manner consistent with the objectives of this plan. In addition to maintaining adequate documentation of the event, position responsibilities include:

1) Shift Manager (Interim Station Emergency Manager~~Director~~) CR
A Shift Manager is on duty 24 hours a day and is the ISEM~~D~~ in a declared emergency until relieved of this function. While serving in this capacity, the Shift Manager is responsible for:

- Activating the ERO (as deemed appropriate or as procedurally required).
- Initiating the NRC Emergency Response Data System (ERDS).
- Performing those duties outlined for the SEM~~ED, EOF Manager,~~ and CRM~~ECO~~.

The on-duty Shift Manager directs the activities of the operating crew and is responsible for the safe operation of the plant in compliance with the unit NRC operating license and the unit operating procedures. The Shift Manager, after relinquishing command and control, functionally reports to the SEM~~ED~~ in the TSC.

~~The Shift Manager's responsibilities, when not in command and control, are described below:~~

- ~~The authority and responsibility to shutdown the reactor when determined that the safety of the reactor is in jeopardy or when operating parameters exceed any of the reactor protection circuit setpoints and automatic shutdown does not occur.~~
- ~~To ensure a review has been completed to determine the circumstance, cause, and limits under which operations can safely proceed before the reactor is returned to power following a trip or an unscheduled or unexplained power reduction.~~
- ~~The responsibility to be present at the plant and to provide direction for returning the reactor to power following a trip or an unscheduled or unexplained power reduction.~~
- ~~The responsibility to adhere to the unit Technical Specifications and to review routine operating data to assure safe operation~~
- ~~The responsibility to identify applicable EALs and emergency classifications~~
- ~~The responsibility to adhere to unit operating procedures and the requirements for their use. During an emergency, authorize operations personnel to depart from approved procedures where necessary to prevent injury to personnel, including the public, or damage to the facility consistent with the requirements of 10 CFR 50.54(x) and (y).~~
- ~~Initiate immediate corrective actions to limit or contain the emergency invoking the provisions of 10 CFR 50.54(x) if appropriate, and specifically when addressing SAMGs~~
- ~~Approve emergency special procedures, and implement as required under the provisions of 10 CFR 50.54(x)~~

- ~~Supervise the activities of the Control Room crew and the Communicators~~
- ~~Initiate onsite protective actions, including authorization of exposure limits for emergency workers in excess of normal station limits~~

2) Station Emergency Manager~~Director~~ (SEM~~D~~) TSC
The SEM~~ED~~ supervises and directs the Onsite ERO. The SEM~~ED~~'s responsibilities include organizing and coordinating the onsite emergency efforts. Additionally, the SEM~~ED~~ has the requisite authority, plant operating experience, and qualifications to implement in-plant recovery operations. The SEM~~ED~~ is responsible for relieving the ISEM~~D~~ of classifying emergencies, and other non-delegable duties.

~~8) Emergency Preparedness Advisor TSC~~
~~The EP Advisor reports to the ED and is responsible for advising and supporting the TSC on emergency plan actions and responses, advising the ED on regulatory requirements, and interfacing with the EOF or offsite organizations seeking onsite information or data. The Advisor is also responsible for completing the Emergency Notification Forms, oversight of the actions taken by the State/County Communicators in support of notifications.~~

~~3~~5) Radiological Assessment Director (RAD)~~Supervisor~~ TSC
The Radiological Assessment Director~~Supervisor~~ reports to the SEM~~ED~~ and supervises the activities of the onsite radiological assessments. The supervisor directs the staff in determining the extent and nature of radiological or hazardous material problems onsite.

4) Dose Assessment Team Leader TSC
Maintains contact with and transmits instructions to the Offsite Monitoring teams and operates the dose assessment program. The Dose Assessment Team Leader interprets radiological data from the offsite monitoring teams reports the results of the offsite releases and PARs based on dose projections to the RAD.

5) Offsite Monitoring Teams TSC
Teams report to the Dose Assessment Team Leader in the TSC or the Accident Assessment Team Leader in the CERC. Teams provide offsite monitoring and sample collection as needed.

6) Emergency Maintenance Director TSC
The Emergency Maintenance Director (EMD) reports to the SEM in the TSC and is responsible for advising the SEM on emergency maintenance activities including prioritization and status and provides an interface with the OSC Director.

7) Emergency Security Director TSC
The Emergency Security Director (ESD) reports to the SEM in the TSC and acts as the liaison between site security and the TSC and directs security activities.

8~~3~~) Emergency Technical Director~~Support Supervisor~~ TSC
The Emergency Technical Director~~Support Supervisor~~ reports to the SEM~~ED~~ and directs a staff of engineers in performing technical assessments of station emergencies and assists in recovery planning.

9~~7~~) Technical Support Staff TSC
Reactor~~Core Thermal~~, Electrical, and Mechanical Engineers make up the technical support staff. These Engineers determine source term, evaluate damage assessment reports and support the development of mitigation recommendations, strategies, and procedures to recover the plant and return it to an operational state.

10~~4~~) Emergency Operations Director~~Supervisor~~ TSC
The Emergency Operations Director~~Supervisor~~ reports to the SEM~~ED~~. Major functions include directing activities of operations personnel, determining the extent of station emergencies, ~~-~~and recommending corrective actions.

11~~6~~) NRC Emergency ~~Notification System (ENS)~~ Communicator TSC
The NRC Emergency ~~Notification System~~ Communicator~~s~~ reports to the Station Emergency Manager~~-Director~~ (SEM) in the TSC. ~~and the EOF Manager in the EOF. All~~ The communicator~~s~~ provides updates and responds to inquiries from the NRC for plant status, emergency classifications, and mitigation assessments and actions.

12~~9~~) State/Local~~County~~ Communicator TSC
The State/Local~~County~~ Communicator reports to the SEM~~ED~~ and ensures that initial notifications are communicated to the offsite officials within 15 minutes after the change in classification or a change in PARs and that follow-up notifications are made within about 60 minutes of the previous notification. This position will exchange information with appropriate state and county agencies regarding emergency notification forms or other questions that may arise when the CERC is not available. ~~Upon activation of the EOF, communications will be transferred to the EOF.~~

13~~0~~) Operational Support Center Director~~Supervisor~~ OSC
The OSC Director~~Supervisor~~ reports to the Emergency Maintenance Director in the TSC~~ED~~ and supervises the activities of OSC personnel while implementing the mitigation strategies and procedures.

14) Radiation Protection Supervisor OSC
Directs activities associated with inplant, onsite and personnel monitoring. Reports to the RAD, provides survey results for offsite dose assessment and recommends protective measures.

15~~1~~) Operational Support Center Damage Control Teams OSC
Specialists and Operators make-up the OSC Damage Control Teams. These teams perform emergency mitigation tasks throughout the station. Individuals from RP/Chemistry~~Health Physics~~, Mechanical, Electrical, and I&C Maintenance, ~~Chemistry,~~ and Operations are always available as part of the OSC Damage Control

Teams. Individuals from other plant organizations may also be called to assist in emergency mitigation efforts.

~~12) Security Lead OSC~~
~~The Security Lead will support the emergency by providing escort or access as requested to areas secured by the Security Force and not normally accessed. The Supervisor is responsible for the physical security of the plant, access control to the plant Protected Area and access control to plant vital areas. In the event of a security related event, the Supervisor will report to the TSC.~~

b. CERC~~Offsite ERO~~ (Figure B-1c): The CERC~~Offsite ERO~~ is activated during an emergency classified as an Alert ~~Site Area Emergency~~ or higher. It functions under the direction of the CRM~~EOF Manager,~~ and is responsible for offsite emergency response activities. These activities include providing information to and interface with offsite authorities; monitoring offsite results of the event; ~~protecting plant personnel outside the Protected Area who are sheltered or evacuated,~~ supporting the onsite organization, and ~~coordinating the flow of information to the EPIO~~implementation of the Joint Information System (JIS).

1) Corporate Response Manager~~Emergency Control Officer~~ (CRM~~ECO~~) CERC~~EOF~~
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 in the affected station(s) in the mitigation of recovery from an accident. The CRM works with state and federal agency representatives 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.

~~a) When the ECO has command and control, the ongoing responsibilities include:~~

- ~~Assumes overall command and control of emergency response activities~~
- ~~Ensure that federal, state, and county authorities and industry support agencies remain cognizant of the status of the emergency situation. If requested, dispatch informed individuals to offsite governmental EOCs~~
- ~~Ensure that ICSC is cognizant of the status of the emergency situation.~~
- ~~Designates the Chief Technical Spokesperson for press conferences~~
- ~~Approve the technical content of VCSNS press releases before they are released to the media (non delegable duty)~~
- ~~Coordinate all VCSNS activities involved with the emergency response~~
- ~~Ensure offsite agency updates are periodically communicated as required/requested~~
- ~~Request assistance from non-VCSNS emergency response organizations, as necessary~~
- ~~Provide status, assessment information, and recommended protective actions to offsite emergency response agencies~~

~~2) EOF Manager EOF~~
~~The EOF Manager reports to the ECO. The EOF Manager has the authority,~~

~~management ability, and technical knowledge to assist the ECO in the management of VCSNS's offsite ERO by directing and coordinating the activation and response efforts of the EOF staff, determining PARs (non delegable duty) when necessary, and preparing state and county notification forms (non delegable duty) with the assistance of the Offsite Radiological Monitoring Coordinator.~~

2) Technical Support Manager CERC

The Technical Support Manager (TSM) is responsible for the command functions related to prompt and accurate dose assessments, notifying state and local governments, 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 working with the SEM to determine the need to escalate the emergency classification. The TSM supervises the Operations Support Team and the Accident Assessment Team.

~~3) Plant Engineering Advisor EOF~~

~~The Plant Engineering Advisor reports to the EOF Manager. The Coordinator supports the EOF Manager and ECO with technical information and engineering support regarding the affected unit.~~

3~~4~~) ~~Offsite~~ Radiological Assessment~~Monitoring~~ Coordinator (~~O~~RA~~M~~C) CERC~~EOF~~

The ~~O~~RA~~M~~C reports to the Technical Support ~~EOF~~ Manager and is responsible for directing~~s~~ performance of emergency dose calculations; directing field team radio operator activities; dispatching Offsite Field team members, as necessary; tracking the dose of Offsite Filed 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 ~~activities of the EOF radiological~~Accident ~~a~~Assessment Team~~staff. These duties include specific responsibilities: recommending changes in the event classification and PARs based on effluent releases or dose projections, assisting the EOF Manager in the evaluation of the significance of an emergency with respect to the public, and advising the EOF Manager on the need for emergency exposures or for issuance of Potassium Iodide (KI) to the Field Teams.~~

4) Accident Assessment Team CERC

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

~~5) Dose Assessor EOF~~

~~The Dose Assessor reports to the Offsite Radiological Monitoring Coordinator and operates the dose assessment program, interprets radiological data from the field monitoring teams, and provides PARs based on dose projections to the Offsite Radiological Monitoring Coordinator.~~

5~~7~~) Operations Support ~~Communications~~ Coordinator CERC~~EOF~~

The Operations Support ~~Communications~~ Coordinator~~–~~ reports to the TSM ~~EOF Manager. The Coordinator~~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 mitigations. The Coordinator supervises the Operations Support Team.~~completing the Emergency Notification Forms, oversight of the actions taken by the State/County Communicators in support of notifications. This role may be filled concurrently by the EOF EP Advisor.~~

6) Operations Support Team CERC

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

~~8) State/County Communicator EOF~~

~~The State/County Communicator reports to the EOF Manager and ensures that initial notifications are communicated to the offsite officials within 15 minutes after the change in classification or a change in PARs and that follow-up notifications are made within about 60 minutes of the previous notification. This position will exchange information with appropriate state and county agencies regarding emergency notification forms (green sheets) or other questions that may arise.~~

~~9) Plant Security Advisor EOF~~

~~The Advisor reports to the EOF Manager and will be responsible for maintaining EOF security, coordinating EOF security with site security, and interfacing with local law enforcement, as needed.~~

7~~10~~) Resource Support Manager~~General Services Coordinator~~ CERC~~EOF~~

The Resource Support Manager (RSM) ~~Coordinator~~ reports to the CRM~~EOF Manager~~ and is~~will be~~ responsible for logistical and administrative support for the CERC. The RSM supervises the Resource Support Team~~maintaining and coordinating document services, transportation, personnel accommodations, temporary offsite facilities and communications, meals, and procurement and delivery of items requested by the ERO~~.

8) Resource Support Team CERC

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.)

9) Nuclear News Manager CERC

The Nuclear News Manager (NNM) reports to the CRM and is responsible for overall control of the Joint Information System (JIS) including media and public information functions.

10) News Team CERC

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

~~c. Emergency Joint Public Information CenterOrganization (EPIO) (Figure B-1d): The EPIOJIC is part of the overall ERO that is activated during an emergency. It functions under the ECO and gets support from the EOF Manager.~~

~~The EPIO JIC consists of corporate and station personnel who are involved with emergency response efforts necessary to coordinate VCSNS public notices with offsite agency public information updates. This organization operates out of the Joint Information Center (JIC) and the ICSC. Collectively, members of the JICEPIO provide for the following activities during an emergency:~~

- ~~Development, approval, and issuance of news releases~~
- ~~Coordination and conduct of media briefings~~
- ~~Rumor control~~
- ~~Media monitoring and correction of misinformation~~

~~All EPIOJIC personnel shall have the authority to perform assigned duties in a manner consistent with the objectives of this plan. In addition to maintaining adequate documentation of the event, position responsibilities include:~~

11) Chief Technical Spokesperson CERC~~JIC~~
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 ~~providing~~ media, and conducting press briefings. The CTS supervises the Media Briefing Support Team.~~, coordinating with the other Public Information Officers, and providing news information to the media.~~

12) Media Briefing Support Team CERC
The Media Briefing Support team will assist the CTS by providing technical advice and interface with offsite response organization public information staff.

~~T2) Joint Information Center Coordinator JIC~~
~~The JIC Coordinator reports to the Chief Technical Spokesperson and is responsible for ensuring the operability of the JIC and supervision of monitoring activities in the JIC. Ensures media is being monitored from the JIC and ICSC.~~

~~3) Technical Briefer JIC~~
~~The Technical Briefer reports to the Chief Technical Spokesperson and assists in obtaining technical and plant status information for use in news releases and media briefings.~~

~~4) Corporate Support Director (CSD) ICSC~~
~~The Corporate Support Director interfaces with the VCS Emergency Control Officer (ECO) (or Emergency Director (ED) if the EOF is not activated) and is responsible for providing direction to the ICSC, authorizing augmentation by additional corporate resources, and approving press releases.~~

~~The above listed ERO positions form the basis of VCSNS emergency response. If needed, any company personnel and resources can and will be used to ensure the safety of offsite populations, station personnel, and protection of station equipment needed to maintain nuclear safety.~~

6. **Emergency Response Organization Block Diagram**

~~Annex 1 Table 2-1 and~~ Part 2 Section B~~-1~~ and Table B-1a, list the basis for the ERO and the supporting positions assigned to interface with federal, state, and county authorities. Section B.5 discusses specific responsibilities and the interrelationships for these positions.

7. **Industry/Private Support Organizations**

VCSNS retains contractors to provide supporting services. A contract/purchase order with a private contractor is acceptable in lieu of an agreement letter for the specified duration of the contract. Institute of Nuclear Power Organization (INPO), Electric Power Research Institute (EPRI), and Nuclear Energy Institute (NEI) maintain a coordination agreement on emergency information with their member utilities.

Among services currently provided are the following:

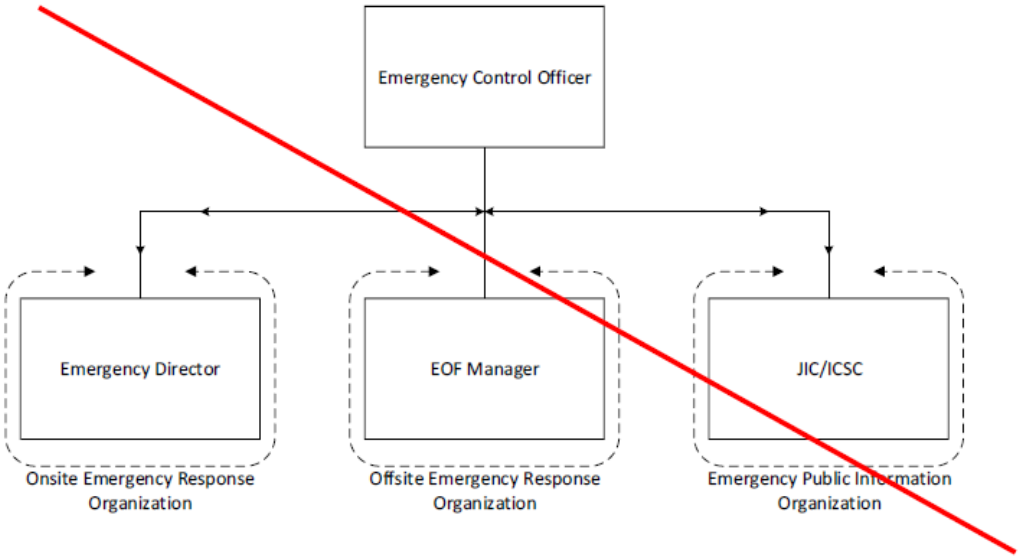
a. Institute of Nuclear Power Operations (INPO): Experience has shown that a utility may need resources beyond in-house capabilities for the recovery from a nuclear plant emergency. One of the roles of INPO is to assist affected utilities by quickly applying the resources of the nuclear industry to meet the needs of an emergency. INPO has an emergency response plan that enables it to provide the following emergency support functions:

- Assistance to the affected utility in locating sources of emergency personnel, equipment, and operational analysis.
- INPO provides the "Nuclear Network," or its replacement, electronic communications system to its members, participants, NEI, and EPRI to coordinate the flow of media and technical information about the emergency.
- VCSNS may obtain utility industry information and assistance from any party to this agreement through the coordination of INPO.

To support these functions, INPO maintains the following emergency support capabilities:

- A dedicated emergency call number
- Designated INPO representative(s) who can be quickly dispatched to the VCSNS ERO to coordinate INPO support activities and information flow
- The 24-hour-per-day operation of an Emergency Response Center at INPO headquarters

INPO will be notified (via the designated emergency call number) for all situations involving an Alert, Site Area Emergency, or General Emergency declaration. INPO has coordinated the preparation of a Voluntary Assistance Agreement for Transportation Accidents. Dominion Energy has signed this agreement which establishes the rights and responsibilities of electric utilities in requesting or providing assistance for response to a transportation accident involving nuclear materials.



~~Figure B-1a: Overall ERO Command Structure~~

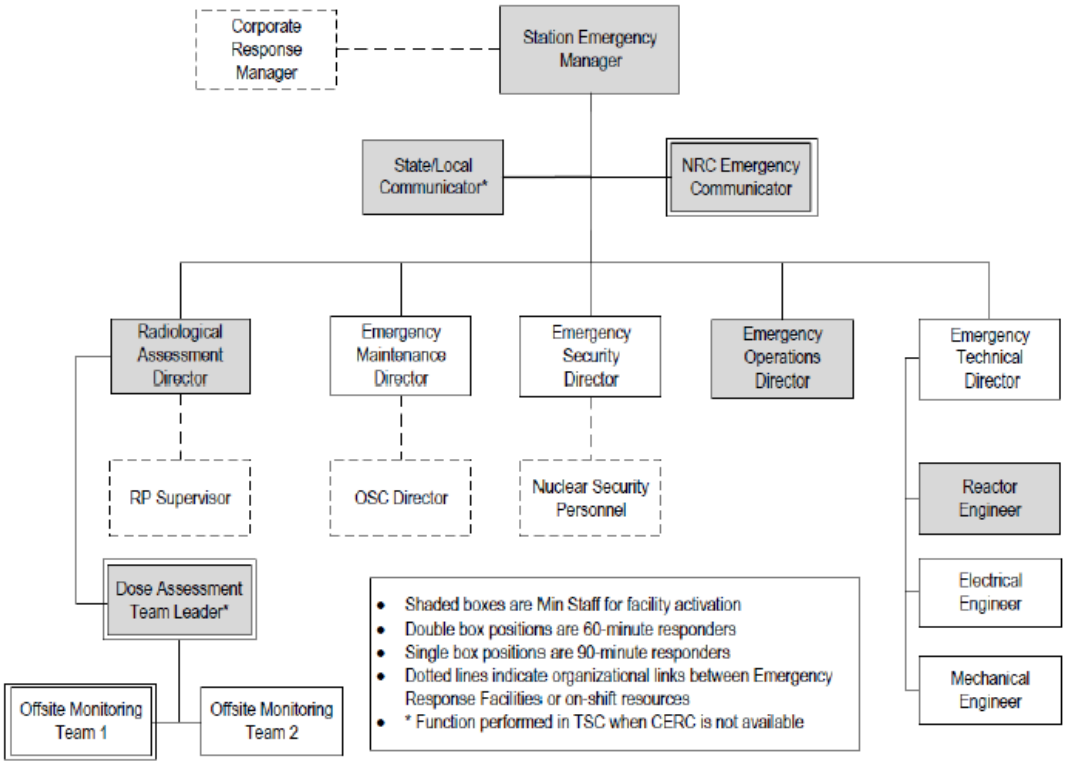
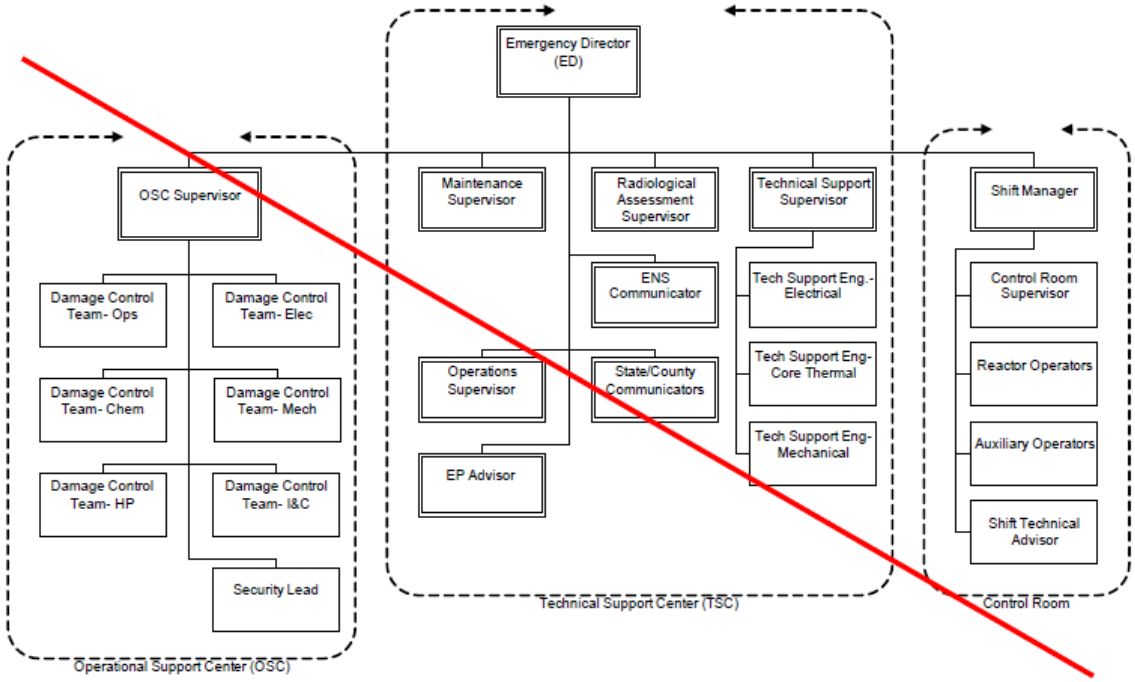


Figure B-1a: TSC Organization



~~Figure B-1b: Onsite Emergency Response Organization~~

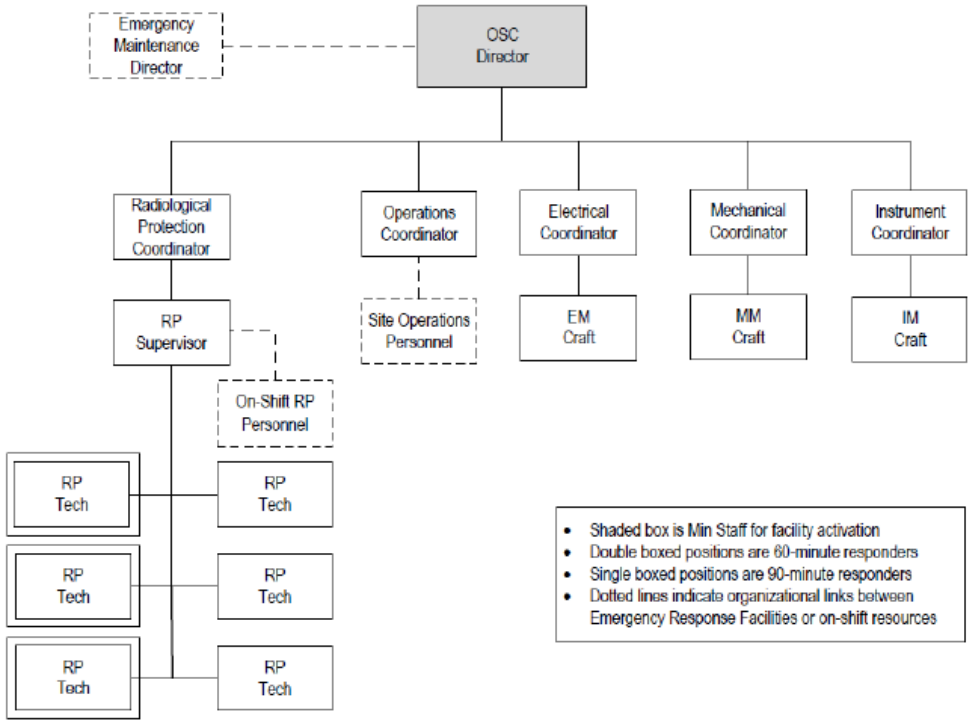
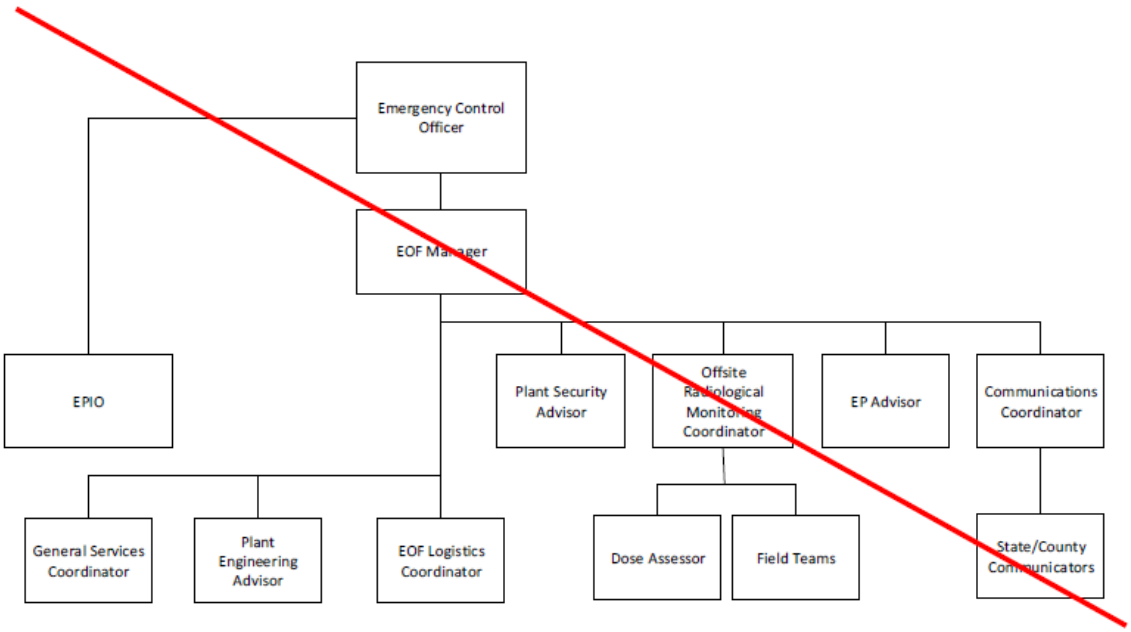


Figure B-1b: OSC Organization



~~Figure B-1c: Offsite Emergency Response Organization~~

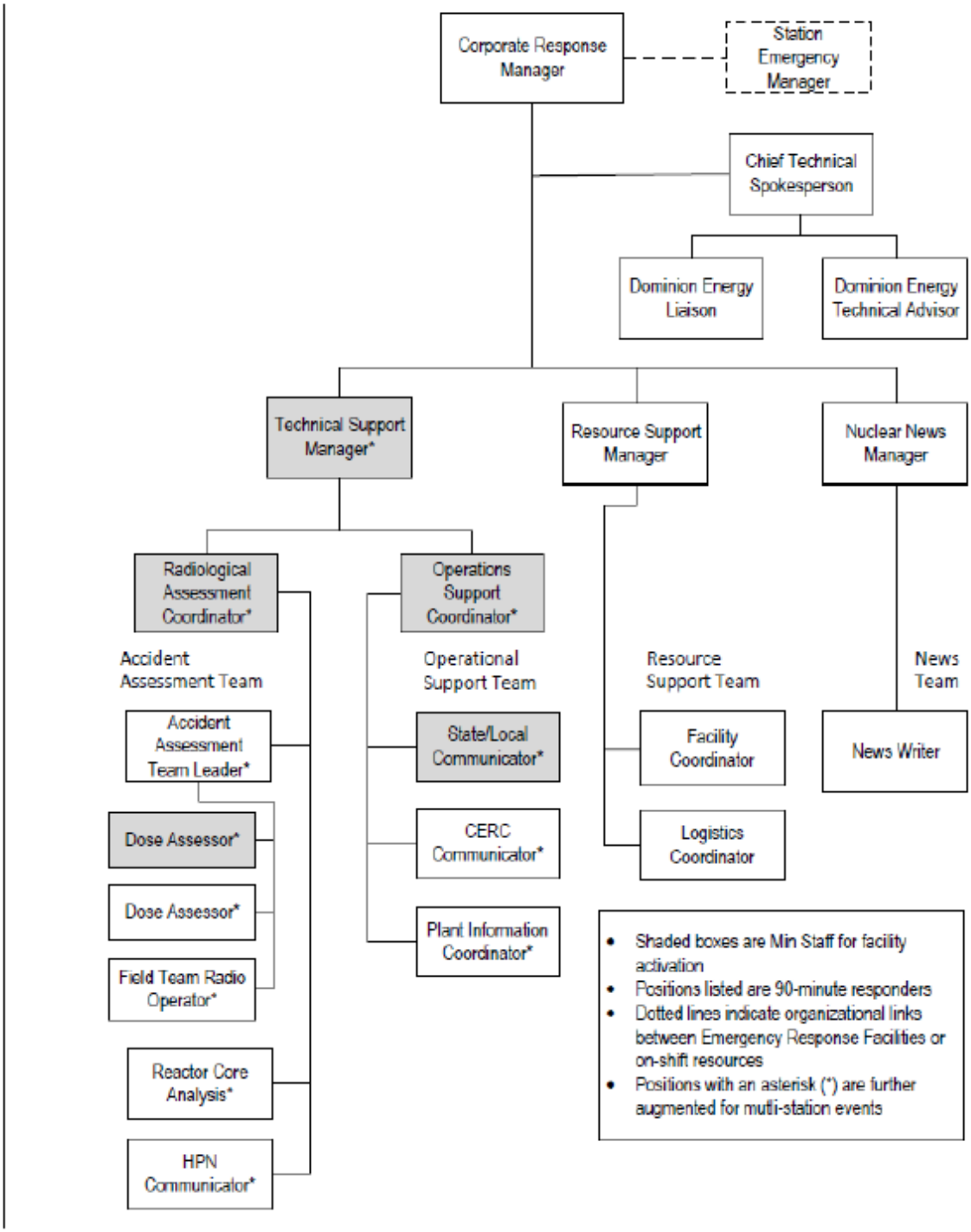
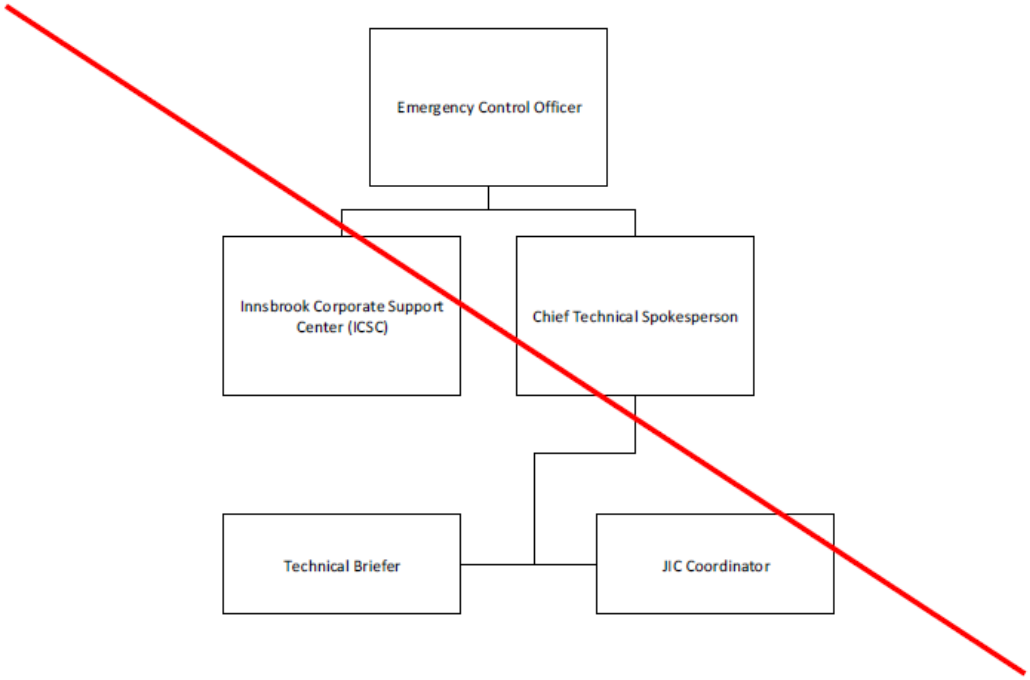


Figure B-1c: CERC Organization



~~Figure B-1d: Emergency Public Information Organization~~

~~Table B-1a: Staffing Requirements for the VCSNS ERO~~

Functional Area	Major Tasks	Emergency Positions (Facility)		Staffing - Shift/ERO		
				Shift Staffing	30 Minute ERO Staffing	~60 Minute ERO Staffing**
1. Plant Operations and Assessment of Operational Aspects	Control Room Staff	Shift Manager/Interim ED	(CR)	1		
		Control Room Supervisor	(CR)	1		
		Reactor Operator	(CR)	2		
		Auxiliary Operator	(CR)	5		
2. Emergency Direction and Control	Command and Control	Interim Emergency Director	(CR)	(a)		
		Emergency Director	(TSC)	-------	-------	1(a)
		EOF Manager	(EOF)	-------	-------	1(a)
3. Notification & Communication	Emergency Communications	Interim Emergency Director	(CR)	(a)		
		State/County Communicator	(CR/TSC)	1(g)	1	
		Emergency Director	(TSC)	-------	-------	(a)
		State/County Communicator	(TSC or EOF)	-------	-------	1(g)
		EOF Manager	(EOF)	-------	-------	(a)
		Emergency Preparedness Advisor	(TSC)	-------	-------	1
		Communications Coordinator	(EOF)	-------	-------	1
	Plant Status	ENS Communicator	(TSC)	-------	-------	1

Functional Area	Major Tasks	Emergency Positions (Facility)	Staffing - Shift/ERO		
			Shift Staffing	30 Minute ERO Staffing	~60 Minute ERO Staffing**
4. Radiological Assessment and Support of Operational Accident Assessment	Offsite Dose Assessment	Health Physics Specialist (OSC)	-------	1	
		Offsite Rad Monitoring Coordinator (EOF)	-------	-------	1
		Dose Assessor/Health Physics (EOF)	1	-------	1
	Offsite Radiological Monitoring	Field Monitoring Teams (EOF)			
		Health Physics Specialist (or qualified personnel)	-------	1(h)	1
		Drivers	-------	1(h)	1
	Onsite Radiological Monitoring	Field Monitoring Teams (OSC)			
		Health Physics Specialist (or qualified personnel)	-------	1	1
	In-plant Surveys	Health Physics Specialist (OSC)	1	1	1
	Chemistry	Chemistry Specialist (OSC)	1	-------	1
	HP Supervisory	Plant Radiological Monitoring Director (OSC)	-------	-------	1
5. Plant System Engineering, Repair, and Corrective Actions	Technical Support	Shift Technical Advisor (CR)	1		
		Operations Supervisor (CR/TSC)	-------	-------	1
		Technical Support Supervisor (TSC)	-------	-------	1
		Technical Support Engineer – Core Thermal (TSC)	-------	1(e)	
		Technical Support Engineer - Mechanical (TSC)	-------	-------	1
		Technical Support Engineer- Electrical (TSC)	-------	-------	1
	Repair and Corrective Actions	Damage Control Team - Mechanical (OSC)	2	-------	1
		Damage Control Team - Electrical (OSC)	1	1	1
		Damage Control Team –I&C (OSC)	1	1(h)	1
		Damage Control Team –HP(Rad Waste)(OSC)			1
		OSC Supervisor (OSC)			1
6. In-Plant Protective Actions	Radiation Protection	Damage Control Team - HP (OSC)	(e)	2	2
7. Fire Fighting	—	Fire Brigade	(c)	(f)	

Functional Area	Major Tasks	Emergency Positions (Facility)	Staffing - Shift/ERO		
			Shift Staffing	30 Minute ERO Staffing	~60 Minute ERO Staffing**
8. Rescue Operations and First Aid	—	Medical Emergency Response Team	(b)(e)	(f)	
9. Site Access Control and Personnel Accountability	Security & Accountability	Security Team Personnel	(d)		
10. Public Information	Media Interface, Information Development, Media and Rumor Control Monitoring, and Facility Operations and Control	Chief Technical Spokesperson (JIC) JIC Coordinator (JIC) Technical Briefer (JIC)	——— ——— ———	——— ——— ———	1 1 1

Numbers noted outside the parenthesis are actual personnel on shift. Numbers inside parenthesis may be provided by shift personnel assigned other functions.

(a) The Shift Manager shall function as the IED until relieved by the Emergency Director
(b) Personnel numbers depend on the type and extent of the emergency
(c) Fire Brigade per FSAR/ Technical Specifications, as applicable
(d) Per Security Plan
(e) May be provided by shift personnel assigned other functions
(f) Supported by Offsite Response Organizations (ORO)
(g) Typically S/C Communicators are used for telephone talkers only. The IED/ED may designate trained and qualified S/C Communicators to complete the Emergency Notification Form prior to approval by the IED/ED.
(h) Actual response time is 40 minutes

** ~ 60 minute staffing: TSC/OSC - from the declaration of an Alert or higher; EOF - from the declaration of a Site Area Emergency or higher; JIC at the discretion of the ECO and State

Table B-1a: Staffing Requirements for the VCSNS ERO

Functional Area	Major Tasks	Emergency Positions		Shift Staffing	60 Minutes	90 Minutes
Emergency Direction and Control	Classification/Oversight	Shift Manager (SRO)		1	-----	-----
		Station Emergency Manager	(TSC)	-----	-----	1
		Emergency Operations Director	(TSC)	-----	-----	1
		Technical Support Manager	(CERC)	-----	-----	1
Notification & Communication	Licensee, Local/State & Federal	Emergency Communicator		1	-----	-----
		State/Local Communicator	(TSC)	-----	-----	1
		NRC Emergency Communicator	(CR/TSC)	-----	1	-----
		State/local Communicator	(CERC)	-----	-----	1
Radiological Accident Assessment	Offsite Dose Assessment	Shift Dose Assessor		1*	-----	-----
		Radiological Assessment Director	(TSC)	-----	-----	1
		Dose Assessment Team Leader	(TSC)	-----	1	-----
		Radiological Assessment Coordinator	(CERC)	-----	-----	1
		Dose Assessor	(CERC)	-----	-----	1
		Operations Support Coordinator	(CERC)	-----	-----	1
	Offsite Surveys	Offsite Monitoring Leader		-----	1	1
		Offsite Monitoring Driver		-----	1	1
	In-plant / On-Site (out-of-plant) Surveys and Protective Actions	RP qualified individuals		2	3	3
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. Maintenance Coordinator	(OSC)	-----	-----	1
		Elec. Maintenance Coordinator	(OSC)	-----	-----	1
		I&C Maintenance Coordinator	(OSC)	-----	-----	1
		Site RP Coordinator	(OSC)	-----	-----	1
TOTAL:				**5**	**7**	**25**

*May be performed by someone filling another position having functional qualifications

Section C: Emergency Response Support and Resources

This section describes the provisions for requesting and effectively using support resources and for accommodating offsite officials at the VCSNS emergency response facilities.

1. Federal Response Support and Resources

Assistance is available from federal agencies through the NRF. The lead federal agency who provides direct assistance to VCSNS during an emergency is the NRC. Other federal agencies, such as the DHS and the DOE provide assistance to the state through implementation of the NRF.

a. Sections A and B of this plan identify the specific individuals by title who are authorized to request federal assistance.

b. Federal agencies that may provide assistance in direct support of VCSNS in the event of an accident are identified in Section A of this plan. If needed, federal resources are made available to VCSNS in an expeditious and timely manner.

c. Each emergency response facility has the equipment and communications capability necessary for a continuous high level of response, interaction, and communication among key personnel during emergency conditions. The emergency facilities are able to accommodate federal representatives with working areas provided for their use. Bbased on the NRC Response Coordination Manual 1996 (RCM-96) or NUREG-0728, accommodation guidelines for the initial site response teams. assume the following approximate numbers for each facility:

Facility	Accommodations
EOF	12
TSC	6
CR	1

d. Communication pathways provided in each of these facilities include access to dedicated landline telephones, wireless telephones and FTS telephones as provided by the NRC and include the Reactor Safety Counterpart Link (RSCL), Management Counterpart Link (MCL), the Protective Measures Counterpart Link (PMCL), and the Local Area Network (LAN). These FTS lines are in place in the appropriate VCSNS emergency response facilities and are for use by the NRC Response Team upon their arrival. The VCSNS ERO does not normally utilize these communication links.

2. Liaisons

a. The NRC, FEMA, and the state(s) may dispatch representatives to the CERCEOF or the V.C. Summer Nuclear Operations Building (NOB) where accommodations have been provided.

b. At the Site Area Emergency level and above, VCSNS personnel are assigned as liaisons to the state of South Carolina, Lexington County, Richland County, Newberry County, and Fairfield County EOCs, when they are activated. These representatives act as technical

Section D: Emergency Classification System

This section describes the classification and emergency action level scheme used to determine the minimum response to an abnormal event at the station. This scheme is based on plant systems, effluent parameters, and operating procedures for each unit. The initial response of federal, state, and county agencies depends on information provided by the ERO. The station's Emergency Preparedness Staff works closely with the state of South Carolina and county agencies to ensure consistency in classification schemes and procedural interfaces.

1. Emergency Classification System

The Emergency Plan provides for classification of emergencies into four (4) categories or conditions, covering the postulated spectrum of emergency situations. They are:

- Unusual Event
- Alert
- Site Area Emergency
- General Emergency

Each classification is characterized by EALs or event Initiating Conditions (IC) and addresses emergencies of increasing severity.

a. Unusual Event: Events are in progress or have occurred that 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.

This is the least severe of the four levels. The purpose of this classification is to bring response personnel and offsite agencies to a state of readiness in the event the situation degrades and to provide systematic handling of information and decision making. The Unit 1 Shift Manager will classify an Unusual Event and become the ISEM~~D~~.

Required actions at this classification include:

- Notifications to station and company management
- Notification, within 15 minutes, of the state and counties
- At the discretion of the ISEM~~D~~, or the station management, full or selective staffing of any one or more of the emergency response facilities may be initiated
- Notification of the NRC immediately after state/local notifications and within~~as soon as possible but within~~ 60 minutes of classification
- Assessment of the situation and response as necessary, which may include escalating to a higher classification when and if conditions warrant

- When the event is terminated, close-out is performed over communication links to offsite authorities (i.e., NRC, state, county), participating in the response by providing a summary of the event

- Provide a formal written summary transmitted to the state and counties within 24 hours. The formal written summary can be accomplished via an email summary from termination of an Unusual Event.

b. Alert: Events are in progress or have occurred that involve an actual or potential substantial degradation of the level of safety of the plant or a security event that involves probable life-threatening risk to site personnel or damage to site equipment because of HOSTILE ACTION. Any releases are expected to be limited to small fractions of the EPA Protective Action Guideline (PAG) exposure levels.

The purpose of this classification is to ensure that emergency response personnel are readily available and to provide offsite authorities with current status information. An Alert will be classified as the initiating event or as escalation from an Unusual Event. ~~In either case, the classification will most likely be made by the Shift Manager (IED) before the transfer of command and control.~~

Required actions at this classification include:

- Notifications to station management

- Notification, within 15 minutes, of the state and counties

- Activation of the ~~Onsite~~ ERO

- Transfer of command and control

- Notification of the NRC immediately after State/Local notification not to exceed~~as soon as possible but within~~ 60 minutes from the time of classification

- Notification of INPO and ANI

- Assessment of the situation and response as necessary, which may include escalating to a higher classification if and when conditions warrant

- Onsite and offsite field teams are sent to staging areas or dispatched to monitor for releases of radiation to the environment

- Keeping offsite authorities informed of plant status by providing periodic updates to include meteorological and radiological data

- When the event is terminated, close-out is performed over communication links to offsite authorities participating in the response by providing a verbal summary of the event (i.e., NRC, state, county), followed by formal written summary transmitted to the state and counties within 8 hours

c. Site Area Emergency: Events are in progress or have occurred that involve actual or likely major failures of plant functions needed for protection of the public or HOSTILE ACTIONS that result in intentional damage or malicious acts 1) toward site personnel or equipment that could lead to the likely failure of, or 2) that prevent effective access to, equipment needed for the protection of the public. Any releases are not expected to result in exposure levels which exceed EPA PAG exposure levels beyond the site boundary.

~~This classification will most likely be made by the ED following activation of the TSC with notifications being developed in the EOF~~.

Required actions at this classification, in addition to those listed under the Alert level, include:

- Activation of the ~~Offsite~~ ERO ~~and Emergency Public Information Organization~~
- If not previously performed, assembly/accountability shall be performed and site evacuation of nonessential personnel shall be initiated
- Dispatch of plant technical liaisons to the county and state EOCs when they are activated to provide a plant-knowledgeable individual to explain plant communications regarding the emergency and support the interaction with the offsite authorities during the emergency
- Keeping offsite authorities informed of plant status by providing periodic updates to include meteorological data and projected or actual doses for any releases that have occurred
- When the event is terminated, close-out is performed over communication links to offsite authorities participating in the response by providing a verbal summary of the event (i.e., NRC, state, county), followed by formal written summary transmitted to the state and counties within 8 hours

d. General Emergency: Events are in progress or have occurred that 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 EPA PAG exposure levels offsite for more than the immediate site area.

The purpose of this classification, in addition to those of the Site Area Emergency level, is to initiate predetermined protective actions for the public and provide continuous assessment of information from monitoring groups. ~~The classification will most likely be made by the ED following activation of the TSC with notifications and PARs being developed in the EOF, following activation.~~

Required actions at this classification, in addition to those listed under the Alert and Site Area Emergency, include:

- A PAR will be determined and issued
- Assessment of the situation and response as necessary

- When the event is terminated, close-out is performed over communication links to offsite authorities participating in the response by providing a verbal summary of the event (i.e., NRC, state, county), followed by formal written summary transmitted to the state and counties within 8 hours.

e. Classification Downgrading: VCSNS's policy is that emergency classifications shall not be downgraded to a lower classification. Once declared, the event shall remain in effect until no classification is warranted, a higher classification is required, or until such time as conditions warrant entry into the Recovery Phase.

f. Guidance for Termination of an Emergency: The purpose of terminating an emergency is to provide an orderly turnover of plant control from the EROs to the normal VCSNS plant organization. Termination of the emergency is authorized by the CRM~~ECO~~ in command and control. If the emergency is classified as an Alert or higher, the ISEM~~D~~ must await the activation of the emergency response facilities and turn over command and control to the SEM and CRM~~ECO~~ before initiating the Recovery/Termination Phase~~Checklist~~. The considerations provided in the ~~Recovery/Termination Checklist in the~~ emergency plan procedures must be performed before exiting the emergency event. Consultation with governmental agencies and other parties shall be conducted before termination of an event classified as Site Area Emergency or General Emergency. Notifications shall be transmitted to appropriate agencies to terminate an event. When a classified event is terminated a Recovery Phase will be entered.

g. Recovery Phase: That period when the emergency phase is over and activities are being taken to return the situation to a normal state (acceptable condition). The plant is under control and no potential for further degradation to the plant or the environment is believed to exist.

Entry into the Recovery Phase will be authorized by the CRM~~ECO~~ after consultation with the SEM~~ED and EOF Manager~~ at an Alert or higher classification and the offsite authorities if a Site Area Emergency or General Emergency was declared. The ISEM~~D~~ may enter the Recovery/Termination Phase after the Unusual Event when conditions warrant.

Required actions for Recovery Phase~~at this classification~~ include:

- The state and the NRC shall be consulted prior to entry into recovery from a Site Area Emergency or a General Emergency.
- Notifications will be made to station management, state, counties, and NRC.
- A Recovery organization will be established to manage repairs to return the unit to an acceptable condition, and support environmental monitoring activities as requested in coordination with federal and state efforts.
- INPO and ANI are notified of Recovery~~ classification~~.

h. VCSNS Security Plan: VCSNS has a Security Plan that complies with the requirements of 10 CFR 73. The interface between the Radiological Emergency Plan and the Security Plan is one of parallel operation. The plans are compatible. The Radiation Emergency Plan response measures, once initiated, are executed in parallel with measures taken in accordance with the Security Plan. During a classified event, the individual in overall command and control has responsibility for implementing both plans.

Threats made to VCSNS facilities are evaluated in accordance with established threat assessment procedures and the Security Plan. The Security Plan, Appendix C, Safeguards Contingency Plan, identifies situations that could be ICs for EAL classifications. Contingency events include bomb threats, attack threats, civil disturbances, Protected Area intrusions, loss of guard/post contact, vital area intrusions, bomb devices discovered, loss of guard force, hostages, extortion, fire/explosions, internal disturbances, security communications failure, and obvious attempts of tampering. The Safeguards Contingency Plan provides guidance for decisions and actions to be taken for each security contingency event. As guidance, the Safeguards Contingency Plan allows for differing responses depending upon the assessment of the actual situation within each contingency event classification.

The assessment of any security contingency event and the decision to initiate, or not to implement the Radiation Emergency Plan, will be the responsibility of the Shift Manager ~~or ECO~~. All identified security contingency events have the potential of being assessed as ICs for a radiological emergency declaration.

Section E: Notification Methods and Procedures

This section describes the notification of state and county response organizations, federal agencies, and VCSNS emergency response personnel. It outlines the content of initial and follow-up messages to response organizations within the plume exposure pathway EPZ.

1. Bases for Emergency Response Organization Notification

VCSNS, in cooperation with state and county authorities, has established mutually agreeable methods and procedures for notification of offsite response organizations consistent with the emergency classification and action level scheme. Notifications to offsite agencies include a means of verification or authentication such as the use of dedicated communications networks, verification code words, or providing call-back verification phone numbers.

Notification for Transportation Accidents: A Transportation Accident is defined in 49 CFR 171.15 and 49 CFR 171.16. If a Transportation Accident involving material in the custody of a VCSNS facility occurs, the appropriate internal and offsite agencies will be notified in accordance with VCSNS procedures.

2. Notification and Mobilization of Emergency Response Personnel

Emergency implementing procedures are established for notification and mobilization of emergency response personnel as follows:

a. Onsite: When an emergency is declared, reclassified, or terminated, an announcement is made (over the plant public address system or by other means) that includes the emergency classification declared and response actions to be taken by site personnel.

At the Unusual Event classification, select ERO augmentation personnel may be notified and requested to remain available to respond. At an Alert classification or higher, ERO augmentation personnel are notified for activation of the TSC, ~~and~~ OSC and CERC~~at a Site Area Emergency or higher augmentation personnel are notified for activation of the EOF and JIC~~ using the ERO Notification System.

Section F: Emergency Communications

This section describes the provisions used for prompt communications among principal EROs, communications with the ERO, and communications with the general public.

1. Communications/Notifications

Dominion Energy has extensive and reliable communication systems installed at VCSNS. Examples of the communications network include systems such as normal and dedicated telephone lines on landlines, fiber-optic voice channels, cell phones, satellite phones, mobile radio units, portable radios, and computer peripherals. This network provides:

- Voice communication through normal telephone, dedicated line, and automatic ring-down between selected facilities, conference call capability, speaker phones, and operator assistance, where required. In addition, there are satellite phone and cell phone capabilities to maintain communication links to the emergency response facilities and offsite authorities.
- Communications between emergency vehicles and appropriate fixed locations, as well as with state mobile units and fixed locations
- Facsimile, computer network, and modem transmission

Figure F-1 depicts the initial notification paths and the organizational titles from the VCSNS Emergency Response Facilities (ERFs) to federal, state, and county EROs, and industry support agencies. The primary and alternate methods of communication, and the NRC communications network, are illustrated on Figures F-2 and F-3.

a. VCSNS maintains the capability to make initial notifications to the designated offsite agencies on a 24-hour-per-day basis. The ~~offsite~~ORO notification system~~, referred to as the Emergency Management Network (EMNet),~~ provides communications to state and county warning points and EOCs from the Control Room, TSC, and the ~~EOF~~CERC. Backup methods vary by facility and may include facsimile, commercial telephone lines, radios, and internet. State and county warning points are continuously staffed.

b-d. VCSNS has established several communication systems that ensure reliable and timely exchange of information necessary to provide effective command and control over any emergency response (1) between the station and state and county agencies within the EPZs, (2) with federal EROs, (3) between the station, the ~~EOF~~CERC~~,~~, and the state and county EOCs, and (4) between ERFs and Field Monitoring Teams. A general description of the systems is as follows:

1) Private Branch Exchange (PBX) Telephone System: The PBX telephone system provides communication capability between telephones located within the VCSNS facilities through direct dialing. The PBX is used to connect the Control Room, TSC~~,~~ and OSC~~, and the EOF.~~ The PBX telephone system also provides for outside communications through interconnections with the corporate fiber optic telephone communications system and commercial telephone systems.

~~2) EMNet (ORO Dedicated System): The EMNet is a dedicated commercial communications system that has been installed for the purpose of notifying state and county authorities of declared emergencies at VCSNS. This system links together the VCSNS Control Room, EOF, TSC, and state and county authorities as appropriate.~~

2~~3~~) Local Commercial Telephone System: This system provides standard commercial telephone service through the public infrastructure, consisting of central offices and the wire line carrier. The commercial telephone system includes connections to PBX, emergency telephone system, dedicated lines to emergency facilities~~, and lines to the JIC.~~ The commercial vendor provides primary and secondary power for their lines at their central office to support the "Federal Telephone System".

3~~4~~) ERDS: As prescribed by 10 CFR 50 Appendix E.VI, ERDS will supply the NRC with selected plant data points on a near real time basis. ERDS is activated by the ERO as soon as possible but not later than one hour after declaration of an Alert, Site Area Emergency, or General Emergency. The selected data points are transmitted via modem or a Virtual Private Network (VPN) to the NRC at approximately 1-minute intervals. The ERO has backup methods available to provide required information to the NRC in the event that ERDS is inoperable during the declared emergency.

4~~5~~) Field Monitoring Team Communications: A separate radio communications channel has been installed to allow coordinated environmental monitoring and assessment during an emergency. This system consists of the necessary hardware to allow radio communication between the Control Room, ~~EOF~~CERC, and mobile units in VCSNS vehicles. Commercial cell phones, satellite phones, or other means are available as backup to the primary field team communications system.

5~~6~~) Satellite Telephones: Satellite telephones are provided to the Control Room, the TSC, and the ~~EOF~~CERC providing a backup communication link in the event that the landlines are rendered inoperative. These units are equipped with outside antennae to permit the use of the communications device inside the facilities.

6~~7~~) 800 MHz Radio: This radio system is an 800 MHz Dominion Energy Corporation system that is divided into trunks which are used by corporation subsidiaries. The trunk system at VCSNS is comprised of channels for Maintenance, Operations, Health Physics, Field Monitoring Teams, etc to allow a means of communications between facility personnel and field personnel for routine work and emergency conditions. The system utilizes both base stations and remote units in conjunction with associated cabling, repeaters, and antennas to provide optimum coverage for two-way continuous transmission.

7~~8~~) Dominion Energy Fiber Optic System: The fiber optic system connects the company's main office in Cayce, South Carolina with the Summer Complex which includes V.C. Summer Nuclear Station, Fairfield Pump Storage Unit, Parr Steam and Hydro Unit and the New Nuclear Deployment Building. Summer Station is the hub for this system. The system contains 72 fiber optic channels.

8~~9~~) Main & Fuel Handling Page System (Gaitronics): This system of networked phone stations and speakers strategically located throughout the station. Each phone station contains a telephone type receiver-transmitter handset, and channel selector switches. The system is equipped with an alarm encoder for alerting personnel through a series of designated tones. The Fuel Handling Page System is Line 5 on the Main Page System is only available in areas with fuel handling capabilities.

9~~10~~) Redundant Paging System: This independent system of networked phone stations and speakers strategically located in areas of the station involved in the process of Engineered Safety Features shutdown. The system contains its own phone stations, power supplies, line balance equipment, and cable system. The system is distinguished by its red color.

10~~1~~) Maintenance Jack System: The Maintenance Communication system consists of a network of strategically located jack stations. Each jack station has four separately wired receptacles mounted on it, providing four independent communications channels. Several headsets, each consisting of a padded earphone type receiver and a boom-mounted noise-canceling microphone are provided for hands-free operation of the system. Each headset is equipped with a belt clip amplifier and 30 feet of cable.

11~~2~~) In addition, station communication links exist to ensure appropriate information transfer capabilities during an emergency. The station may also use its video conferencing systems, computer network connections, wireless telephones, or station radios to augment its emergency communications.

e. ERO Notification System: VCSNS uses an automated ERO Notification System that employs an automatic telephone system to rapidly notify members of the ERO. Procedures specify the course of action to be taken if the ERO Notification System fails.

f. NRC Communications (ENS and HPN): Communications with the NRC Operations Center will be performed via the NRC ENS and the HPN circuits or commercial and satellite telephone lines. Information is normally communicated to the NRC in accordance with NL-122, Regulatory Notification and Reporting, before establishing an open ENS and/or HPN line.

Installation and use of these NRC telephones is under the direction of the NRC (see Figure F-3).

Emergency Notification System: Dedicated telephone equipment is in place between the Control Room and the NRC, with an extension of that line in the TSC. A separate line is available in the CERC~~EOF~~ with the capability of being patched with the station through the NRC. This line is used for NRC event notifications and status updates. Backup power is provided for these lines.

HPN: There also exists a separate dedicated telephone between the NRC, the TSC, and the CERC~~EOF~~ for conveying health physics information to the NRC as requested or as an open communication line. Backup power is provided for these lines.

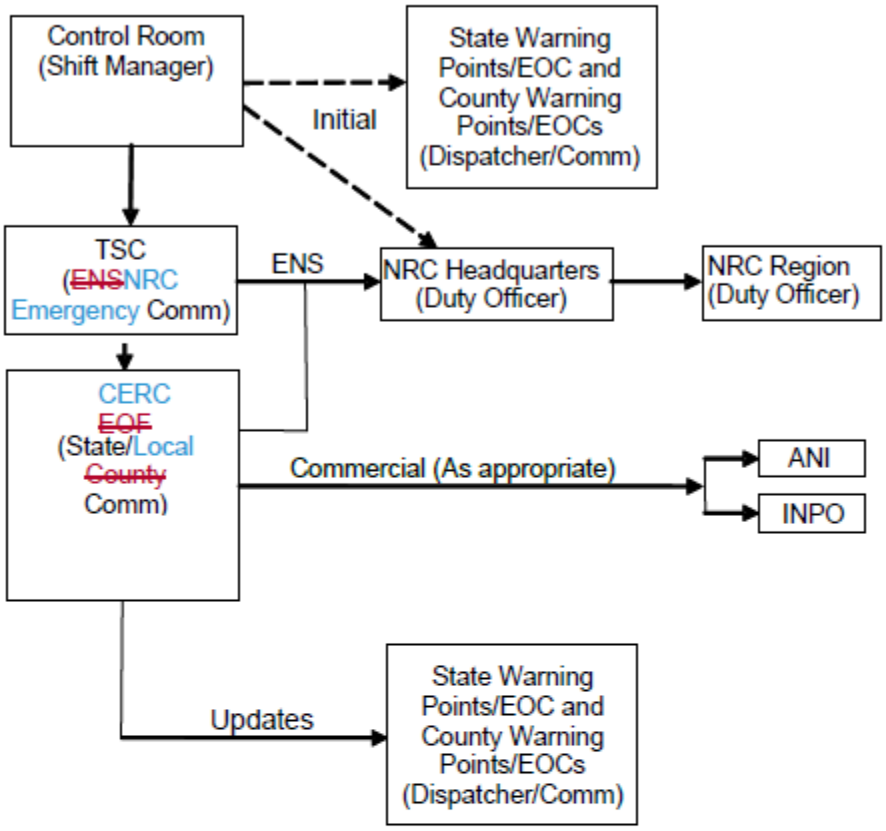
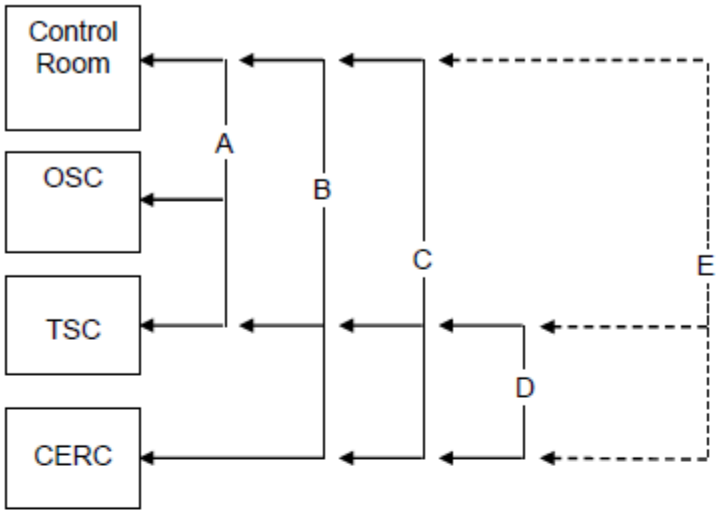


Figure F-1: Notification Scheme ~~(After Full Augmentation)~~



←——Dedicated Phone Link (Independent or Limited PBX)

←- - -Station Telephone Line (PBX or Commercial)

A = Dedicated phone link to dispatch OSC teams between the OSC, TSC, and Control Room.

B = Dedicated phone link for use by the CRM~~ECO or EOF Manager~~, SEM~~ED~~, and Shift Manager between the Control Room, the TSC, and the CERC~~EOF~~.

C = Dedicated phone link for transmission of technical data between the TSC, Control Room, and the CERC~~EOF~~.

D = Dedicated phone link to discuss mitigating activities and priorities between the TSC and CERC~~EOF~~.

~~E = Dedicated phone link to discuss changes in station or affected plant conditions and EPIO needs between the CERCEOF and the JIC.~~

~~F~~E = Station telephone line that is a communication link between activated facilities.

Figure F-2: ERF Communications Matrix

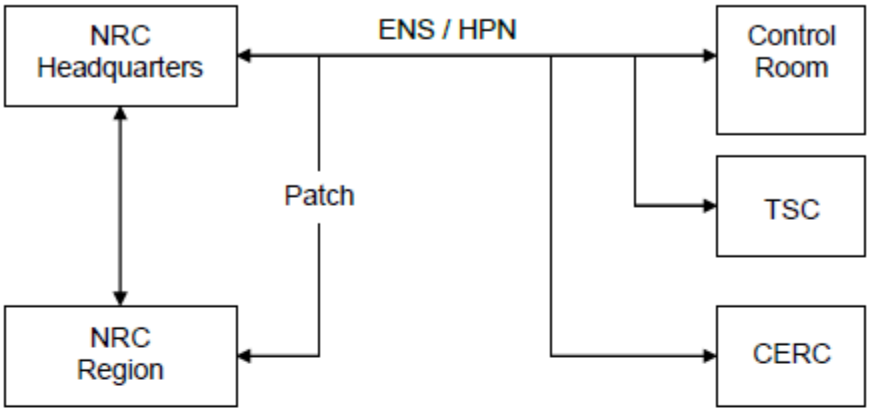


Figure F-3: NRC Communications for Nuclear Response

Section G: Public Education and Information

This section describes the VCSNS public education and information program. It outlines the methods for distributing public information materials on an annual basis and describes how the public is informed in the event of an emergency.

1. Public Information Publication

The state of South Carolina has overall responsibility for maintaining a continuing disaster preparedness public education program. The ~~EPIO~~ publication for the VCSNS is updated annually, in coordination with state and county agencies, to address how the general public is notified and what their actions should be in an emergency. Dominion Energy distributes the publication annually to all residents within the 10-mile plume exposure EPZ and to appropriate locations where a transient population may obtain a copy. The public information publication includes the following information:

a. Educational information on radiation

b. Information regarding who to contact for additional information

c. A description of possible protective measures for the public (take shelter, evacuate, and/or ingest a radioprotective drug)

d. A map of major evacuation routes

e. A list of reception centers to coordinate sheltering of evacuees and instructions on how to obtain additional information, especially for the disabled or their caretakers and those without transportation

2. Public Education Materials

Public information publications instruct the public to follow the guidance or information sent via the ANS, which may include going indoors and turning on their radios or televisions when they receive the ANS message. These publications also identify the local radio and television stations to which the public should tune in for information related to the emergency. Information is also provided to the transient population by the ANS, and by means of signs at local business establishments and at the entrances to recreational areas around the VCSNS with instructions to be followed in the event of an emergency at VCSNS. A list of radio and television stations that will transmit emergency information is provided on the signs. Telephone numbers where additional information can be obtained are also provided.

3. Media Accommodations

~~a.~~ The Dominion Energy Public Affairs Group is notified when an Unusual Event or higher emergency condition exists. They will handle public and media inquiries in the early stages of the event (until the CERC~~ICSC~~ is activated) by distributing background information, news releases, and providing information to Dominion Energy management.

News releases and official company statements to the media will be issued and made from the CERC unless otherwise requested by the State Emergency Management Division.

~~1) The JICEPI Organization: The JICEPIO is part of the ERO. It may be staffedactivated at any time at the discretion of VCSNS management.~~

~~The primary purpose of the JICEPIO is to disseminate information from VCSNS's ERO about the emergency events to the public, via the news media. However, the authority for issuance of news releases for the classification of an Unusual Event or before to ERO activation will always reside with the Dominion Energy Public Affairs Group. Upon staffingactivation, the JICEPIO has the responsibility and authority for issuance of news releases to the public after the press release is approved by the CRSMD.~~

~~The JICEPIO is comprised of senior managers from Dominion Energy who will function as spokespersons, and other individuals including personnel from VCSNS, Dominion Energy's spokespersons disseminate information to the news media/public concerning the emergency events out of the JIC.~~

~~2) The Joint Information Center: The JIC is the facility in which media personnel gather to receive information related to the emergency event. News releases are issued from the ICSC. Public information personnel operate from the JIC, which is under the direction of the Governor and functions as the single point of contact to interface with federal, state, and local authorities who are responsible for disseminating information to the public.~~

~~VCSNS uses the State JIC co-located with the State Emergency Operations Center. The JIC is equipped with appropriate seating, lighting, and visual aids to allow for public announcements and briefings to be given to the news media. Additionally, the JIC is equipped with commercial telephone lines for making outgoing calls. The JIC OrganizationEPIO functions from the JIC and ICSC in preparing and releasing VCNS information regarding the emergency event. The JIC is activated at the discretion of the State Emergency Management Division. Functions of the JIC include:~~

- ~~Serving as the primary location for accumulating accurate and current information regarding the emergency conditions~~
- ~~Providing work space and phones for public information personnel from the state, counties, NRC, FEMA, and industry related organizations~~
- ~~Providing responses to media inquiries through Media Monitoring Staff telephones that the media can call for information about an emergency~~

4. Coordination of Public Information

   a. ~~The JIC is staffed by Dominion Energy, VCSNS, and federal, state, and county government public information representatives who will be the source of public information during an emergency at the station.~~ The Chief Technical Spokesperson is the primary spokesperson for Dominion Energy. The Chief Technical Spokesperson has direct access to all necessary information (see Section B.5). All information will be coordinated before conducting news briefings.

   b. Rumors or misinformation are identified during an emergency by Dominion Energy public information personnel~~the Media Monitors and Rumor Control Monitors. They~~ who respond to telephone calls and social media from the public and the media, and monitor media reports.

5. Media Orientation

   Emergency Preparedness, in conjunction with Dominion Energy Public Affairs Group, offers programs (at least annually) to acquaint news media with the Emergency Plan, information concerning radiation, and points of contact for release of public information in an emergency.

Section H: Emergency Facilities and Equipment

Onsite and offsite facilities are available for emergency assessment, communications, first aid and medical care, and damage control. Of particular importance are the ERFs: the Control Room, TSC, OSC, and CERC~~EOF, and JIC~~.

This section describes the emergency facilities and equipment used by the ERO and outlines the requirements that aid in timely and accurate response actions. It also describes the surveillance programs used to monitor and ensure that these facilities and equipment are maintained in a high degree of constant readiness.

1. Control Room, Technical Support Center, and Operational Support Center

VCSNS has established a TSC and OSC that are~~is~~ activated upon declaration of an Alert or higher classification. ~~VCSNS has also established an OSC.~~ Until they are activated~~become operational~~, required functions of these facilities are performed by shift personnel and directed from the Control Room. These facilities may be activated at the discretion of the ISEM~~D~~ at an Unusual Event classification.

a. Control Room: The VCSNS reactor and major plant systems are operated from the Control Room. The Control Room is equipped with instrumentation to supply detailed information on the reactor and its major systems. The Control Room is continuously staffed with qualified licensed operators. The Control Room is the first onsite facility to become involved with the response to emergency events. The Control Room will be the designated location for the ISEM~~D~~. Control Room personnel must evaluate and effect control over the emergency and initiate activities necessary for coping with the emergency until such time that augmented emergency response facilities can be activated. These activities shall include:

- Reactor and plant control
- Initial direction of all plant related operations
- Accident recognition, classification, mitigation, and initial corrective actions
- Alerting of onsite personnel
- Activation of the ERO notification system
- Activation of the ERFs
- Notification of offsite agencies
- Activation of ERDS
- Continuous evaluation of the magnitude and potential consequences of an incident
- Initial dose projections
- Recommendations for immediate protective actions for the public

As other ERFs become activated, they will provide support to the Control Room. Overall command and control of the emergency will transfer to the ~~EOF~~ CERC when it is properly staffed and ready to take over these responsibilities. Throughout all emergencies, the Control Room maintains its emergency activation status until its normal operational status may be resumed or its recovery activities are initiated.

b. Technical Support Center: VCSNS has established a TSC for use during emergency situations by station management, technical, and engineering support personnel. The TSC is provided with communications links that can transmit and receive direct voice and data communications from the Control Room. These communications have alternate pathways that can also be used as needed. The TSC is activated for all emergencies classified as Alert or higher. Activation of this facility for other events is optional. When activated, the TSC functions include:

- Support for the Control Room's emergency response efforts
- Continued evaluation of event and classification of emergencies
- Assessment of the plant status and potential offsite impact
- Coordination of emergency response actions onsite~~within the Protected Area~~
- Communication with the NRC via ENS
- Activation of the ERDS or ensuring that it is activated

The TSC is the onsite location used to support the Control Room for assessment of plant status and potential offsite impact, and for implementation of emergency actions. The TSC provides technical data and information to the ~~EOF~~CERC.

Figure B-1b illustrates the staffing and organization of the TSC.

The TSC provides reliable voice communications to the Control Room, OSC, CERC~~EOF~~, and NRC. In addition, it provides facsimile transmissions capability and electronic transfer capabilities (see Section F).

The TSC is sized to accommodate a minimum of 25 personnel and their supporting equipment. This includes provisions for NRC representatives.

Personnel in the TSC shall be protected from radiological hazards, including direct radiation and airborne contaminants under accident conditions with similar radiological habitability as Control Room personnel. To ensure adequate radiological protection, periodic radiation surveys of the TSC are conducted. These systems indicate radiation dose rates and airborne radioactivity inside the TSC while in use. In addition, KI is available for use as required. In the event that the TSC becomes uninhabitable, implementing procedures will provide guidance on the transfer of duties and relocation of the staff until such time that the TSC staff is able to fulfill their duties as assigned.

The TSC has access to a complete set of as-built drawings and other records, including general arrangement diagrams, piping and instrument diagrams (P&IDs), and the electrical schematics. The TSC has the capability to record and display vital plant data, in

real time, to be used by knowledgeable individuals responsible for engineering and management support of reactor operations, and for implementation of emergency procedures.

c. Operational Support Center: The OSC is the location to where the unit's support personnel report during an emergency and from which they will be dispatched for assignments or duties in support of emergency operations. The unit's OSC shall be activated whenever the TSC is activated, but need not remain activated at the Alert level if its use is judged unnecessary by the SEM~~ED~~. At the Site Area Emergency and General Emergency levels, the unit's OSC or an alternate OSC shall be activated at all times. Activation for other events is optional. VCSNS disciplines reporting to the OSC include, but are not limited to:

- Operating personnel not assigned to the Control Room
- Radiation Protection/Chemistry~~Health Physics~~ personnel
- ~~Chemistry personnel~~
- Maintenance personnel (Mechanical, Electrical, and I&C)

Figure B-1b illustrates the staffing and organization for the OSC

The OSC is equipped with communication links to the Control Room and the TSC (see Section F). A limited inventory of supplies will be kept in the OSC or accessible to the OSC. This inventory will include respirators, protective clothing, flashlights, and portable survey instruments.

Refer to the Unit 1 Annex for additional information regarding the OSC.

~~A Back-up (Remote) OSC is included in the configuration and sizing of the Joint Information Center Building which also houses the EOF. The Back-up OSC includes a designated command area, work areas for OSC groups, and staging areas (break room/kitchen) for OSC Damage Control personnel.~~

2. Corporate Emergency Response~~Operations~~ Center~~Facility~~

~~The EOF is the location where the ECO will direct a staff in evaluating and coordinating the overall company activities involved with an emergency. Activation of the EOF is mandatory upon declaration of a Site Area Emergency or higher classification. The EOF is located in Richland County near the intersection of Bickley Road and SC Hwy 176 and is outside the 10 Mile Emergency Planning Zone and greater than 10 miles from the Technical Support Center (TSC). The EOF provides for:~~

- ~~Management of overall emergency response~~
- ~~Performance of the non-delegable emergency notification and PAR development and notification functions when in command and control~~
- ~~Notification of appropriate corporate and station management~~
- ~~Coordination of offsite radiological and environmental assessments~~
- ~~Determination of recommended public protective actions~~
- ~~Management of recovery operations from an Alert or higher classification~~

- ~~Coordination of emergency response activities with federal, state, and county agencies~~

~~The EOF was designed with the following considerations:~~

- ~~The EOF is provided with access limiting devices when not in use and assigned security personnel during activation to ensure that only authorized personnel are permitted to enter the facility.~~
- ~~The location provides optimum functional and availability characteristics for carrying out overall strategic direction of VCSNS emergency and support operations, determination of public protective actions to be recommended to offsite officials, and coordination with federal, state, and county agencies.~~
- ~~It is of sufficient size to accommodate about 50 people including NRC representatives.~~
- ~~It meets the criteria of NUREG 0696, "Functional Criteria for Emergency Response Facilities" regarding location, structure, habitability, size, communications, instrumentation, data system equipment, power supplies, technical data, records availability, and management. The EOF power is backed with an emergency diesel generator and has an uninterruptable power source to maintain loads during the transfer between power sources.~~
- ~~It is equipped with reliable voice communications capabilities to the TSC, the Control Room, the NRC, and the state and county EOCs. In addition, the EOF has facsimile, computer transmission, and electronic transfer capabilities.~~
- ~~Equipment is provided to gather, store, and display data needed in the EOF to analyze and exchange information on plant conditions with the station. The EOF technical data system receives, stores, processes, and displays information sufficient to perform assessments of the actual and potential onsite and offsite environmental consequences of an emergency condition.~~
- ~~The EOF has ready access (either through hard copies or electronic media) to plant records, procedures, and emergency plans needed for effective overall management of VCSNS emergency response resources.~~
- ~~It is designed to support a remote TSC and remote OSC in the event of an emergency which limits access to the site.~~

The CERC is the consolidated emergency operations facility (EOF) and Joint Information Center (JIC) for VC Summer Nuclear Station, North Anna Power Station and Surry Power Station. The CERC is located at the Innsbrook Technical Center in Glen Allen, Virginia. The facility provides workstations for Federal and State officials who may be assembled at this location. This facility is the designated central location 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. Official company statements to the media are made from a designated location at the CERC utilizing a collaborative platform by the Chief Technical Spokesperson. These company statements are prepared at the CERC.

~~3. Joint Information Center~~

~~The JIC is the location where the Chief Technical Spokesperson will direct a staff in providing and coordinating the release of information during an emergency. The JIC is co-located with the State Emergency Management Division outside the 10 mile EPZ. The JIC provides facilities and equipment for VCSNS, federal, state, and county agencies to interface with each other and to provide a location where information regarding the event is released to the media and general public.~~

3. Alternative Facility When Under Threat of Experiencing a Hostile Action

The VC Summer facility located at 113 Ballentine Crossing Lane, Irmo SC serves as the Alternative Facility for emergency response staff if the site is under threat of or experiencing a 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 Alternative Facility, working with the CERC organization, provides capability for engineering assessment activities, including damage control team planning and preparation.

4. Location for Offsite Agency Coordination

The V.C. Summer Nuclear Operations Building (NOB) is the location made available 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.

~~5~~4. Emergency Operations Centers

EOCs operated by the state and county communities have been established to perform direction and control of emergency response functions, as outlined in their respective plans.

The respective state EOC is capable of continuous (24-hour) operations for a protracted period. These centers contain sufficient communications (radio, telephone, and facsimile) equipment, maps, emergency plans, and status boards to provide the necessary interfaces with other federal, state, county, and station emergency facilities.

The county EOCs serve as command and control headquarters for local emergency response activities as well as a center for the coordination of communications to field units and to the state EOC. These EOCs have the equipment necessary, (such as facsimile machines, telecommunications equipment, radios, photocopiers, wall maps, etc.) to carry out their emergency responsibilities.

6~~5~~. Activation

~~NOTE: NUREG-0654 Criterion II.B.5 states that the "licensee must be able to augment on-shift capabilities within a short period after declaration of an emergency." It further defines that short period as 30 and about 60 minutes. VCSNS will adequately staff its on-shift personnel to support the Control Room personnel upon declaration of an Alert or higher classification. This staffing will fulfill the NUREG-0654 Criterion II.B.5 for 30 minute responders and provides additional support to the On-shift ERO to permit a 60 minute response for on-call ERO personnel. The time frames for rapid augmentation of a nuclear power plant staff in the event of an emergency are not rigid inviolate requirements but rather goals. It is VCSNS's intent to expend its best efforts to meet the augmentation criteria goals regarding staffing Emergency Response Facilities with sufficiently skilled individuals capable of handling an emergency. Both the NRC and VCSNS realize that due to diversity of normal residential patterns for the stations' staff, possible adverse weather conditions and road congestion, these time frames might be exceeded.~~

VCSNS has put into place plans and procedures to ensure timely activation of its ERFs. The Shift Manager (as ISEM~~D~~) will initiate a call-out in accordance with the emergency planning procedures. The ERO augmentation process identifies individuals who are capable of fulfilling the specific response functions that are listed in Table B-1a. This table was developed based on the functions listed in NUREG-0654, Revision 2, Table B-1.

Although the response time will vary due to factors such as weather and traffic conditions, a goal of ~~about 6~~90 minutes for activation ~~staffing~~, has been established for the ERO personnel responding to the ~~station onsite~~ emergency facilities, following the declaration of an Alert or higher emergency classification~~, and to the EOF following the declaration of a Site Area Emergency or higher emergency classification~~. ~~Additionally, plans have been developed to ensure timely functional activation and staffing of the JIC and ICSC when the classification of Site Area Emergency is declared.~~

~~It is the goal of the organization to be capable of activating the applicable ERF within 15 minutes of achieving activation staffing. The facility can be declared activated when the following conditions are met:~~

~~a. Activation staffing has been achieved~~

~~b. The facility is functionally capable of performing the appropriate activity~~

~~Although the activation staffing criteria applies to the JIC, the 60 minute response time and 15 minute activation times are not applicable. Public Information personnel must first coordinate the decision to activate the JIC with the appropriate offsite authorities responding to the facility.~~

~~The senior manager in charge may elect to activate their facility without meeting activation staffing if it has been determined that sufficient personnel are available to fully respond to the specific event (this would not constitute a successful activation staff response).~~

7~~6~~. Monitoring Equipment Onsite

The station is equipped with instrumentation for seismic monitoring, radiation monitoring, fire protection, and meteorological monitoring. Instrumentation for the detection or analysis of emergency conditions is maintained in accordance with station Technical Specifications, if applicable or commitments made to the NRC. The actual instrumentation will not be described in detail in this plan. Additional details, if required, of the equipment will appear in the Unit 1 Annex. This equipment includes, but is not limited to, the following:

a. Geophysical Monitors

1) Meteorological Instrumentation: There is a permanent meteorological monitoring stations located near the station for display and recording of wind speed, wind direction, and ambient and differential temperature for use in making offsite dose projections. Meteorological information is presented in the Control Room, TSC, and ~~EOF~~ CERC by means of the plant computer system. This information is remotely interrogated using a computer or other data access terminal.

With regard to VCSNS's meteorological monitoring program, since the meteorological facilities are not composed of structures, systems, and components that prevent or mitigate the consequences of postulated accidents and are not "safety-related," those aspects of quality assurance germane to providing good meteorological information for a nuclear power station were adopted into the Quality Assurance Program Description (QAPD).

The NWS, or regional weather forecast providers, may be contacted during severe weather periods. These providers analyze national and local weather in order to provide localized weather forecasts for the VCSNS area, as appropriate.

2) Seismic Monitoring: The seismic monitoring system measures and records the acceleration (earthquake ground motion) of the structure. Earthquakes produce low frequency accelerations which, when detected by the remote sensing devices, are permanently recorded as information which defines the response spectrum. The system remains in a standby condition until an earthquake causes the remote unit(s) to activate the recording circuits and tape transports. It also provides signals for immediate remote indication that specific preset response accelerations have been exceeded.

3) Hydrological Monitors: The design basis flood, probable maximum precipitation, and other improbable, conceivable extremes in hydrologic natural phenomena are well below any design limits for the unit as detailed in their FSAR. Hence, there are no specific, dedicated hydrological monitors.

b. Radiological Monitors and Sampling

1) The RMS: In-plant radiological measurements provide information that may help determine the nature, extent, and source of emergency conditions. The RMS is available to give early warning of a possible emergency and provides for a continuing evaluation of the situation in the Control Room. Radiation monitoring instruments are located at selected areas within the facility to detect, measure, and record radiation levels. In the event the radiation level should increase above a preset level, an alarm is initiated in the Control Room. Certain radiation monitoring instruments also alarm locally in selected areas of the facility. The RMS is divided into 3 subsystems:

a) Area Radiation Monitors are used for the direct measurement of in-plant exposure rates. The area radiation monitor readings allow in-plant exposure rate determinations to be made remotely without requiring local hand-held meter surveys. This information may be used, initially, to aid in the determination of plant area accessibility. In addition to permanent monitors, portable continuous air monitors measure airborne particulate and airborne iodine activities at various locations within the operating areas.

b) Process radiation monitors are used for the measurement of radioactive noble gas, iodine, and particulate concentrations in plant effluent and other gaseous and fluid streams.

c) The accident, or high range, RMS monitors radiation levels at various locations within the operating area. These are high range instruments used to track radiation levels under accident or post-accident conditions. These instruments include the containment monitors.

The RMS provides the necessary activity or radiation levels required for determining source terms in dose projection procedures. Key RMS data is linked to the plant computer, which allows information to be passed to the TSC and ~~EOF~~CERC. The isotopic mix, including isotopes such as those in Table 3 of NUREG-0654, is based upon a default accident mix. Refer to the unit-specific FSAR for further detail on the RMS capabilities and design.

2) Liquid and Gaseous Sampling Systems: The process sampling system consists of the normal sampling system and additional sampling panels located throughout the plant. Sampling systems are installed or can be modified to permit reactor coolant and containment atmosphere sampling even under severe accident conditions.

The sampling systems use a number of manual sampling techniques to enable reactor coolant and containment sampling operations over a wide range of plant conditions. They are capable of providing information relative to post-accident plant conditions to allow operator actions to be taken to mitigate and control the course of an accident. Refer to the FSAR for further detail on sampling capabilities.

3) Portable Radiation Monitoring Equipment: Portable radiation survey instruments are available for a wide variety uses such as area, sample, and personnel surveys and continued accident assessment. Instruments are stored throughout the plant and in the emergency facilities.

c. Process Monitors: The Control Room and applicable redundant backup locations are equipped with extensive plant process monitors for use in both normal and emergency conditions. These indications include but are not limited to reactor coolant system pressure and temperature, containment pressure and temperature, liquid levels, flow rates, status or lineup of equipment components. This instrumentation provides the basis for initiation of corrective actions.

1) Plant Monitoring/Information System: A plant monitoring/information system provides the data acquisition and database capability for performing plant monitoring and functions. The system is designed to scan, convert to engineering units, conduct reasonability and alarm limit checks, apply required transformations, store for recall and analysis, and display the reading of transformed data from plant instrumentation. The system scans flows, pressures, temperatures, fluid levels, radiation levels, equipment, and valve status at required frequencies. Scanned variables are quality tagged. The system provides for short and midterm storage of data for online retrieval and fast recall, and long-term storage to appropriate media.

2) Safety Parameter Display System (SPDS): SPDS provides a reliable display of plant parameters from which the safety status of operation may be assessed in the Control Room, TSC, and ~~EOF~~ CERC for the station. The primary function of the SPDS is to help operating personnel in the Control Room make quick assessments of plant safety status. SPDS and/or other display systems in the TSC and ~~EOF~~ CERC promote the exchange of information between these facilities and the Control Room and assists the emergency organization in the decision making process. It also provides data trending information regarding current and past status of the unit.

d. Fire Detection System: The fire detection system is designed to quickly detect visible or invisible smoke (or other products of combustion) and/or heat in designated areas of the plant. The fire alarm communication systems and subsystems are located at strategic points throughout the plant to warn personnel of a nuclear incident or other emergency conditions. Existing plant alarm systems are sufficiently audible to alert personnel in the event of a fire or need for assembly. These alarm communication systems consist of warning sirens and lights (in high noise areas) and the PA system. Refer to the FSAR for further description of the unit's fire protection system.

8~~7~~. **Monitoring Equipment Offsite**

VCSNS has made provisions to acquire data from and have access to the following offsite sources of monitoring and analysis equipment:

a. Geophysical Monitors: In the event that the onsite meteorological tower or monitoring instrumentation becomes inoperative, meteorological data may be obtained directly from the NWS or the internet.

A South Carolina State Network (SCSN) seismometer is located about 3.2 miles east-southeast of the VCSNS Unit 1. This seismometer near Jenkinsville has been operational since November 1973, and is monitored by the University of South Carolina. The SCSN seismometer provides background information relative to seismic activity in the area, including confirmation of earthquake occurrences and magnitudes.

In addition, a central point of contact is the National Earthquake Information Service in Golden, Colorado to obtain information about a seismic event.

The ~~EOF~~ CERC will coordinate hydrology and seismology expertise in the event onsite information becomes unavailable.

b. Radiological Environmental Monitors and Sampling: The state of South Carolina DHEC will conduct an extensive offsite environmental monitoring program to provide data on measurable levels of radiation and radioactive materials in the environs.

VCSNS also maintains an offsite environmental monitoring program as well. The program is described fully in the Offsite Dose Calculation Manual and includes:

- Fixed continuous air samplers
- Routine sampling of river water, milk, and fish
- A fixed thermo luminescent dosimeter (TLD) monitoring network

The TLD program consists of the following elements:

- A near-site ring of dosimeters covering the 16 meteorological sectors
- A 16-sector ring of dosimeters placed in a zone within about 5 miles from the plant
- TLDs placed at each of the normal fixed air sampler locations (typically about 8-15 air samplers)

c. Laboratory Facilities: External facilities for counting and analyzing samples can be provided by the other nuclear stations in the area. These laboratories can act as backup facilities in the event that the station's counting room and laboratory become unusable or the offsite radiological monitoring and environmental sampling operation exceeds the capacity of the station capabilities during an emergency. It is estimated that these laboratories will be able to respond within several hours from initial notification.

Outside analytical assistance may be requested from state and federal agencies, or through contracted vendors. The state maintains a radiological laboratory that provides independent analysis. The DOE, through the Interagency Radiological Assistance Program has access to any national laboratory with DOE contract (i.e., Savannah River Site, Brookhaven, Oak Ridge, Lawrence Livermore, etc.).

A general description of the laboratory capabilities is provided in Section C.3.

9~~8~~. Offsite Monitoring Equipment Storage

VCSNS maintains a sufficient supply of emergency equipment (such as portable survey, counting, and air sampling instrumentation and other radiological monitoring equipment and supplies) that may be used for environmental monitoring. These supplies meet the initial requirements of two environmental Field Monitoring Teams. During subsequent phases of an emergency, additional equipment is available from other utility or state Field Monitoring Teams, INPO mutual aid, and offsite response organizations.

109. Meteorological Monitoring

The station has installed and maintains a meteorological tower equipped with instrumentation for continuous reading of the wind speed, wind direction, air temperature, and vertical temperature difference (ΔT). Additional capabilities are available to obtain representative current meteorological information from other sources, such as the NWS. A full description of the onsite meteorological capabilities is given in Section 4 of the Unit 1 Annex.

110. OSC Capabilities

The OSC provides an area for coordinating and planning of OSC activities and the staging of personnel. Additional space is available in adjacent offices and locker rooms to accommodate additional personnel as may be required. Alternate locations are available. The onsite storerooms maintain a supply of parts and equipment for normal plant maintenance. These parts, supplies, and equipment are available for damage control use as necessary.

Sufficient radiation protection equipment (i.e., protective clothing, respiratory protection gear, KI, and other health physics equipment and supplies) is stored and maintained near the OSC ~~(as well as the other ERFs)~~. Damage control team equipment is available in the maintenance shops which are near the OSC. This equipment may include items such as a camera, portable lighting, and additional portable communications equipment. The areas near the OSC are stocked with an assortment of first aid and medical treatment equipment and supplies. The OSC maintains reliable voice communications with the Control Room and~~,~~ TSC~~, and EOF~~. For a description of communications equipment, refer to Section F.

121. Facility and Equipment Readiness

Emergency facilities and equipment are inspected and inventoried in accordance with emergency preparedness procedures. These procedures provide information on location and availability of emergency equipment and supplies. An inventory of all emergency equipment and supplies is performed on a quarterly basis and after each use in an actual emergency or drill. During this inventory, radiation monitoring equipment is checked to verify that required calibration period and location are in accordance with the inventory lists. Surveillances include an operational check of instruments and equipment. Equipment, supplies, and parts which have a shelf-life are identified, checked, and replaced as necessary. Sufficient reserves of instruments and equipment are maintained to replace those which are removed from emergency kits or lockers for calibration or repair.

132. Emergency Equipment and Supplies

Below is a list of typical equipment and supplies dedicated for emergency use in the VCSNS ERFs. Refer to applicable Eemergency Eequipment Cchecklist ~~Procedure~~ for specific equipment and supplies found in the various locations:

Control Room

- Emergency Plan Implementing Procedures
- Drawings of Facility and Plant Site
- Self-Contained Breathing Apparatus
- Portable radios
- Telephone (landlines, cellular, and satellite)
- Dose Assessment Capability~~omputer~~
- Potassium Iodide (KI) (provided by the TSC)

Operational Support Center

- Emergency Plan Implementing Procedures
- Telephones and Portable Radios
- Flashlights w/batteries
- Portable Survey Meters
- Dosimetry (TLDs and Self-Reading Dosimeters)
- Portable Air Sampler
- Air Sampler Filter paper
- Silver Zeolite cartridges
- Potassium Iodide (KI)
- 800 MHz Radio

Technical Support Center

- Telephones
- Flashlights w/batteries
- Emergency Plan Implementing Procedures
- Graphs, Overlays, and Maps
- Drawings of Facility and Plant Site
- Potassium Iodide (KI)

~~Emergency Operations Facility~~Corporate Emergency Response Center

- Dose Assessment Capability~~omputer~~
- Telephones
- ~~Flashlights w/batteries~~
- Emergency Plan Implementing Procedures
- Access to Graphs, Overlays, and Maps
- Access to Drawings of Facility and Plant Site

Section I: Accident Assessment

To effectively coordinate and direct all facets of the response to an emergency situation, diligent accident assessment efforts are required throughout the emergency. All four emergency classifications have similar assessment methods; however, each classification requires a greater magnitude of assessment effort dependent upon the plant symptoms and/or initiating event(s).

1. Plant Parameters and Corresponding Emergency Classification

Plant system and effluent parameter values are used in the determination of accident severity and subsequent emergency classification. Environmental and meteorological events are also determining factors in emergency classification. An emergency condition can be the result of just one parameter or condition change, or the combination of several. The specific symptoms, parameter values or events for each level of emergency classification are detailed in the emergency implementing procedures. Specific plant system and effluent parameters that characterize a classifiable event (EALs) are presented in the Unit 1 Annex.

In order to adequately assess the emergency condition, each emergency facility has the necessary equipment and instrumentation installed to make available essential plant information on a continuous basis. Evaluation of plant conditions is accomplished through the monitoring of plant parameters both from indication in the Control Room and within the plant. Some of the more important plant parameters to be monitored in the Control Room are assembled into a single display location, which is entitled the SPDS. The SPDS monitors such parameters relative to the plant design such as: reactor coolant system pressure, reactor or pressurizer water level, containment pressure, reactor power, safety system status, containment radiation level and effluent monitor readings. The instrumentation and equipment capabilities available for each emergency facility are described in Section H.

2. Onsite Accident Assessment Capabilities

The resources available to provide initial and continuing information for accident assessment throughout the course of an event include plant parameter display systems, liquid and gaseous sampling system, Area and Process RMSs, and Accident RMSs (which includes the high range containment radiation monitors). Descriptions of these systems are given in Section H.~~6.b.~~

3. Source Term Determination

Source term (or core damage) estimations serve several roles within the VCSNS Emergency Preparedness Program. For planning purposes, core damage considerations are used as the bases for several of the EAL ICs and as the threshold for the declaration of a General Emergency (the definition of a General Emergency specifies conditions which involve 'substantial' core degradation or melting as one of the bases for classification).

The computer applications used to provide dose calculations are evaluated against the EPA-400 plume exposure PAGs applicable for the early phase of an accident. These evaluations place an emphasis on determining the necessity for offsite PARs. Dose assessment actions will be performed in the following sequence:

First: Onset of a release to one hour post-accident: Shift personnel will rely on a simplified computerized dose model to assist them in developing offsite dose projections using real time data from effluent monitors and site meteorology.

Second: One hour post-accident to event termination: Estimates of offsite doses based on more sophisticated techniques are provided. Dedicated ERO personnel will analyze the offsite consequences of a release using more complex computerized dose modeling. These additional methods are able to analyze more offsite conditions than the simplified quick method, as well account for more specific source term considerations.

5. Meteorological Information

Local meteorological data is available from the onsite meteorological tower. The data available includes wind speed, wind direction, temperature, and vertical temperature difference (ΔT). This data is used by VCSNS, the state, and NRC to provide near real-time predictions of the atmospheric effluent transport and diffusion. Meteorological data from the tower is available in the Control Room, TSC, and ~~EOF~~CERC. A full description of the onsite meteorological capabilities is given in Section 4 of the Unit 1 Annex.

6. Unmonitored Release

Dose projections can be made during a release through use of actual sample data in situations where effluent monitors are either off-scale or inoperative or the release occurs by an unmonitored flow path. In the absence of effluent sample data, a dose projection can be performed simply by specifying the accident category as a default. The selection of a default accident category defines the mix, the total curies, and the release pathway(s). The total number of curies from a default mix for each isotope is used to provide an upper bound for release concentration, and hence, an upper bound for the dose rate and dose to the public.

7. Field Monitoring

In addition to the capabilities and resources described in Section H.7.b and H.8, VCSNS maintains the ability to take offsite air samples and to directly measure gamma dose rates in the event of an airborne or liquid release. The capability to take offsite soil, water, and vegetation samples is also provided by either the Field Teams or South Carolina Department of Health and Environmental Control (SCDHEC) Teams.

The environmental monitoring equipment, as described in Section H, includes portable survey, counting, and air sampling instrumentation and other radiological monitoring equipment and supplies to be used by the Field Teams. Samples are taken at predetermined locations as well as those specified both during and after a release. Environmental measurements are used as an aid in the determination and assessment of protective and recovery actions for the general public.

8. Field Teams

Field Teams are dispatched by VCSNS to perform a variety of functions during conditions that may involve significant releases of radioactive materials from the plant. Radiological survey and sample data is used to define affected area boundaries, verify or modify dose projections and PARs, and assess the actual magnitude, extent, and significance of a liquid or gaseous release.

In addition to contamination and dose rate measurements, the change out of environmental TLDs can be performed. Other actions may include soil, water, and vegetation sampling.

The initial environmental surveys involve simple-to-perform measurements to quickly confirm or modify the dose projections based on plant parameters. Subsequent environmental monitoring efforts will be aimed at further defining the offsite consequences including instituting an expanded program to enable prompt assessments of any subsequent releases from the plant.

~~The expertise necessary to conduct limited offsite environmental survey and sampling exist onsite 24 hours a day.~~ A minimum of two offsite Field Teams are notified and activated at an ~~Site Area Emergency~~Alert or higher classification. Teams are composed of two individuals who are assembled at the Nuclear Learning Center to use dedicated survey and sampling equipment. Teams are then dispatched in company vehicles into the surrounding area when a release is ongoing or is expected to occur. Radiological survey and sample data is transmitted to the emergency facilities. SCDHEC support can be used to perform collection, shipment, and analysis of environmental sample media.

9. Iodine Monitoring

Field monitoring equipment has the capability to detect and measure airborne radioiodine concentrations as low as $1x10^{-7}$ µCi/cc in the field. Interference from the presence of noble gas and background radiation will be minimized by ensuring that monitoring teams move to areas of low background before analyzing the sample cartridge. The collected air sample is measured by hand-held survey meter as an initial check of the projection derived from plant data to determine if significant quantities of elemental iodine have actually been released (the chemical form that would pose a health hazard).

10. Dose Estimates

Specific procedures exist for the correlation of air activity levels to dose rate for key isotopes. These procedures also provide a method to estimate the integrated dose from the projected and actual dose rates and for the comparison of these estimates with the PAGs.

11. State Monitoring Capabilities

The state (SCDHEC) has the ability to dispatch their own field monitoring teams to track the airborne radioactive plume. The state also has the ability and resources to coordinate with federal and VCSNS monitoring teams to compare sample results.

Section J: Protective Response

Protective response consists of emergency actions, taken during or after an emergency situation, which are intended to minimize or eliminate hazards to the health and safety of the public and/or station personnel. A range of protective actions has been developed for emergency workers and the general public in the plume exposure pathway EPZ. Additionally, guidelines have been established to aid in choosing protective actions during an emergency that are consistent with federal guidance. VCSNS is responsible for onsite actions, while the responsibility for offsite actions rests with the state, county, and other offsite response agencies.

1. Notification of Onsite Personnel

For all emergency classifications, all personnel within the Owner Controlled Area (OCA) are notified of the initial classification or escalation of an emergency by recognizable alarms, and/or verbal announcements over the plant public address system. Announcements include the emergency classification and response actions to be taken by personnel onsite (such as ERO, non-ERO, contractor personnel, and visitors). Contractors and visitors will be provided information on how to respond in the event of an emergency. Provisions are made to alert personnel in high noise areas and outbuildings within the Protected Area as applicable.

The station has identified locations where people might be expected to be present outside the Protected Area but within the OCA. Accountability of persons within the OCA but outside the Protected Area is not required. However, provisions including public address system announcements, electronic speakers, and security patrols are established for notification of personnel within the OCA any time a site evacuation has been initiated, or as otherwise deemed appropriate.

2. Evacuation Locations

If a site evacuation is required, nonessential personnel are directed to either assemble within designated assembly areas or to immediately evacuate the site. Personnel will be directed to either proceed to their homes or to reassemble at the designated offsite location (Offsite Holding Area). Visitors to the station will assemble with and follow the instructions of their escorts. Nonessential personnel within the Protected Area will normally exit through the normal access point. Personal transportation (if available) will normally be used and established evacuation routes will be followed. Personnel without transportation will be identified and provided transportation as necessary. Personnel needing transportation are instructed to request assistance from personnel evacuating the site. In the event that personal vehicles cannot be utilized for evacuation, the ISEM~~D~~ or ~~ED~~SEM will request offsite assistance to support personnel evacuation.

3. Radiological Monitoring of Evacuees

Personnel evacuating the site will be monitored for contamination by the portal monitors as they exit the Protected Area, with portable friskers in assembly areas, or sent to offsite monitoring locations on an as needed basis. If there is no release of radioactive materials within the unit, limited monitoring may be used to speed the evacuation process.

4. Protective Actions for Onsite Personnel

Evacuation is the primary protective action anticipated for onsite personnel not having immediate emergency response assignments. The station has identified a location that serves as an assembly area and offsite location (Offsite Holding Area) for nonessential personnel when they are not instructed to proceed home. The specific locations of these areas are provided in the Unit 1 Annex. Implementing procedures describe equipment, supplies, and general operation of these facilities. Evacuation of nonessential personnel is usually conducted immediately after accountability if a Site Area Emergency or General Emergency has been declared and conditions permit. Evacuation shall commence in accordance with VCSNS procedures as directed by the ISEM/SEM, ~~ECO~~ or his/her designee, unless one of the following conditions exist:

a. Severe weather conditions threaten safe transport

b. A significant radiological hazard would be encountered

c. There is a security threat occurring that would have an adverse impact on the personnel while leaving the site

d. A condition similar to the above in magnitude, which in the opinion of the ISEM/SEM~~EOF Manager~~ would adversely affect the site personnel

Security forces will be dispatched, when available, to access road(s) to control entry to site facilities.

The initiation of a site evacuation will be reported to the appropriate state and county agencies.

In the event that evacuation is not the best protective action, the onsite personnel will be directed to take other protective actions including: sheltering for extremely inclement weather or during an ongoing radiological release and take immediate cover for security events when evacuation will place personnel in jeopardy.

5. **Accountability**

The purpose of accountability is to determine the locations of all personnel inside the Protected Area and to muster emergency personnel at prearranged locations. When accountability of onsite personnel is determined to be necessary by the ISEMD or the SEMED, all personnel within the Protected Area shall be accounted for and the names of missing individuals (if any) are determined within 30 minutes of the declaration. Should missing personnel be identified, search and rescue operations are initiated.

Accountability is usually performed in conjunction with assembly, and is required to be initiated whenever a Site Area Emergency or higher classification is declared. The movement of personnel for the purposes of accountability may be delayed if their health and safety could be in jeopardy, such as severe weather or for security concerns.

If it is determined that the prearranged assembly area is unfit for personnel, the ISEMD or the SEMED may designate an alternative assembly area and direct personnel using appropriate communication systems that are available.

Once established, accountability within the Protected Area is maintained throughout the course of the event, unless specifically terminated by the SEMED.

6. **Provisions for Onsite Personnel**

VCSNS maintains an inventory of respiratory protection equipment, anti-contamination clothing, and KI that is made available to emergency workers remaining onsite should conditions warrant. During the course of an emergency, protective actions are considered to minimize radiological exposures or contamination problems associated with all onsite personnel. For those who must work within the restricted area of the affected unit, measures that are considered are:

a. Use of Respirators: On-shift and emergency response personnel use respiratory protection in any environment involving exposure to high level gaseous activity or oxygen deficient atmosphere, or where air quality is in doubt. In the presence of airborne particulates, emergency response personnel may be directed by Radiation Protection/Chemistry~~Health Physics~~ personnel to use full-face filter-type respirators. The criteria for issuance of respiratory protection are described in Radiation Protection procedures.

b. Use of Protective Clothing: Anti-contamination clothing, located in or near the OSC and station dress out areas is available for use by onsite personnel. The criteria for issuance of protective clothing are described in Radiation Protection procedures.

c. Use of Potassium Iodide (KI): The use of KI may be recommended when a projected dose of 25 Rem committed dose equivalent (CDE) is exceeded for an emergency worker's thyroid. This is the value specified in EPA 400-R-92-001, "Manual of Protective Action Guides and Protective Actions for Nuclear Incidents." The OSC and the TSC maintain a supply of KI. The Radiological Assessment Director~~Supervisor~~ has the responsibility for approval of issuing KI to VCSNS onsite emergency workers.

7. Mechanism for Implementing Protective Action Recommendations

Plant conditions, projected dose and dose rates, and/or field monitoring data are evaluated to develop PARs for the purpose of preventing or minimizing exposure to the general public. PARs are provided to the offsite agencies responsible for implementing protective actions for the general public within the 10-mile EPZ. PARs are approved by the ~~EOF~~ Technical Support Manager or SEM in the TSC if the CERC is unavailable.

In an emergency that requires immediate protective actions be taken before activation of the ~~offsite~~ emergency facilities, PARs are provided directly to the state and county 24 hour warning points by the ISEM~~D~~.

8. Evacuation Time Estimate

An independent Evacuation Time Estimate Study has been performed to provide estimates of the time required to evacuate resident and transient populations surrounding the VCSNS site for various times of the year under favorable and adverse conditions. Evacuation Time Estimate for evacuation of the plume exposure EPZ is referenced in Appendix 5 and detailed in the referenced Evacuation Time Estimate Study.

9. Capability of Implementing Protective Action Recommendations

The responsibility for implementing protective measures based on PAGs for the offsite population at risk is the responsibility of the state and county governments. Detailed procedures for public protective actions are contained in the state and county radiological emergency response plans as appropriate.

The state agencies are responsible for evaluation of VCSNS PARs and preparing a recommendation to the governor, or his/her appointed agent. The decision made and the order given based on the state agencies' recommendation becomes the Protective Action Directive (PAD) which is implemented by the offsite agencies. The counties within the 10-mile EPZ may make PADs prior to those of the governor when they determine the need to protect the health and safety of the public in their county.

If the plant conditions are stable and offsite radiological conditions are such that the public health and safety are not endangered, then return to evacuated areas may be discussed with the state. State authorities are responsible for actually recommending return and transmitting this recommendation.

10. Implementation of Protective Action Recommendations

The VCSNS, state, and county emergency plans used to implement the protective measures for the plume exposure pathway take numerous factors into consideration. Among these considerations are:

a. Most of the public evacuees are expected to travel in their own vehicles, leaving the EPZ via designated evacuation routes. The state and county plans contain official maps and information on the locations of reception centers and shelters.

Protective Action Recommendation Notes:

1. **Rapidly Progressing Severe Accident (RPSA) is defined as:**

   I. This is the first Protective Action Recommendation (PAR) after a General Emergency has been declared,

   AND

   II. There is a loss of the containment barrier per the Emergency Action Levels (EAL),

   AND

   III. Either of the following:

      a. Greater than or equal to Containment High Range Area Radiation Monitor Potential Loss EAL Threshold (20% Clad Damage),

      OR

      b. A significant radiological release in an hour or less (as indicated by meeting the EAL Initiating Conditions for RG1.1, RG1.2, or RG1.3).

2. When the PAR is being made from the Control Room or the TSC, the only impediment considered should be a Hostile Action Based (HAB) event. When the PAR is being made from the CERC~~Emergency Operations Facility (EOF)~~, the impediments that will be considered are based on known information that is provided by the State and County liaisons and/or a HAB event.

3. PARs should only be expanded by identified changes in Dose Assessment. PARs are to be expanded to any Protective Action Zone (PAZ) that will exceed Protective Action Guidelines (PAGs - release of gaseous radioactivity resulting in offsite dose greater than 1,000 mrem TEDE or 5,000 mrem thyroid CDE). Expansion of PARs must include previously issued PARs. If an EPA PAG is exceeded or expected to be exceeded beyond 10 miles, then consider the need for PARs beyond 10 miles and discuss possible actions with the counties and/or state.

Section K: Radiological Exposure Control

This section of the plan describes the means for controlling emergency worker radiological exposures during an emergency, as well as the measures that are used by VCSNS to provide necessary assistance to persons injured or exposed to radiation and/or radioactive materials. Exposure guidelines in this section are consistent with EPA Emergency Worker and Lifesaving Activity PAGs described in EPA 400-R-92-001 (EPA-400).

1. Emergency Exposure Guidelines

Being licensed by the NRC, VCSNS maintains personnel exposure control programs in accordance with 10 CFR 20 under normal operating conditions. The SEM~~ED~~ is assigned the non-delegable responsibility for authorizing personnel exposure levels under emergency conditions in compliance with EPA-400. In emergency situations, workers may receive exposure under a variety of circumstances in order to ensure the safety and protection of others and of valuable property. These exposures will be justified if the maximum risks or costs to others that are avoided by their actions outweigh the risks to which the workers are subjected. The Emergency Worker Dose Limits are as follows:

Dose Limit (Rem TEDE)	Activity	Condition
0-5	All	Personnel should be kept within normal 10 CFR 20 limits during bona fide emergencies, except as authorized for activities as indicated below
5-10	Protecting valuable property	Lower dose not practicable
10-25	Lifesaving or protection of large populations	Lower dose not practicable
> 25	Lifesaving or protection of large populations	Only on a voluntary basis to persons fully aware of the risks involved

Limit dose to the lens of the eye to 3 times the above values and doses to any other organ (including skin and body extremities) to 10 times the above values.

Whenever possible, the concurrence of the Radiological Assessment Director~~Supervisor~~ should be secured before exposing individuals to dose equivalents beyond the EPA-400 lower limit.

2. Emergency Radiation Protection Program

The Radiological Assessment Director~~Supervisor~~ is the individual responsible for implementing the radiation protection actions during an emergency. Radiation protection guidelines include the following:

- Volunteers over 45 years of age are considered first for any emergency response action requiring exposure greater than normal limits. Routine dose limits shall not be extended to emergency dose limits for declared pregnant individuals. As in the case of normal

occupational exposure, doses received under emergency conditions should be maintained as low as reasonably achievable.

- Persons undertaking any emergency operation in which the dose will exceed 25 Rem TEDE should do so only on a voluntary basis and with full awareness of the risks involved including the numerical levels of dose at which acute effects of radiation will be incurred and numerical estimates of the risk of delayed effects.

- In the context of the emergency limits, exposure of workers that is incurred for the protection of large populations may be considered justified for situations in which the collective dose avoided by the emergency operation is significantly larger than that incurred by the workers involved.

- Exposure accountability is maintained and proper personnel radiological monitoring equipment is provided for all personnel during emergency conditions.

- Access to high radiation areas is only permitted with prior approval of the applicable Radiological Assessment Director~~Supervisor~~. Personnel are not allowed to enter known or potential high radiation areas unless their exposure has been properly evaluated.

- Periodic habitability surveys of emergency facilities are performed during an emergency. If the facility is determined to be uninhabitable, the facility is evacuated in order to prevent or minimize exposure to radiation and radioactive materials. Alternate assembly areas are established, as necessary, to relocate and monitor evacuated personnel.

3. **Personnel Monitoring**

   a. Emergency workers will receive TLD badges and personal self-reading dosimeters capable of measuring expected exposures on a real time basis. The capability exists for the emergency processing of TLDs on a 24-hour per day basis, if necessary.

   b. Emergency worker dose records are maintained by Radiation Protection/Chemistry ~~Health Physics~~ (as appropriate) in accordance with the emergency and radiological protection procedures. Emergency workers are instructed to read their dosimeters frequently. TLDs may be processed with increased periodicity.

4. **Non-V. C. Summer Personnel Exposure Authorization**

   The responsibility for authorizing non-VCSNS emergency workers (i.e., state and local agency emergency workers) to receive exposures in excess of the EPA-400 General Public PAGs rests with the state and county organizations, except when such emergency workers are onsite. Authorization of exposures in excess of EPA General Public PAGs, in this latter instance, rests with the SEM~~ED~~.

5. Contamination and Decontamination

During an emergency, the SEMD is responsible for preventing or minimizing personnel exposure to radioactive materials deposited on the ground or other surfaces inside the Owner Controlled~~Protected~~ Area. Special consideration should be given to setting up contamination control arrangements for personnel entering the OSC after completion of assigned activities. The SEM~~EOF Manager~~ is also responsible for preventing or minimizing personnel exposure to radioactive materials deposited on the ground or other surfaces beyond the Protected Area to the Owner Controlled Area. The ~~EOF~~Technical Support Manager is ~~also~~ responsible for the VCSNS Field Team members that are assigned to track and sample the release plume.

a. During emergency conditions, normal plant contamination control criteria will be adhered to as much as possible. However, these limits may be modified by the RAD~~ORMC~~ in accordance with existing radiation protection procedures, should conditions warrant.

b. Contamination Control Means: Personnel found to be contaminated will normally be attended to at decontamination areas located onsite. The decontamination facility at VC Summer Unit 1 is located at the Radiation Control Area Control Point, elevation 412' of the Control Building. The decontamination facility consists of a men's and women's shower, toilet, locker room, and change areas. Temporary decontamination areas can also be set up inside at various locations. Decontamination showers and supplies are provided onsite with additional personnel decontamination equipment and capabilities. Decontamination supplies will include soaps, shampoo, mild detergents, 3% Hydrogen Peroxide solutions, plastic bags, plastic suits, cotton swabs, oral hygiene products, and Saline solutions. Shower and sink drains in the Radiation Controlled Area are routed to the miscellaneous waste processing system where the liquid is processed and monitored prior to discharge. Potentially contaminated emergency vehicles will be surveyed before they are allowed to leave the plant or offsite assembly area. If the survey area is not suitable for monitoring and decontamination due to radiological or other concerns, vehicles will be surveyed at an alternate location.

6. Contamination Control Measures

Controls are established and maintained 24 hours per day to contain the spread of loose surface radioactive contamination.

a. Contaminated Areas are isolated as restricted areas with appropriate radiological protection and access control. Personnel leaving Contaminated Areas are monitored to ensure that they and their clothing are not contaminated. If contamination above acceptable levels is found, they will be decontaminated in accordance with plant procedures. If normal decontamination procedures do not reduce personnel contamination to acceptable levels, the case will be referred to a competent medical authority. Supplies, instruments, and equipment that are in Contaminated Areas or have been brought into Contaminated Areas will be monitored before removal. If personnel are found to be contaminated, they will be decontaminated using normal plant decontamination techniques and facilities. Contaminated materials will be disposed of as radwaste. Contaminated vehicles will be decontaminated before being released. An ambulance responding and transporting injured contaminated personnel will be monitored and decontaminated before departing the medical facility by VCSNS personnel or sent to the county emergency worker decon facility, during a declared emergency.

Section L: Medical and Public Health Support

This section describes the arrangements for medical services for contaminated injured individuals at the station.

1. Offsite Hospital and Medical Service Facilities

Arrangements, by letter of agreement, are maintained by Dominion Energy with Prisma Health Richland Hospital for receiving and treating contaminated or exposed persons with injuries requiring immediate medical care. Hospital personnel have been trained and the hospital is equipped to handle contaminated or radiation injured individuals. Specifically, training of medical support personnel at Prisma Richland Hospital includes basic training on the nature of radiological emergencies, diagnosis and treatment, and follow-up medical care. Station personnel are available to assist medical personnel with decontamination, radiation exposure, and contamination control. Materials that are identified as contaminated are collected by Radiation Protection/Chemistry~~Health Physics~~ personnel and returned to VCSNS for decontamination or disposal.

Because of the specialized nature of the diagnosis and treatment of radiation injuries, VCSNS maintains an agreement with the REAC/TS in Oak Ridge, Tennessee. REAC/TS will provide a backup response capability for patients with serious contamination/ingestion or who have been excessively exposed to radiation. REAC/TS has a radiological emergency response team of physicians, nurses, Health Physicists, and necessary support personnel on 24-hour call to provide consultative or direct medical or radiological assistance. Specifically, the REAC/TS team has expertise and is equipped to conduct: medical and radiological triage; decontamination procedures and therapies for external contamination and internally deposited radionuclides, including chelation therapy; diagnostic and prognostic assessments or radiation-induced injuries; and radiation dose estimates by methods that include cytogenetic analysis, bioassay, and in vivo counting.

Victims of accidents or medical emergencies who are determined as not being contaminated or excessively exposed to radiation may be treated at the closest appropriate medical facility as determined by the responding Emergency Medical Services Crew Chief.

~~2. Onsite First Aid Capability~~

~~The station maintains onsite first aid supplies and equipment necessary for the treatment of contaminated or injured persons. In general, physicians or nurses are not staffed at VCSNS, and as such, medical treatment given to injured persons is of a "first aid" nature. The Medical Emergency Response Team (MERT) is comprised of on shift personnel trained in basic first aid. The MERT is dispatched by the Control Room or the OSC when it is activated. At least two of these individuals are available on shift at all times to support immediate response in the Protected Area. VCSNS also maintains an agreement with a local physician. That physician serves as the VCSNS's company physician and is available to respond to the site to augment medical treatment as required.~~

~~Additionally, the Health Physics Specialists at VCSNS are experienced and trained in the control of radioactive contamination and decontamination work for injured or ill personnel. Health Physics Specialists are dispatched to support the MERT if there is a possibility of contamination associated with the injury/illness. The functions of station personnel in handling onsite injured people are:~~

~~a. Afford rescue~~

~~b. Administer first aid including such resuscitative measures as are deemed necessary~~

~~c. Request and escort offsite medical assistance to the injured/ill individual in a timely manner when needed~~

~~d. Begin decontamination procedures as appropriate~~

~~e. Arrange for suitable transportation to a hospital when required~~

~~Primary attention shall be directed to the actual factors involved in the treatment of injuries or illness, such as: control of bleeding, resuscitation including heart and lung, control of bleeding after resuscitation, protection of wounds from bacterial or radioactive contamination and the immobilization of fractures.~~

~~VCSNS personnel provide an initial estimate of the magnitude of surface contamination of the injured and preliminary estimates of total body dose to the injured. Primary rapid and simple decontamination of the surface of the body (when possible and advisable) before transportation to a designated hospital may be carried out. This activity would be as directed or performed by Health Physics personnel. If decontamination is not considered due to the immediacy of medical treatment, efforts will be made to isolate and reduce the spread of the contamination before transportation. When additional professional medical care is needed and contamination is not a factor, injured or ill persons are transported to a local clinic or hospital. Contaminated and injured or ill persons are transported to Prisma Health Richland Hospital from the VCSNS site.~~

~~First aid facilities at VCSNS are designed to provide basic first aid to injured or ill personnel before arrival of offsite medical support. First aid facilities are located in the unit and are described in the Unit 1 Annex to this Plan. Medical equipment and supplies are available at these locations.~~

~~In the event of a mass casualty incident, medical triage is implemented. MERT members are trained for medical triage using START (Simple Triage and Rapid Treatment) or other similar principals. Each victim is screened and categorized in order to prioritize victim treatment. In the event that station and local response resources are exceeded by the number of casualties, the South Carolina Emergency Operations Plan is implemented to acquire additional resources by the offsite response agencies.~~

23. Medical Transportation

In situations when transportation of a victim(s) to a hospital is required, arrangements are made by the station for prompt ambulance transport of persons with injuries and/or illness involving radioactivity to Prisma Richland Hospital. Such service is available on a 24-hour per day basis and is confirmed by letter of agreement with the Fairfield County Emergency Medical Services (FCEMS). The FCEMS is located approximately two miles from VCSNS and is staffed with Emergency Medical Technicians, Paramedics, and additional qualified personnel capable of handling medical emergency situations. VCSNS maintains a communications link with the FCEMS by means of ORO notification system, ~~an EMNet telephone,~~ radio and normal telephone lines. VCSNS security personnel will expedite and escort the responding ambulance(s) to the victim's location.

In the event that a helicopter is requested by the response personnel to transport victim(s) to appropriate medical care, a primary helicopter landing area is available onsite for use. Alternate landing areas are determined by response personnel and marked to assist the landing of the helicopter.

If additional assistance is required for the transportation of accident victims, the Lexington County Emergency Medical Services (LCEMS) will respond. This support would most likely be used in a case where multiple casualty victims would require transportation to offsite medical facilities. LCEMS is located approximately 15 miles from VCSNS and is staffed with Emergency Medical Technicians and Paramedics. Should the need arise, assistance from the LCEMS and other response organizations would be requested by FCEMS or the Incident Commander.

Radiation monitoring services shall be provided by VCSNS Radiation Protection/Chemistry~~Health Physics~~ personnel whenever it becomes necessary to use the ambulance service for the transportation of contaminated persons.

A qualified Radiation Protection/Chemistry~~Health Physics~~ person shall accompany the ambulance to the hospital upon the determination that the injured or ill person is contaminated or if the determination cannot be made that the individual is free of surface contamination. Additional Radiation Protection/Chemistry~~Health Physics~~ personnel may be contacted and dispatched to Prisma Richland Hospital to assist in the monitoring and decontamination of the injured victim(s), the hospital facilities, and the ambulance and response personnel as needed.

Section M: Reentry and Recovery Planning

This section describes the measures to be taken for reentry into the areas of the Station which have been evacuated as a result of an accident. It also outlines the VCSNS Recovery Organization and its concepts of operation.

1. Reentry and Recovery

a. Evaluating Reentry Conditions
During an emergency, immediate actions are directed toward limiting the consequences of the accident to afford maximum protection to station personnel and the general public. Once corrective measures have been taken and effective control of the plant has been reestablished, a more methodical approach to reentry is taken. This Emergency Plan divides reentry into two separate categories:

- Reentry *during the emergency phase of an accident* is performed to save a life, control a release of radioactive material, prevent further damage to plant equipment or restore plant equipment. If necessary, this category of reentry may be performed using emergency exposure limits. Briefings, rather than written radiation protection procedures, may be used when making these entries.

  All reentry activities conducted during the emergency are authorized by the SEMD and coordinated by the OSC Director~~Supervisor~~ and the Radiological Assessment Director~~Supervisor~~.

- Reentry *during the recovery phase of an accident* is performed using normal exposure limits. Either normal procedures or procedures that consider existing as well as potential conditions inside affected areas are developed specifically for each reentry.

  Reentry activities during the recovery phase are authorized by the Recovery ~~Director~~Manager and coordinated by the recovery organization managers in charge of personnel making the reentry.

The following items are considered when planning for any reentry:

- Review of available radiation surveillance data to determine plant areas potentially affected by radiation and/or contamination
- Review of radiation exposure history of personnel required to participate in the accident mitigation or recovery operations
- Determination of the need for additional personnel and the sources of these additional personnel
- Review of adequacy of radiation survey instrumentation and equipment (types, ranges number, calibration, etc.)
- Review of nonradiological hazards and required protective measures (e.g., fire, electrical, atmosphere, Hazmat)

- Preplanning of activities and briefings for the reentry team that include the following:
  - Personnel knowledge requirements
  - Methods and procedures that will be employed during the entry
  - Specific tasks to be performed
  - Anticipated radiation and contamination levels as well as "turn back" limits
  - Radiation survey equipment and types and ranges of dosimetry required
  - Shielding requirements and availability
  - Appropriate communications
  - Personal protective equipment (PPE) requirements
  - Access control procedures
  - Decontamination requirements
  - Debriefing requirements
  - Respiratory protection
- A review of security controls to prevent unauthorized or unintentional entry into hazardous or secured areas.

b. Evaluating Entry into Recovery

The Recovery Phase is that period when major repairs are being performed to return the plant to an acceptable condition and the possibility of the emergency condition degrading no longer exists. Once the plant has been stabilized, contained, and controlled, the Recovery Phase may be entered. It is the responsibility of the SEM~~D~~ to declare emergency phase terminated and entry into Recovery after obtaining concurrence from the CRM~~ECO~~ and consulting with offsite authorities if a Site Area Emergency or General Emergency has been declared.

Establishment of Recovery can be conducted from any emergency classification level. However, it is possible that the lower classifications of Unusual Event and Alert will conclude with the overall event being terminated. There may be cases where certain EAL ICs remain exceeded, but the station is under control and no further danger of degradation exists. In such a case, it may be appropriate to enter Recovery. Site Area Emergency and General Emergency classifications will require a Recovery Phase to be established before event termination. VCSNS may consult with/notify the cognizant governmental agencies before declaring Recovery or event termination during an Unusual Event or Alert. When in a Site Area Emergency or a General Emergency, VCSNS will consult and notify the cognizant governmental agencies before declaring Recovery or event termination.

- All required notifications have been made
- Discussions have been held with federal, state, and county agencies and agreement has been reached to terminate the emergency for a Site Area Emergency or a General Emergency
- At an Alert or higher classification, the ERO is in place and emergency facilities are activated
- All contaminated injured personnel have been treated and/or transported to a medical care facility
- Offsite conditions do not unreasonably limit access of outside support to the station and qualified personnel and support services are available

It is not necessary that all conditions listed above be met; however, all items must be considered before entering the recovery phase. For example, it is possible after a severe accident that some conditions remain that exceed an Emergency Action Level, but entry into the Recovery Phase is appropriate.

2. Recovery Organization

Once plant conditions have been stabilized and the Recovery Phase has been initiated, the TSM assumes control and direction of the recovery operation with the authority and responsibilities for implementing and administering the recovery plan and organization. ~~ECO with assistance from senior management may form a Recovery Organization for long term operations.~~ These types of alterations should be discussed with the NRC before they are implemented.

- For events of a minor nature, (i.e., for Unusual Event classifications), the normal on shift organization is normally adequate to perform necessary recovery actions.
- For events where damage to the plant has been significant, but no offsite releases have occurred and/or protective actions were not performed, (i.e., for Alert classifications) the station ERO, or portions thereof, should be adequate to perform the recovery tasks before returning to the normal station organization.
- For events involving major damage to systems required to maintain safe shutdown of the plant and/or offsite radioactive releases have occurred, (i.e., for Site Area Emergency or General Emergency classifications) the station recovery organization is put in place.

The recovery process will be managed by a special, designated organization composed of Dominion personnel. The specific members of the station recovery organization are selected based on the sequence of events that preceded the recovery activities as well as the requirements of the recovery phase. The recovery organization is described in Figure M-1. ~~The basic framework of the station recovery organization is as follows:~~

a. ~~The Recovery Director: The ECO is initially designated as the Recovery Director. The Recovery Director is charged with the responsibility for directing the activities of the station recovery organization. These responsibilities include:~~

- ~~Ensuring sufficient personnel, equipment, or other resources from Dominion Energy and other organizations are available to support recovery~~
- ~~Directing the development of a recovery plan and procedures~~
- ~~Deactivating any of the plant ERO that was retained to aid in recovery, in the appropriate manner. Depending on the type of accident and the onsite and offsite affects of the accident, portions of the ERO may remain in place after initiation of the recovery phase~~
- ~~Coordinating the integration of available federal and state assistance into onsite recovery activities~~
- ~~Coordinating the integration of Dominion Energy support with federal, state, and county authorities into required offsite recovery activities~~
- ~~Approving information released by the public information organization that pertains to the emergency or the recovery phase of the accident~~
- ~~Determining when the recovery phase is terminated~~

b. ~~The Recovery Plant Manager: The Nuclear Plant Manager or a designated alternate, will become the Recovery Plant Manager. The Recovery Plant Manager reports to the Recovery Director and is responsible for:~~

- ~~Coordinating the development and implementation of the recovery plan and procedures~~
- ~~Ensuring that adequate engineering activities to restore the plant are properly reviewed and approved~~
- ~~Directing all onsite activities in support of the station recovery effort~~
- ~~Designating other VCSNS recovery positions required in support of onsite recovery activities~~

~~c. The Recovery Offsite Manager: A senior member of Safety and Licensing or a designated alternate is the Recovery Offsite Manager. The Recovery Offsite Manager reports to the Recovery Director and is responsible for:~~

- ~~Providing liaison with offsite agencies and coordinating VCSNS assistance for offsite recovery activities~~
- ~~Coordinating VCSNS ingestion exposure pathway EPZ sampling activities and the development of an offsite accident analysis report~~
- ~~Developing a radiological release report~~
- ~~Designating other VCSNS recovery positions required in support of offsite recovery activities~~

~~d. The Company Spokesperson: A senior Dominion Energy Public Relations Group individual is designated as the Company Spokesperson. The Company Spokesperson reports to the Recovery Director and is responsible for:~~

- ~~Functioning as the official spokesperson to the press for Dominion Energy on all matters relating to the accident or recovery~~
- ~~Coordinating with all public information groups (federal, state, county, etc.)~~
- ~~Coordinating media monitoring and rumor control~~
- ~~Determining what public information portions of the ERO will remain activated~~

The ~~remainder of the~~ recovery organization is established on an initial recovery plan developed at the end of the emergency phase or just after entry into the Recovery Phase. Consideration is given to recovery activity needs and use of the normal station organizations. Individual recovery supervisors may be designated in any or all of the following areas:

- Training
- Radiation Protection/Chemistry~~Health Physics~~
- ~~Chemistry~~
- Technical/Engineering Support
- Nuclear Oversight
- Operations
- Security
- Maintenance
- Corporate Support
- Special Offsite Areas (Community Representatives, Environmental Samples, Investigations, etc.)

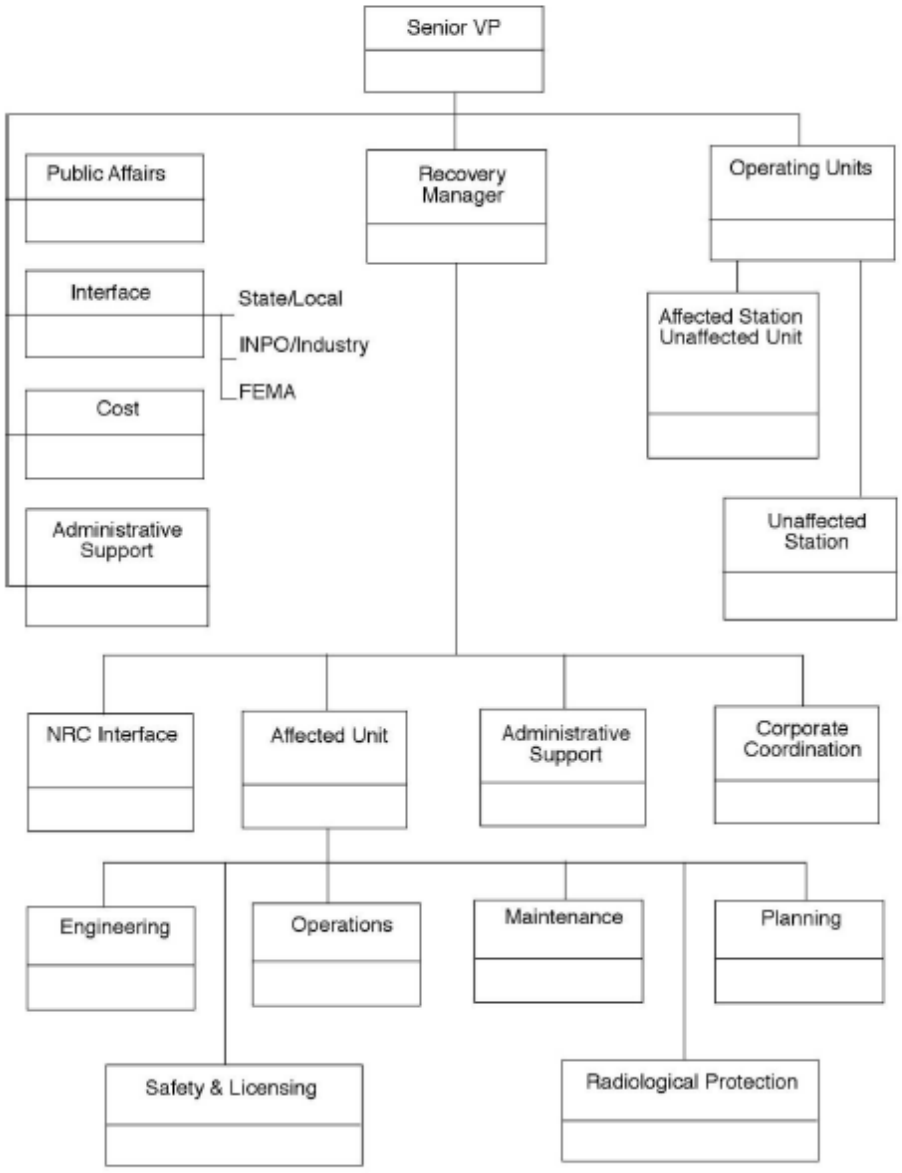


Figure M-1: Example Recovery Organization

2. Drills

In addition to the exercises described above, VCSNS conducts drills for the purpose of testing, developing, and maintaining the proficiency of emergency responders. Drills are scheduled on the Emergency Preparedness annual events plan, which contains provisions for the following drills:

a. Training Drills

Training Drills may be conducted before a Biennial Exercise where FEMA evaluation of state and local performance is expected. Training Drills may be conducted before Off-Year Exercises that only involve VCSNS. The Training Drill is a training and experience tool for the participants to sharpen awareness and practice skills necessary to accomplish specific Emergency Plan duties and responsibilities. It also provides a "dry run" for experience dealing with multiple Controllers, Observers and Evaluators that may be in excess of those provided in training drills.

b. Communication Drills

- Monthly: The primary and alternate methods to notify the state and local government warning points and EOCs within the plume exposure pathway EPZ are demonstrated. Also, the capability to notify the NRC is demonstrated using the ENS.

- Quarterly: The capability to notify the NRC Region and federal EROs as listed in the ERO Communications Directory are demonstrated from the CERC~~EOF~~. Also, computer and critical communications equipment shall be functionally tested.

- Annually: The emergency communications systems outlined in Section F are fully tested. This includes (1) communications between the plant and the state and local EOCs and Field Teams, (2) communications between the Control Room, the TSC, and the CERC~~EOF~~ (3) communications between the TSC and the OSC~~s, and (4) communications between the EOF and the JIC.~~

Each of these drills includes provisions to ensure that all participants in the test are able to understand the content of the messages.

~~c. Fire Drills: Fire drills shall be conducted in accordance with the station Technical Specifications, Fire Protection Plan, and/or station procedures~~

c~~d~~. Medical Emergency Drills: A medical emergency drill, involving a simulated contaminated individual and containing provisions for participation by local support services organizations (i.e., ambulance and support hospital) is conducted annually. The offsite portions of the medical drill may be performed as part of the required biennial exercise.

d~~e~~. Radiological Monitoring Drills: Plant environs and radiological monitoring drills (onsite and offsite) are conducted annually. These drills include collection and analysis of all sample media (such as, water, vegetation, soil, and air), and provisions for communications and record keeping. Collection of milk is demonstrated in accordance with the ingestion pathway exercises.

ef. Health Physics Drills: Health Physics drills involving a response to, and analysis of, simulated elevated airborne and liquid samples and direct radiation measurements within the plant are conducted semiannually in the Protected Area.

fg. Augmentation Drills: Augmentation drills serve to demonstrate the capability of the process to augment the on-shift staff with a TSC, OSC, ~~EOF~~and CERC~~, and JIC~~ after declaration of an emergency. These drills are conducted using the following methods:

- Semiannually, an unannounced off-hours ERO augmentation drill where no actual travel is required.
- At least once per exercise cycle, an off-hours unannounced activation of the ERO Notification System with actual response to the emergency facilities is conducted to support the response to the unit.

gh. Accountability Drills: Accountability drills are conducted annually for the Protected Area. The drill includes ascertaining the names of all missing individuals within the Protected Area and accounting for all individuals within the Protected Area continuously throughout the event.

3. **Conduct of Drills and Exercises**

Advance knowledge of the scenario will be kept to a minimum to allow "free-play" decision making and to ensure realistic participation by those involved. Before the drill or exercise, a package will be distributed to the Controllers and Evaluators that will include the scenario, a list of performance objectives, and a description of the expected responses.

Drills will be provided to ensure that each member of the ERO will have an opportunity to participate in a drill in their assigned facility at least once in a two-year period.

For each emergency preparedness exercise or drill conducted, a scenario package is developed that includes at least the following:

a. The basic objective(s) of the drill or exercise and the appropriate evaluation criteria

b. The date(s), time period, place(s), and participating organizations

c. The simulated events

d. A list of anticipated Drill/Exercise Performance (DEP) opportunities including classification, notifications and PARs

e. A time schedule of real and simulated initiating events

f. A narrative summary describing the conduct of the scenario to include such things as simulated casualties, offsite fire department assistance, rescue of personnel, use of protective clothing, deployment of radiological monitoring teams, and public information activities.

g. A list of qualified participants

~~3. First Aid Response~~

~~Selected station personnel are trained in accordance with the VCSNS approved First Aid Program and medical triage. MERTs will likely be augmented with additional personnel such as fire brigade members and other personnel qualified to assist in the rescue~~.

34. Emergency Response Organization Training Program

ERO personnel who are responsible for implementing this plan receive specialized training. The training program for emergency response personnel is developed based on the requirements of 10 CFR 50, Appendix E and position specific responsibilities as defined in this document.

On-shift emergency response personnel perform emergency response activities as an extension of their normal duties and are trained annually as part of their duty specific training. Additional Emergency Preparedness information is provided as part of the Plant Access Training (PAT).

New ERO personnel receive an initial overview course that familiarizes them with the Emergency Plan by providing basic information in the following areas as well as specific information as delineated in the sections below:

- Planning Basis
- Emergency Classifications
- ERO and Responsibilities
- Call-out of ERO
- ERFs
- Communications Protocol~~/EPIO~~
- Offsite Organizations

Emergency response personnel in the following categories receive knowledge and/or performance based training initially and retraining thereafter on an annual basis:

a. Directors, Managers, and selected Coordinators within the Station ERO: Personnel identified by the ERO Communications Directory as Directors, Managers, and selected Coordinators for the Station ERO receive training appropriate to their position in accordance with the approved ERO training program. These personnel receive specialized training in the areas of:

   - Notifications
   - Emergency Classifications
   - Protective Action Recommendations

- Emergency Action Levels
- Emergency Exposure Control

The TSM~~ECO~~s and SEM~~ED~~s along with selected managers, coordinators, and ISEM~~D~~s receive training in accordance with the approved ERO training program. ~~Training in a~~Accident assessment sufficient to classify an event and to mitigate the consequences of an event is also covered in ISEM/SEM training.

b. Personnel Responsible for Accident Assessment: The skills and knowledge required to perform plant stabilization and mitigation are a normal function of operations-specific positions, as identified in Section B of this Plan. Power changes and planned and unplanned reactor shutdowns are handled on a normal operation basis. Subsequent plant stabilization and restoration is pursued using normal operating procedures. Licensed operators receive routine classroom and simulator training to ensure proficiency in this area.

1) Active Senior Licensed Control Room Personnel shall have training conducted in accordance with the approved ERO training program such that proficiency is maintained on the topics listed below. These subjects shall be covered as a minimum on an annual basis.

- Event Classification
- Protective Action Recommendations
- Radioactive Release Rate Determination
- Notification form completion and use of ~~EMNot~~ORO notification system
- Federal, state, and county notification procedures as appropriate
- Site-specific procedures for activating the onsite and offsite ERO

2) Core Damage Assessment Personnel: During an emergency when core/cladding damage is suspected, a specialized group of trained individuals perform core damage assessment. At a minimum, personnel responsible for core damage assessment receive classroom and hands-on training in the following areas:

- Available instrumentation and equipment
- Isotopic assessment and interpretation
- Core damage assessment methodology and/or proceduralized assessment methods

c. Field Teams and Radiological Analysis Personnel

1) Field Radiological Monitoring: Field radiological monitoring is performed by trained individuals who provide samples and direct readings for dose assessment calculations and dose projection comparisons.

Personnel identified as members of Field Teams receive training in accordance with the approved training program. Field Team members receive classroom and hands-on training in the following areas:

- Equipment and equipment checks
- Communications
- Plume tracking techniques

2) Personnel Monitoring: Personnel monitoring is performed by trained individuals who monitor station personnel and their vehicles for contamination during an emergency. Radiation Protection/Chemistry~~Health Physics~~ personnel receive classroom and hands-on training in the following areas:

- Personnel Monitoring Equipment and Techniques
- Decontamination Techniques for Personnel
- Decontamination Techniques for Vehicles

3) Dose Assessment: Dose assessment training includes the skills and knowledge necessary for calculation and interpretation of an offsite release and its impact on the environment under varying meteorological conditions. Individuals responsible for performing dose assessment are trained in the following areas:

- Computerized Dose Assessment
- Protective Action Recommendations
- Field Monitoring Team Interface
- PAGs associated with offsite plume exposure doses
- Basic Meteorology

~~d. Police, Security, and Firefighting Personnel~~

~~1) Local Police and Firefighting Personnel: The local police and fire departments are invited to receive training as outlined in Part 1.a of this section.~~

~~2) Security Personnel: Station security personnel are trained in accordance with training defined by the PAT and VCSNS Security Program.~~

~~3) Fire Brigade Teams: Station fire brigade members are trained in accordance with training defined by the VCSNS Fire Protection Program~~.

e. Repair and Damage Control Teams: Operations, Maintenance, and Radiation Protection/Chemistry~~, and Health Physics~~ personnel are trained as part of their normal job-specific duties to respond to both normal and abnormal plant operations.

~~Operations personnel are trained to: (1) recognize and to mitigate degrading conditions in the plant, (2) mechanically and electrically isolate damaged or malfunctioning equipment, (3) isolate fluid leaks, and (4) minimize transients.~~

Maintenance personnel are trained to troubleshoot and repair damaged or malfunctioning electrical, mechanical, or instrumentation systems as appropriate to their job classification.

~~Chemistry personnel are trained to take system samples and perform appropriate laboratory chemical analysis of the samples.~~

Radiation Protection/Chemistry~~Health Physics~~ personnel are trained to assess the radiological hazards associated with equipment repair and instruct personnel as to the appropriate protective clothing requirements, respiratory protection requirements, stay times, and other protective actions specific to the conditions present.

At least 50% of personnel from the organizations below, who are potential responders to the OSC as Damage Control Team members, are required to be qualified in the use of respiratory protection equipment. This includes in-plant supervision and craft/technical personnel for the following organizations:

- Operations
- Radiation Protection/Chemistry~~Health Physics~~
- ~~Chemistry~~
- Maintenance (Mechanical, Electrical, and I&C)

~~f. Medical Emergency Response Team and Rescue Personnel: MERT and rescue team members receive training as outlined in Part 3 of this section, First Aid Response.~~

f~~g~~. Local Support Service Personnel: Local support service personnel providing assistance during an emergency are invited to receive training as outlined in Parts 1.a and 1.b of this section.

g~~h~~. Medical Support Personnel: Onsite medical personnel receive specialized training in the handling of contaminated victims and hospital interface. Offsite ambulance and hospital personnel are offered annual training in accordance with a program provided by Emergency Preparedness.

~~i. EPIO Personnel: Corporate and station personnel responsible for disseminating public information and responding to media and public information requests receive specialized public information training.~~

h~~i~~. Communications Personnel: ERO personnel receive training on communications protocol as a part of the initial Emergency Response Overview Course. Personnel using specialized communications equipment that is not part of their normal daily function receive initial and requalification training on the equipment. Personnel involved in notifications to offsite agencies receive specialized training in the notification process.

Section 2: DELETED~~Organizational Control of Emergencies~~

~~Section B of the Plan describes the station's ERO. When the ERO is fully activated, it will be staffed as described in Section B of the Plan. This section of the Unit 1 Annex describes the on-shift ERO staffing and their responsibilities to implement the Plan.~~

~~2.1 Emergency Response Organization On-Shift Positional Responsibilities~~

~~Table 2-1: V. C. Summer On-Shift Staffing and ERO Positions~~

~~Functional Area~~	~~Major Tasks~~	~~Shift Position~~	~~Minimum Shift Compliment~~	~~ERO Position~~
~~1. Plant Operations and Assessment of Operational Aspects~~	~~Control Room Staff~~	~~Shift Manager~~	~~1~~	~~Interim Emer. Dir.~~
		~~Control Room Supervisor~~	~~1~~	~~Control Room Supervisor~~
		~~Reactor Operator~~	~~2~~	~~Reactor Operator~~
		~~Auxiliary Operator~~	~~5~~	~~Auxiliary Operator~~
~~2. Emergency Direction and Control~~	~~Command and Control~~	~~Shift Manager~~	~~(a)~~	~~Interim Emergency Director~~
~~3. Notification & Communication~~	~~Emergency Communications~~	~~Shift Manager~~	~~(a)~~	~~Interim Emergency Director~~
		~~Communicator~~	~~1(e)~~	~~State/County Communicator (e)~~
~~4. Radiological Accident Assessment and Support of Operational Accident Assessment~~	~~Dose Assess./Health Physics~~	~~Health Physics Specialist~~	~~1~~	~~Health Physics Specialist~~
	~~In-plant Surveys~~	~~Health Physics Specialist~~	~~1~~	~~Health Physics Specialist~~
	~~Chemistry~~	~~Chemistry Specialist~~	~~1~~	~~Chemistry Specialist~~
~~5. Plant System Engineering, Repair and Corrective Actions~~	~~Technical Support~~	~~Shift Technical Advisor (STA)~~	~~1~~	~~Shift Engineer~~
	~~Repair and Corrective Actions~~	~~Mechanical Maint. Mechanic~~	~~2~~	~~Damage Control Team- Mechanical~~
		~~Electrical Maint. Electrician~~	~~1~~	~~Damage Control Team- Electrical~~
		~~I&C Maint. Mechanic~~	~~1~~	~~Damage Control Team – I&C~~
~~6. In-Plant Protective Actions~~	~~Radiation Protection~~	~~Health Physics Specialist~~	~~(b)~~	~~Health Physics Specialist~~

Functional Area	Major Tasks	Shift Position	Minimum Shift Compliment	ERO Position
7. Fire Fighting	—	Fire Brigade	(c)	Fire Brigade
8. First Aid and Rescue Operations	—	Medical Emergency Response Team	(b)	Plant Personnel
9. Site Access Control and Personnel Accountability	Security and Accountability	Security Force	(d)	Security Force

(a) The Shift Manager shall function as the IED until relieved by the Emergency Director and EOF Manager
(b) May be provided by shift personnel assigned other functions

(c) Per station Fire Protection Plan

(d) Per VCSNS Security Plan

(e) Typically S/C Communicators are used for telephone talkers only. The IED/ED may designate trained and qualified S/C Communicators to complete the Emergency Notification Form prior to approval by the IED/ED.

~~2.2 Normal Shift Staffing~~

~~The VCSNS operating organization includes the personnel encompassing both the management and operation of the unit. The maintenance and technical support personnel staffing the station organization are normally onsite daily Monday through Friday, holidays excluded. Plant personnel who are on duty on a 24 hour basis are listed in Table 2-1.~~

~~The Shift Managers, one of whom is on duty at all times, are responsible for the safe and efficient operation of the plant in accordance with the Technical Specifications and operating procedures during their assigned shift. The duty Shift Manager maintains control over plant operations as the senior licensed operator unless properly relieved by another member of the station staff who holds a valid SRO License. The Control Room Supervisor maintains control over the conduct of operations and personnel in the Control Room.~~

~~Shift Technical Advisors perform accident assessment and evaluate operating conditions. Organizationally, they report to the Manager, Nuclear Operations. While on duty they diagnose off normal events and report to the Shift Manager. The duties of the Shift Technical Advisor do not include the manipulation of controls or the supervision of operators. When on duty, he will be available to the Shift Manager in the Control Room within 10 minutes of being summoned. During emergency conditions, the Shift Technical Advisor will report to the Control Room to perform their duties.~~

~~During off-hour shifts, the plant is staffed to support continuous operation. The normal operational staff includes (as a minimum) two licensed SROs (the Shift Manager and Control Room Supervisor), two licensed reactor operators, and five non-licensed operators. In addition, a Shift Technical Advisor is assigned to each shift. The initial emergency organization during off-hours shifts consists of the operating staff, with the Shift Manager serving as the IED. The IED may be relieved in the Control Room by another SRO qualified as an IED. Initial actions in regard to first aid, firefighting, rescue, damage control, radiation monitoring, emergency classification, notifications, and dose assessment are performed by the normal operational staff.~~

~~2.3 Shift Emergency Response Positional Responsibilities~~

~~The Unit 1 Annex, Table 2-1 outlines shift ERO positions required to meet minimum staffing and the major tasks assigned to each position.~~

Section 4: Emergency Facilities and Equipment

4.1 Unit-Specific Emergency Facilities

A. Control Room

The Control Room, located in the Control Building is designed to be habitable under accident conditions and shall serve as the onsite Emergency Control Center. Emergency lighting, power, air filtration, ventilation system and shielded walls enables the operators to remain in the Control Room to ensure that the reactor will remain in a safe condition. In addition, the operators shall be able to evaluate situational conditions and relay pertinent information and data to the appropriate onsite and offsite agencies and organizations during all emergencies. To ensure that shift personnel and other personnel assembled at the location can remain self-sufficient, emergency equipment and supplies shall be stored in, or near, the Control Room. The exact location and the type and quantity of emergency equipment and supplies available are specified in VCS-EPMP-0103, Emergency Equipment Checklist.

B. Technical Support Center (TSC)

The TSC, located in the Control Building is designed to be habitable under accident conditions and shall serve as the onsite Emergency Control Center after relieving the Control Room of command and control. Emergency lighting, power, air filtration, ventilation system and shielded walls enable the responders to remain in the TSC. In addition, the responders shall be able to evaluate situational conditions and relay pertinent information and data to the appropriate onsite and offsite agencies and organizations during all emergencies. This facility is located inside the Unit 1 Protected Area and provides the ability to respond and activate the facility in a timely fashion.

C. Operational Support Center (OSC)

The OSC is located on the first floor in the Auxiliary Service Building within the Protected Area and is separate from the Control Room. The OSC is the location from which survey, operations, and repair teams are dispatched into areas of the plant. It is the staging area for individuals who may be assigned to ~~first aid, search~~, survey, ~~rescue,~~ repair, and corrective action teams.

The OSC Director~~Supervisor~~ is responsible for managing the activities in the OSC including:

- Ongoing accountability of anyone dispatched from the OSC. The Control Room Supervisor or the Security Shift Manager track individuals who are assigned to the Control Room or the Security Force respectively.
- Radiological exposure control for the individuals within the OSC
- Mobilizing individuals on the emergency roster needed to fill the positions in the OSC and other support personnel such as materials and warehouse personnel

The OSC is activated ~~with an activation staff~~ within ~~about 6~~90 minutes after the declaration of an Alert, SAE, or GE.

Equipment and supplies for the OSC include protective clothing, dosimetry, and sampling and survey equipment to be used by the OSC teams.

Radiological exposure controls for the OSC include monitoring conditions and relocation if necessary.

Tools and parts available for normal plant maintenance are also available for damage control operations during emergencies.

In the event the OSC becomes uninhabitable, Emergency Plan Implementing Procedures provide details on how to relocate OSC personnel.

~~D. Onsite Laboratories~~

~~Chemistry laboratories located on the 412' elevation in the Control Building are available for emergency response during an accident. The laboratories can receive power from the plant's emergency diesel generators. General capabilities include:~~

~~Radionuclide identification in various sample media~~

~~Analysis and measurement of radionuclides in samples taken within the plant and samples taken in the plant site and offsite environment~~

~~E. First Aid Treatment Area~~

~~First aid treatment areas are located onsite for the treatment of those individuals requiring first aid. These areas are located at the Radiation Control Area Control Point at the 412' elevation of the Control Building and at the 436' elevation of the Service Building. Medical equipment and supplies are available at these locations.~~

4.2 Assessment Resources

A. Onsite Meteorological Monitoring Instrumentation

1. Redundant wind and temperature sensors are installed on a 61-meter self-supporting tower for Unit 1. Instrument elevators and 8-foot instrument booms are installed to raise and lower the sensors for easier maintenance. Measurements from these instruments provide indications to various points on the site, including recorders within the Control Room. A dew point sensor is installed near the base of the tower. A total precipitation sensor is installed on an individual pedestal near the tower. Data processing and recording equipment are located at the base of the tower. The tower is located about 1563 feet west of the Reactor Building at elevation 436 feet above MSL. The Reactor Building is at elevation 436 feet above MSL, and Monticello Reservoir is filled to elevation 425 feet above MSL. Elevations in the site vicinity range from below 230 feet on the Broad River to over 600 feet near Little Mountain. The tower-mounted sensors are as follows:

   a. At 61 meters above ground level, the upper wind speed and wind direction sensors, as well as the upper temperature sensors for the 10-61 meter differential temperature measurements are mounted on the 8-foot instrument boom.

   b. At 40 meters above ground level, the upper temperature sensors for the 10-40 meter delta temperature measurement is mounted on the 8-foot instrument boom.

   c. At 10 meters above ground level, the lower wind speed and wind direction sensors, as well as the lower temperature sensors for the 10-61 and 10-40 meter differential temperature measurements and ambient temperature readings are mounted on the 8-foot boom. Data from the meteorological measurements system are provided to an onsite data capture computer (which is capable of various data manipulations). Meteorological data necessary for the estimation of offsite dose projections is available via terminals to personnel in the Control Room, TSC, and ~~EOF~~CERC. When the onsite meteorological tower is not available for the estimation of offsite dose projections, meteorological data from the NWS in Columbia, South Carolina, will be used.

B. Onsite Radiation Monitoring Equipment

The onsite radiation monitoring capability includes an installed process, effluent, and area RMS; portable survey instrumentation; counting equipment for radiochemical analysis; and a personnel dosimetry program to record integrated exposure. Some onsite equipment is particularly valuable for accident situations and are listed in Table 4-1, Radiation Monitoring System Description.

Appendix 4 - Abbreviations, Acronyms, and Definitions

Accident (Incident or Event)	An unintentional or unexpected event resulting in radiological exposure, physical injury, or physical damage to property.
ALARA	(As Low As Reasonably Achievable) A radiation protection philosophy requiring that personnel exposure to radiation and radioactive material be kept not only within regulatory limits but be maintained As Low As Reasonably Achievable in the light of current technology with appropriate consideration for economic and social factors and for the benefits to be expected. ALARA applies not only to minimizing occupational exposure to radiation workers, but also to limiting the radioactivity of plant effluent and minimizing the potential for exposure to the public.
Annual (Annually)	At least once per 365 days ± 90 days, unless specifically identified as "based on a calendar year".
ANI	American Nuclear Insurers
ANS	Alert and Notification System
CDE	(Committed Dose Equivalent) Total Dose from internally deposited radionuclide over subsequent 50 year period to a specific organ.
CEDE	(Committed Effective Dose Equivalent) Sum of risk-weighted Committed Dose Equivalents to organs.
Certified	Official approval by written letter from the EP Manager verifying the item(s) to be accurate and up to date.
CET	Core Exit Thermocouple
CFR	(Code of Federal Regulations) The Code of Federal Regulations is a codification of the general and permanent rules published in the Federal Register by the Executive departments and agencies of the federal government. The Code is divided into 50 titles that represent broad areas subject to federal regulation. Each title is divided into chapters that usually bear the name of the issuing agency. Each chapter further subdivided into parts covering specific regulatory areas.
Cold Shutdown	A reactor condition in which the coolant temperature has been reduced to 200°F or below and the pressure has essentially been reduced to atmospheric pressure. This is also known as Mode 5.
Collaborative Platform	An information technology tool that allows real-time audio-visual communication and document sharing.
CA	(Contaminated Area) An area where radioactive material is deposited where it is not desired.
CERC	Corporate Emergency Response Center
CR	Control Room
CRM	Corporate Response Manager
DAC	(Derived Air Concentration) The concentration of a given radionuclide in air.

DDE	(Deep Dose Equivalent) Dose equivalent from external radiation at a tissue depth of 1 centimeter.
DEP	Drill/Exercise Performance
DHEC (SCDHEC)	Department of Health and Environmental Control (SC)
DHS	Department of Homeland Security (US)
DOE	Department of Energy (US)
Dominion Energy	Operates VC Summer
Dose (Radiation)	The quantity of radiation absorbed per unit of mass by the body or by any portion of the body. The unit of radiation dose is the RAD.
Dose Equivalent	Quantity that expresses all radiations on a common scale for calculating the absorbed dose. It is defined as the product of the absorbed dose in rads and certain modifying factors. The unit is rem.
Dose Rate	Dose delivered per unit time.
Dosimeter	An instrument used for measuring the absorbed dose, exposure, or similar radiation quantity.
Dosimetry	A system of dosimeters for evaluating the absorbed dose, exposure, or similar radiation quantity.
DNR (SCDNR)	Department of Natural Resources (SC)
EAB	Exclusion Area Boundary (Nuclear Exclusion Area)
EALs	Emergency Action Levels
EAS	(Emergency Alert System) A network of broadcast stations and interconnecting facilities authorized by the Federal Communications Commission to operate in a controlled manner during a war, state of public peril, disaster or other national, state and local emergencies.
~~ECO~~	~~Emergency Control Officer~~
~~ED~~	~~Emergency Director~~
EMD (SCEMD)	Emergency Management Division (SC)
ENF	(Emergency Notification Form) A template form provided by the State of SC for the purpose of disseminating information to offsite agencies regarding an emergency.
ENS	Emergency Notification System
EOC	Emergency Operations Center
~~EOF~~	~~Emergency Operations Facility~~
EPA	Environmental Protection Agency
~~EPIO~~	~~Emergency Public Information Organization~~
EPIP	(Emergency Plan Implementing Procedure) Detailed procedures which provide guidance to individuals and groups for implementation of the provisions of the emergency plan.
EPRI	Electric Power Research Institute
EPZ	(Emergency Planning Zone) A generic area defined about a nuclear facility to facilitate offsite emergency planning and develop a significant response base. It is defined for the plume and ingestion exposure pathways.
ERDS	Emergency Response Data System
ERF	Emergency Response Facilities
ERO	Emergency Response Organization
~~EMNet~~	~~Emergency Management Network~~

ETE	Evacuation Time Estimate
Evacuation	The removal of people from an area on an emergency basis to avoid or reduce possible short term radiation exposure.
Exposure	Being exposed to ionizing radiation, radioactive materials, or other hazardous substances.
External Dose	Dose from a source of radioactive material outside the body.
Facility Activation	An Emergency Response Facility is activated when the minimum staff per Figures B-1a, B-1b and B-1c 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.
FBI	Federal Bureau of Investigation
FCEMS	Fairfield County Emergency Medical Services
FEMA	Federal Emergency Management Agency
HEPA	High-efficiency particulate air filter
Frisker	Radiation monitoring equipment. This is a hand-held probe that is slowly passed near the area of interest to determine the presence or absence of radioactive material.
FRMAP	Federal Radiation Monitoring and Assessment Plan
FSAR	Final Safety Analysis Report
Gamma Rays	High-energy, short-wavelength electromagnetic radiation. Gamma rays are essentially similar to x-rays, but are usually more energetic and are nuclear in origin.
HP	(Health Physics) A general term used as a modifying phrase that may refer to facilities, equipment, programs, etc. used in the discipline of Health Physics. A profession devoted to the protection of man and his environment from unwarranted radiation exposure.
HRA	(High Radiation Area) Any area, accessible to personnel, in which there exists radiation originating in whole or in part within licensed material at such levels that a dose equivalent could be received in any one hour in excess of 100 millirem but less than 1000 millirem at 30 centimeters.
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.
HPN	Health Physics Network
HSOC	Homeland Security Operations Center
I&C	Instrument and Controls
~~ICSC~~	~~Innsbrook Corporate Support Center~~
ISEM~~D~~	Interim Station Emergency Manager~~Director~~
Ingestion Exposure Pathway	The means of ingesting radioactive fallout from the plume through the consumption of food or water within a 10 – 50 mile radius of the site.
INPO	(Institute of Nuclear Power Operations) An organization established by the utilities to set up standardized operations. By Letter of Agreement, INPO agrees to provide the service provided by their organization, coordinate the activities of the organization and provide telephone contacts of the organization during an emergency at the Station.
Internal Dose	Dose from a source of radioactive material within the body (as a result of deposition of radionuclides in body tissue).
Ionization Chamber	An instrument that detects and measures ionizing radiation by measuring the electrical current that flows when radiation ionizes gas in a chamber, making the gas a conductor of the electricity.
JIC	~~(~~Joint Information Center~~)~~ ~~A center set up in a central location where public information officers from the involved agencies come together to ensure coordination of information to be released to the media and the public. This center becomes the central point for media access to latest developments and emergency information. All information released is coordinated among the agencies involved to ensure its consistency and accuracy. This may also be referred to as the News Media Area.~~ – The facility that houses the Joint Information System.
JIS	Joint Information System – The JIS consists of the processes, procedures, and tools that facilitate the communication to the public, incident personnel, the media, and other stakeholders. The JIS integrates incident information and public affairs into a cohesive organization to provide complete, coordinated information before, during and after an incident.
KI	Potassium Iodide
LCEMS	Lexington County Emergency Medical Services
Liquid Effluent Stream	Processed liquid wastes containing radioactive materials resulting from the operation of a nuclear power reactor.
LOCA	(Loss of Coolant Accident) A loss of coolant accident can result from an opening in the primary cooling system, such as a pipe break or a stuck open relief valve.

Low Population Zone	The area which surrounds the exclusion zone and includes populations from the site out to three miles from the Unit 1 Reactor Building.
MAELU	Mutual Atomic Energy Liability Underwriters
MSL	Mean Sea Level
~~MERT~~	~~Medical Emergency Response Team~~
Monitor, Radiation	A radiation detector whose purpose is to measure the level of ionizing radiation (or quantity of radioactive material).
Monitoring	The continuous or periodic collection and assessment of pertinent information.
Monthly	At least once per 31 days ± 7 days
NEI	Nuclear Energy Institute
NFPA	National Fire Protection Association
NRC (USNRC)	Nuclear Regulatory Commission (US)
NRF	National Response Framework
NSSS	Nuclear Steam Supply System
NUREG-0654/FEMA REP1, Rev 1	Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants: The purpose of this guidance and upgraded acceptance criteria is to provide a basis for NRC licensees, and State and local governments to develop radiological emergency plans and improve emergency preparedness.
NWS	National Weather Service
Occupational Dose	A dose received by a permanent or temporary employee while engaged in activities relating to the use, possession, or surveillance of licensed radioactive material or sources of ionizing radiation. Occupational dose shall not include any exposure of an individual to radiation for the purpose of medical diagnosis or therapy. Determination of occupational dose is the responsibility of the licensee.
OCA	(Owner Controlled Area) The area bounded by the Protected Area on the inside and by the Primary Vehicle Barrier System (VBS) on the outside.
~~EOF Manager~~	~~Emergency Operations Facility Manager~~
~~ORMC~~	~~Offsite Radiological Monitoring Coordinator~~
OSC	Operational Support Center
PA	(Protected Area) the area immediately surrounding the nuclear station encompassed by physical barriers (double fence) and access to which is controlled for nuclear security purposes.
PAD	Protective Action Directives
PAG	(Protective Action Guidelines) Projected total effective dose equivalent or committed dose equivalent values to individuals in the general population that warrant protective action following a release of radioactive materials. Protective actions would be warranted provided the reduction in individual dose expected to be achieved by carrying out the protective action is not offset by excessive risks to individual safety in taking the protective actions.

Severe Accident: PWR	A nuclear accident involving a loss of core cooling and damage so severe that there are core geometry changes and possible relocation of core materials, e.g. a core melt. In accordance with the Severe Accident Management Guidelines, a severe accident has occurred when core exit thermocouple temperatures are greater than 1200 degrees F and actions to cool the core have been, and continue to be, unsuccessful. The plant is outside of the Design Bases for the station.
SHELTER	The use of the closest available structure that will provide protection from exposure to an airborne plume.
SLED	South Carolina Law Enforcement Division
SPDS	Safety Parameter Display Systems
SRO	Senior Reactor Operator
STA	Shift Technical Advisor
~~START~~	~~Simple Triage and Rapid Treatment~~
TEDE	(Total Effective Dose Equivalent) Sum of the deep dose equivalent and the committed effective dose equivalent.
TLD	(Thermo Luminescent Dosimeter) A dosimeter based on the effect of ionizing radiation on certain thermo luminescent crystals, in which radiation excites orbital electrons of some atoms to a higher energy state orbit than normal. Stimulating the crystal by controlled heating allows the electrons to return to normal orbit, thereby emitting discrete quanta of light proportional to the amount of ionizing radiation absorbed by the crystal. Emitted light can be measured and related to personnel dose from ionizing radiation.
TSC	Technical Support Center
USCG	U.S. Coast Guard
VBS	(Vehicle Barrier System) security barrier delineated by the large rocks and vehicle search areas
VCSNS (VCS)	V.C. Summer Nuclear Station
Weekly	At least once per 7 days ± 2 days
X-Ray	Highly penetrating radiation similar to gamma rays.

ATTACHMENT 3

REVISED (CLEAN) VCSNS EMERGENCY PLAN PAGES

VIRGIL C. SUMMER NUCLEAR STATION
NUCLEAR OPERATIONS

NUCLEAR OPERATIONS
COPY NO. _____

RADIATION EMERGENCY PLAN

EP-100
REVISION XX

SAFETY RELATED

requirements of 10 CFR 50 Appendix E. Development of the Emergency Plan was based on NUREG-0654.

Acceptable alternate methods, which deviate from NUREG-0654, are allowed under Regulatory Guide 1.101, "Emergency Planning and Preparedness for Nuclear Power Reactors." However, any and all deviations will be documented in the Unit 1 Annex and evaluated as continuing to meet the Planning Standards of 10 CFR 50.47(b) and 10 CFR 50 Appendix E under the 10 CFR 50.54(q) process. This evaluation process is employed to ensure the continued effectiveness of the Emergency Plan and Unit 1 Annex.

Other applicable regulations, publications, and guidance were used (see Appendix 1, "References") along with site-specific documents to ensure consistency in the planning effort.

Section E: Contiguous-Jurisdiction Emergency Planning

The Emergency Plan recognizes the state of South Carolina, in cooperation with the EPZ counties, as the overall authority responsible for Protective Action Directives (PADs) in order to protect the health and safety of the general public.

Section F: Integrated Guidance and Criteria

This plan was developed in conjunction with federal, state, and county emergency response plans to ensure a consistent and integrated response to a classified event.

Section G: Funding and Technical Assistance

Dominion Energy is dedicated to providing the level of support necessary, as dictated by federal regulation, to ensure appropriate integration of the state, county, and VCSNS radiological emergency preparedness programs.

Section H: Emergency Response Organization

Dominion Energy acknowledges its primary responsibility for planning and implementing emergency measures within the EAB and for overall plant accident assessment. These emergency measures include corrective actions, protective measures, and aid for personnel onsite. To accomplish these responsibilities, Dominion Energy has established an augmented ERO that will be mobilized to provide the initial response to an event classified as an Alert, Site Area Emergency, or General Emergency. The ERO may be partially or fully activated during an Unusual Event, if the Interim Station Emergency Manager (ISEM) determines their assistance is needed to mitigate the event. In addition, advance arrangements have been made with offsite organizations for special emergency assistance such as ambulance, medical, hospital, fire, and police services.

In the longer time frame, a framework for a Recovery Organization is set forth in this plan. It is recognized that the normal station organization will be used for much of the recovery effort, with additional resources identified at the time of the event.

Section I: Federal Response

Provisions are made within the Emergency Plan for the integration of appropriate elements of federal assistance activities. Arrangements have been made to accommodate a federal response

b. During an emergency condition classified as an Alert, Site Area Emergency, or General Emergency, the station's augmented ERO is notified and responds to augment the normal plant organization under the direction of the ISEM.

The augmented ERO consists of three major response suborganizations with inter-relationships as illustrated in Figure A-2:

1) The Onsite ERO, directed by the Station Emergency Manager (SEM), provides for:

- Control and operation of the plant.
- Mitigation of the emergency condition.
- Protection of station personnel .
- Emergency support for Operations, Engineering, and Maintenance.

2) The Offsite ERO, directed by the Corporate Response Manager (CRM) provides for:

- Offsite radiological accident assessment.
- Emergency support for acquisition of material and support personnel.
- The primary interface between VCSNS and outside organizations responsible for the protection of the public.

c. Procedures for training and maintenance of the emergency organization are in place to ensure 24-hour-per-day staffing for emergency response, including established communication links.

2. State and County Functions and Responsibilities

The state and counties have emergency response plans that specify the responsibilities and functions for the major agencies, departments, and key individuals of their organizations. This information is located in their respective plans.

3. Agreements in Planning Effort

Written agreements establishing the concept of operations developed between VCSNS and other support organizations having an emergency response role have been developed. These agreements identify the emergency measures to be provided, the mutually accepted criteria for implementation, and the arrangements for exchange of information. Agreement letters are not necessary with federal agencies that are legally required to respond based on federal law. However, agreements are necessary if the agency was expected to provide assistance not required by law. Letters of Agreement shall be obtained with private contractors and others who provide services in support of the station during a declared emergency. A list of Letters of Agreement is provided in Appendix 2 of this Plan, the actual letters are maintained on file at the station. Letters of Agreement, as a minimum, state that the cooperating organization will provide their normal services in support of an emergency at the VCSNS site. A contract/purchase order with a private contractor is considered acceptable in lieu of a Letter of Agreement for the specified duration of the contract.

4. Continuous Coverage

VCSNS maintains 24-hour emergency response capability. The normal on-shift complement provides the initial response to an emergency. This group is trained to handle emergency situations (e.g., initiate implementation of the Emergency Plan, make initial accident assessment, emergency classification, notifications, communications, and PARs) until the augmented ERO arrives. The ERO is composed of a broad spectrum of personnel with specialties in Operations, Maintenance, Engineering, and Radiation Protection /Chemistry, who are available and trained to augment on-shift personnel in an emergency. Procedures for training and maintenance of the emergency organization are in place to provide the capability of continuous (24-hour) operations.

The SEM, located in the Technical Support Center (TSC), has the authority and responsibility for assuring continuity of resources (technical, administrative, and material) in the event of the activation of the ERO.

5. Long-Duration Events

VCSNS maintains procedures for establishing the needed emergency response personnel during long-duration events. Appropriate staffing levels should be discussed with the SEM, and CRM to minimize fatigue among the ERO. This discussion should consider the following:

a. Ensure shift staffing is sufficient to handle all emergency tasks. Consider having twice the needed personnel required to implement all mitigating strategies to ensure sufficient manpower is available.

b. Consider combining ERO teams at event onset to ensure that there are sufficient personnel to handle all tasks (e.g. A and C ERO teams, and B and D ERO Teams.)

c. Consider starting initial shift rotation of 12 hours on and 12 hours off to ensure that continuous coverage is maintained throughout the event. As the duration of the event continues, consider providing time off for personnel to prevent fatigue or stress, if the situation allows.

d. Consideration should be made for those emergency responders who need to manage family and other personal matters (on a case by case basis) while the emergency is in progress.

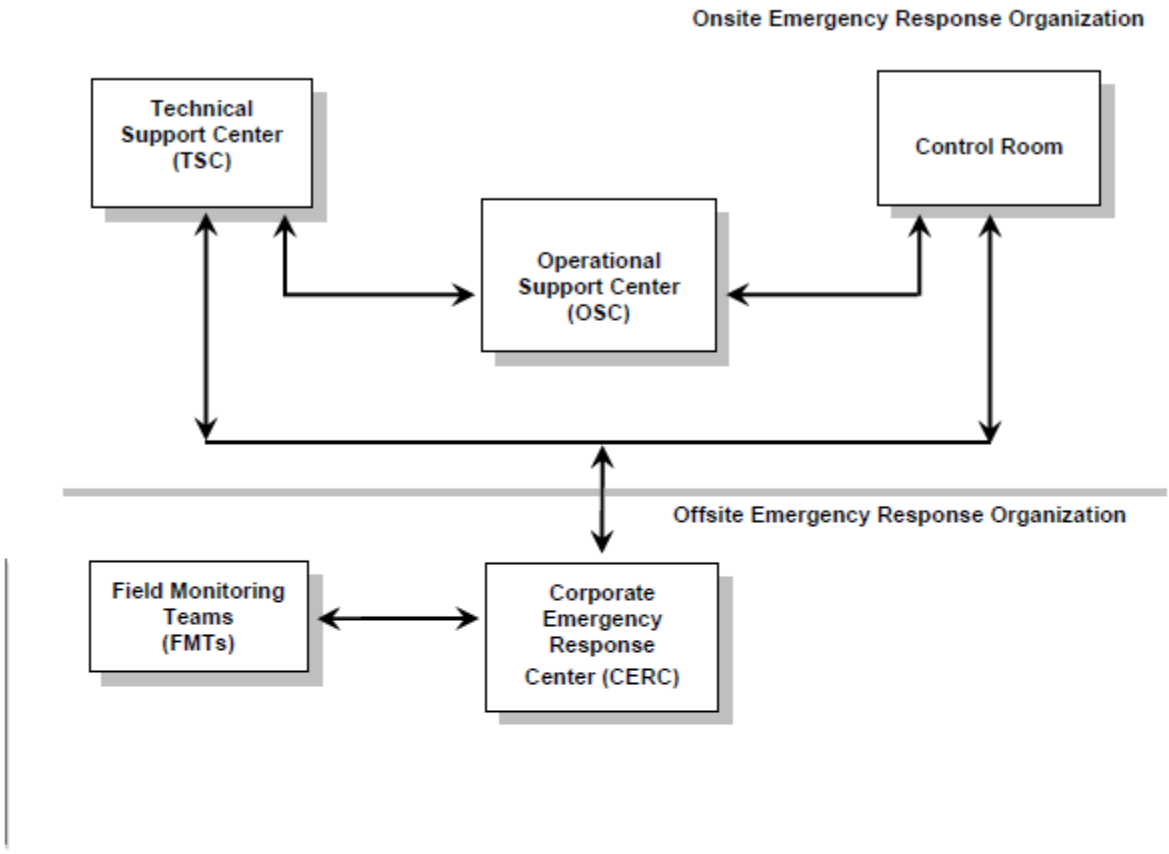


Figure A-2: VCSNS Augmented Emergency Response Organization Interrelationships

Section B: Emergency Response Organization

This section describes the ERO, its key positions, and associated responsibilities. It outlines the staffing requirements that provide initial emergency response actions and provisions for timely augmentation of on-shift personnel when required.

1. On-Shift Emergency Response Organization Assignments

The normal plant personnel complement is established with the Site Vice President, having overall authority for station operations. The Site Vice President, directs the unit organization in the management of the various departments while the Shift Manager retains the responsibility for actual operation of plant systems.

The station has personnel on-shift at all times that can provide an initial response to an Emergency Event. Table B-1a outlines the unit on-shift and augmented emergency organization. Members of the on-shift organization are trained on their responsibilities and duties in the event of an emergency and are capable of performing all response actions in an Unusual Event and the initial actions of higher classifications. The ERO will be activated at an Alert or higher classification..

Shift personnel have the capability at all times to perform detection, mitigation, classification, and notification functions required in the early phases of an emergency. Shift augmentation and further ERO involvement will be determined by the extent and magnitude of the event. When a transition to Severe Accident Management Guidelines (SAMGs) is initiated, the on-shift crew assumes the duties and responsibilities of the SAMG implementers.

Shift Manager: Has the responsibility and the authority to declare an emergency and becomes the Interim Station Emergency Manager. In that role, the ISEM will initiate the appropriate immediate action in accordance with written procedures, mitigate the consequences of the emergency, activate the ERO at an Alert, Site Area Emergency or General Emergency and notify offsite support and government agencies, as appropriate. In the Shift Manager's absence or incapacitation, the line of succession is defined by unit's Operations and Emergency Plan Procedures.

Shift Technical Advisor: A qualified individual assumes an overview role as the technical advisor with the specific responsibility of monitoring the maintenance of core cooling and containment integrity. An individual assigned the duty as the Shift Technical Advisor shall be available to the unit Control Room at all times.

Radiation Protection / Chemistry:. Radiation Protection and Chemistry carries out health physics and chemistry functions including radiological surveys, sample collection, issuing radiation work permits, personnel monitoring and maintaining primary and secondary chemistry.

An individual on each shift is trained and made available to act as the State/Local Communicator. This individual can notify station personnel, state agencies, county agencies, and the NRC. The State/Local Communicator will maintain communications as necessary until relieved by a qualified member from the augmented ERO. Typically S/L Communicators are used for telephone talkers only. The ISEM may designate trained and qualified S/L Communicators to complete the Emergency Notification Form prior to approval by the ISEM/SEM.

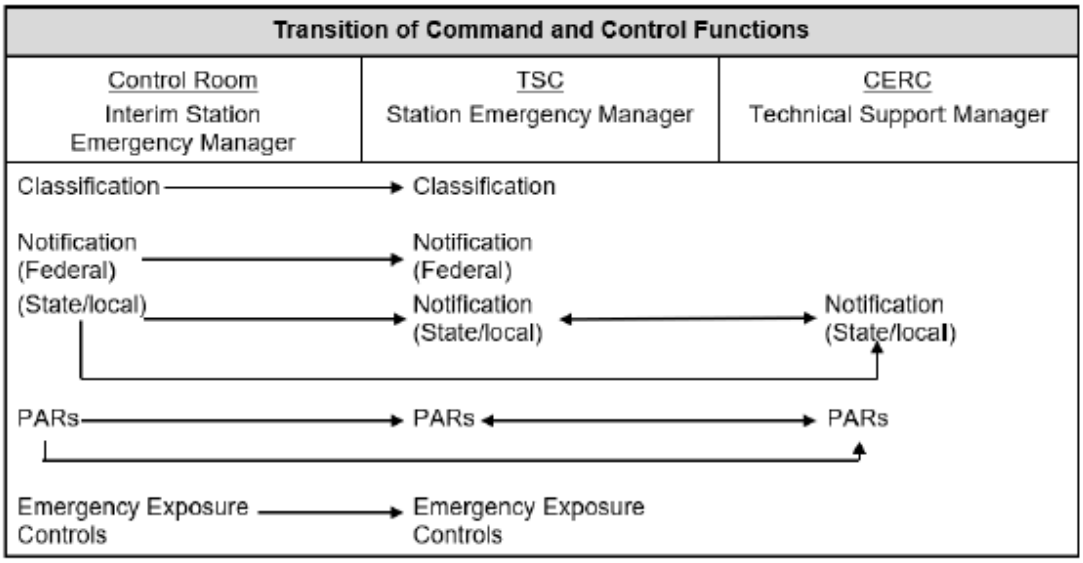
2. Authority over the Emergency Response Organization

The ISEM, SEM, and Corporate Response Manager (CRM) are the designated individuals who have overall authority and responsibility, management ability, and technical knowledge for coordinating all emergency response activities at the VCSNS..

3. Criteria for Assuming Command and Control (Succession)

Emergency personnel assume responsibility for their positions upon receiving notification to activate. The responsibility for initial assessment of, and response to, an emergency rests with the Shift Manager. The Shift Manager is the ISEM and has the SEM's responsibilities and authority until relieved by a qualified SEM. The SEM will relieve the Shift Manager of the responsibility for continued assessment of the severity of the emergency and functions as part of the ERO as appropriate in accordance with the guidance provided in the Emergency Plan, the Unit 1 Annex, and the emergency plan procedures. Final succession is achieved when the SEM TSM and CRM assume overall command and control, and directs VCSNS's emergency response activities.

The Control Room is to be relieved of command and control as soon as possible after the declaration of an Alert or higher classification. Command and control functions are transferred per the diagram below.



4. Non-Delegable Duties

Non-delegable duties include the following functions:

- Event classification
- Development of PARs for the general public
- Notification of offsite authorities (approval of state, county, and NRC notifications)

The Shift Manager is responsible for the initial classification of an event and assumes the position as ISEM. In this capacity, the Shift Manager has responsibility for performing the non-delegable responsibilities until relieved.

The SEM and the Technical Support Manager in the CERC will relieve the ISEM of the command and control, event classification, notification, and Protective Action Recommendation duties.

5. Emergency Response Organization Position Responsibilities

Table B-1a outlines ERO positions required to meet minimum staffing and augmentation of the on-shift complement upon activation of the Emergency Response Organization (ERO). The augmentation staffing levels are used as a planning basis to cover a wide range of possible events. For extended events (one that is expected to continue for more than 24 hours), actual staffing will be established by the SEM and CRM based on the event and personnel availability.

a. Onsite ERO (Figure B-1a and b): The Onsite ERO is activated during an emergency classified as an Alert or higher. It can also be activated by the ISEM at his discretion during an Unusual Event. It functions under the direction of the SEM, who is responsible for organizing and coordinating the emergency efforts onsite.

The Onsite ERO consists of station personnel who are involved with emergency response efforts necessary to control the plant during an incident. This organization operates out of the Control Room, the Technical Support Center (TSC), and the Operational Support Center (OSC). Collectively, members of the Onsite ERO provide for the following activities during an emergency:

- Emergency Direction and Control
- Notification / Communication
- Radiological Accident Assessment
- Plant System Engineering
- Repair and Corrective Actions

Those personnel identified to augment the on-shift personnel within 60 minutes for performance of support activities and 90 minutes for positions providing relief of emergency activities for control room personnel at the declaration of an Alert or higher classification are part of the on-call ERO. These personnel are immediately available during normal working hours and are contacted by a call out system during nonworking hours.

For security-related events that would prevent the emergency responders from reaching the site, the augmented TSC, OSC, and Control Room responders would be directed to respond to the Alternative Facility or another designated offsite location.

ERO personnel shall have the authority to perform assigned duties in a manner consistent with the objectives of this plan. In addition to maintaining adequate documentation of the event, position responsibilities include:

1) Shift Manager (Interim Station Emergency Manager) CR

A Shift Manager is on duty 24 hours a day and is the ISEM in a declared emergency until relieved of this function. While serving in this capacity, the Shift Manager is responsible for:

- Activating the ERO (as deemed appropriate or as procedurally required).
- Initiating the NRC Emergency Response Data System (ERDS).
- Performing those duties outlined for the SEM and CRM.

The on-duty Shift Manager directs the activities of the operating crew and is responsible for the safe operation of the plant in compliance with the unit NRC operating license and the unit operating procedures. The Shift Manager, after relinquishing command and control, functionally reports to the SEM in the TSC.

2) Station Emergency Manager (SEM) TSC

The SEM supervises and directs the Onsite ERO. The SEM's responsibilities include organizing and coordinating the onsite emergency efforts. Additionally, the SEM has the requisite authority, plant operating experience, and qualifications to implement in-plant recovery operations. The SEM is responsible for relieving the ISEM of classifying emergencies, and other non-delegable duties.

3) Radiological Assessment Director (RAD) TSC

The Radiological Assessment Director reports to the SEM and supervises the activities of the onsite radiological assessments. The supervisor directs the staff in determining the extent and nature of radiological or hazardous material problems onsite.

4) Dose Assessment Team Leader TSC

Maintains contact with and transmits instructions to the Offsite Monitoring teams and operates the dose assessment program. The Dose Assessment Team Leader interprets radiological data from the offsite monitoring teams reports the results of the offsite releases and PARs based on dose projections to the RAD.

5) Offsite Monitoring Teams TSC

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

6) Emergency Maintenance Director TSC

The Emergency Maintenance Director (EMD) reports to the SEM in the TSC and is responsible for advising the SEM on emergency maintenance activities including prioritization and status and provides an interface with the OSC Director.

7) Emergency Security Director TSC

The Emergency Security Director (ESD) reports to the SEM in the TSC and acts as the liaison between site security and the TSC and directs security activities.

8) Emergency Technical Director TSC

The Emergency Technical Director reports to the SEM and directs a staff of engineers in performing technical assessments of station emergencies and assists in recovery planning.

9) Technical Support Staff — TSC
Reactor, Electrical, and Mechanical Engineers make up the technical support staff. These Engineers determine source term, evaluate damage assessment reports and support the development of mitigation recommendations, strategies, and procedures to recover the plant and return it to an operational state.

10) Emergency Operations Director — TSC
The Emergency Operations Director reports to the SEM. Major functions include directing activities of operations personnel, determining the extent of station emergencies, and recommending corrective actions.

11) NRC Emergency Communicator — TSC
The NRC Emergency Communicator reports to the Station Emergency Manager (SEM) in the TSC. The communicator provides updates and responds to inquiries from the NRC for plant status, emergency classifications, and mitigation assessments and actions.

12) State/Local Communicator — TSC
The State/Local Communicator reports to the SEM and ensures that initial notifications are communicated to the offsite officials within 15 minutes after the change in classification or a change in PARs and that follow-up notifications are made within about 60 minutes of the previous notification. This position will exchange information with appropriate state and county agencies regarding emergency notification forms or other questions that may arise when the CERC is not available.

13) Operational Support Center Director — OSC
The OSC Director reports to the Emergency Maintenance Director in the TSC and supervises the activities of OSC personnel while implementing the mitigation strategies and procedures.

14) Radiation Protection Supervisor — OSC
Directs activities associated with inplant, onsite and personnel monitoring. Reports to the RAD, provides survey results for offsite dose assessment and recommends protective measures.

15) Operational Support Center Damage Control Teams — OSC
Specialists and Operators make-up the OSC Damage Control Teams. These teams perform emergency mitigation tasks throughout the station. Individuals from RP/Chemistry, Mechanical, Electrical, and I&C Maintenance, and Operations are always available as part of the OSC Damage Control Teams. Individuals from other plant organizations may also be called to assist in emergency mitigation efforts.

b. CERC (Figure B-1c): The CERC is activated during an emergency classified as an Alert or higher. It functions under the direction of the CRM and is responsible for offsite emergency response activities. These activities include providing information to and interface with offsite authorities; monitoring offsite results of the event; supporting the onsite organization, and implementation of the Joint Information System (JIS).

1) Corporate Response Manager (CRM) — CERC
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 in

the affected station(s) in the mitigation of recovery from an accident. The CRM works with state and federal agency representatives 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.

2) Technical Support Manager CERC

The Technical Support Manager (TSM) is responsible for the command functions related to prompt and accurate dose assessments, notifying state and local governments, 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 working with the SEM to determine the need to escalate the emergency classification. The TSM supervises the Operations Support Team and the Accident Assessment Team.

3) Radiological Assessment Coordinator (RAC) CERC

The RAC reports to the Technical Support Manager 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 Filed 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.

4) Accident Assessment Team CERC

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

5) Operations Support Coordinator CERC

The Operations Support Coordinator 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 mitigations. The Coordinator supervises the Operations Support Team.

6) Operations Support Team CERC

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

7) Resource Support Manager CERC

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.

8) Resource Support Team CERC
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.)

9) Nuclear News Manager CERC
The Nuclear News Manager (NNM) reports to the CRM and is responsible for overall control of the Joint Information System (JIS) including media and public information functions.

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

11) Chief Technical Spokesperson CERC
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 Media Briefing Support Team.

12) Media Briefing Support Team CERC
The Media Briefing Support team will assist the CTS by providing technical advice and interface with offsite response organization public information staff.

6. Emergency Response Organization Block Diagram

Part 2 Section B and Table B-1a, list the basis for the ERO and the supporting positions assigned to interface with federal, state, and county authorities. Section B.5 discusses specific responsibilities and the interrelationships for these positions.

7. Industry/Private Support Organizations

VCSNS retains contractors to provide supporting services. A contract/purchase order with a private contractor is acceptable in lieu of an agreement letter for the specified duration of the contract. Institute of Nuclear Power Organization (INPO), Electric Power Research Institute (EPRI), and Nuclear Energy Institute (NEI) maintain a coordination agreement on emergency information with their member utilities.

Among services currently provided are the following:

a. Institute of Nuclear Power Operations (INPO): Experience has shown that a utility may need resources beyond in-house capabilities for the recovery from a nuclear plant emergency. One of the roles of INPO is to assist affected utilities by quickly applying the resources of the nuclear industry to meet the needs of an emergency. INPO has an emergency response plan that enables it to provide the following emergency support functions:

- Assistance to the affected utility in locating sources of emergency personnel, equipment, and operational analysis.

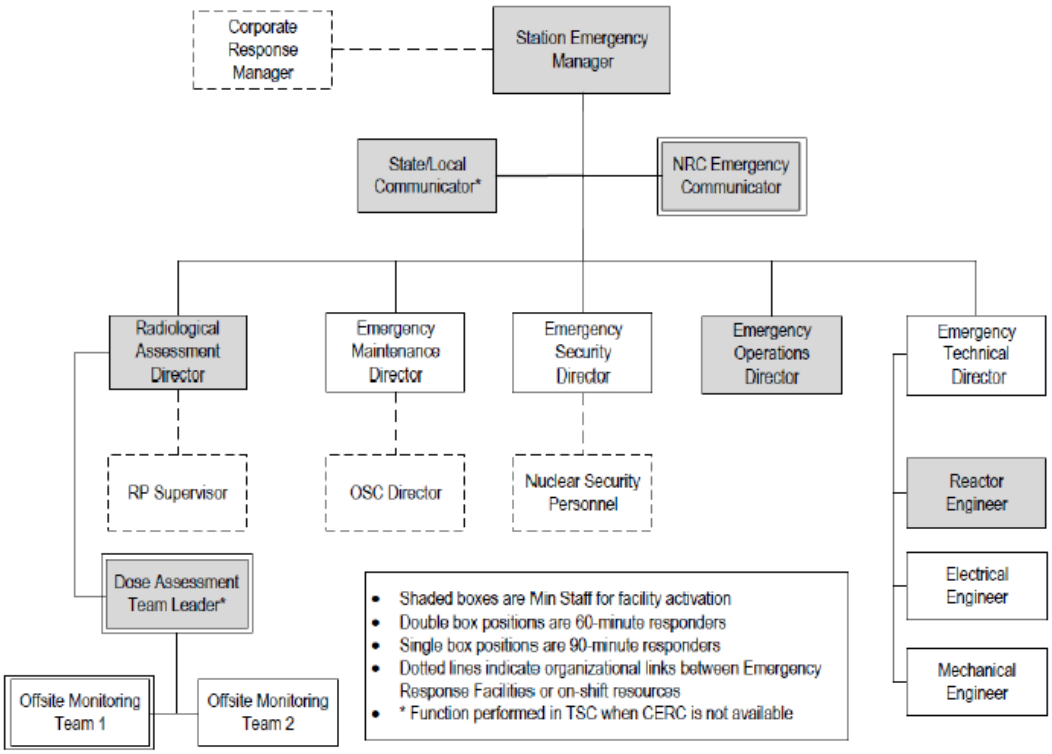


Figure B-1a: TSC Organization

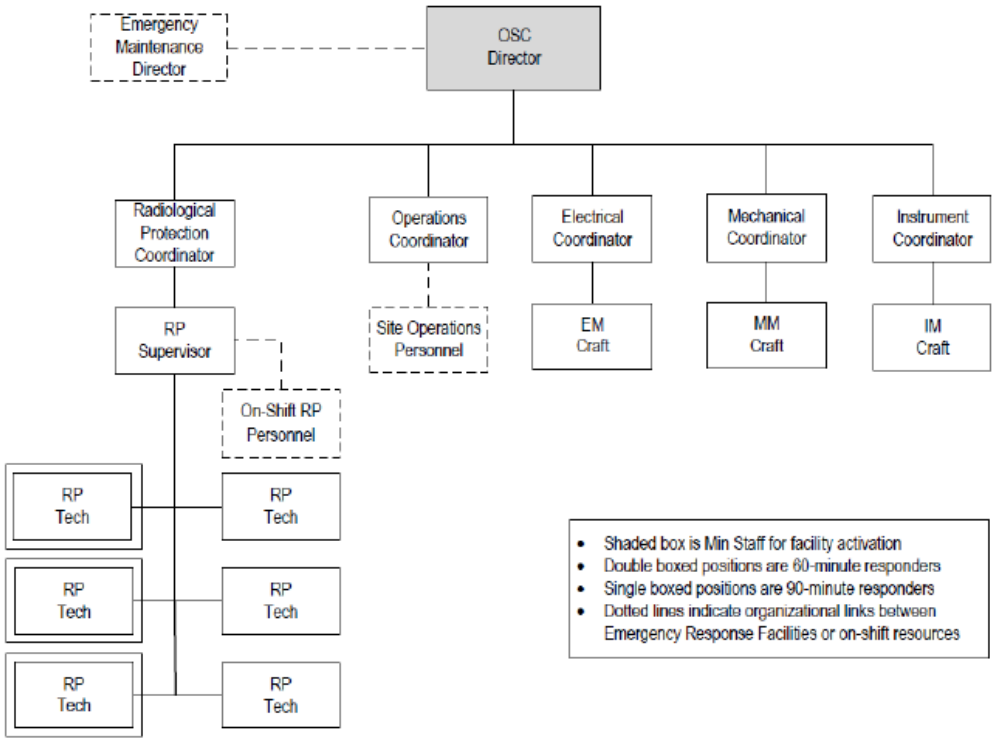


Figure B-1b: OSC Organization

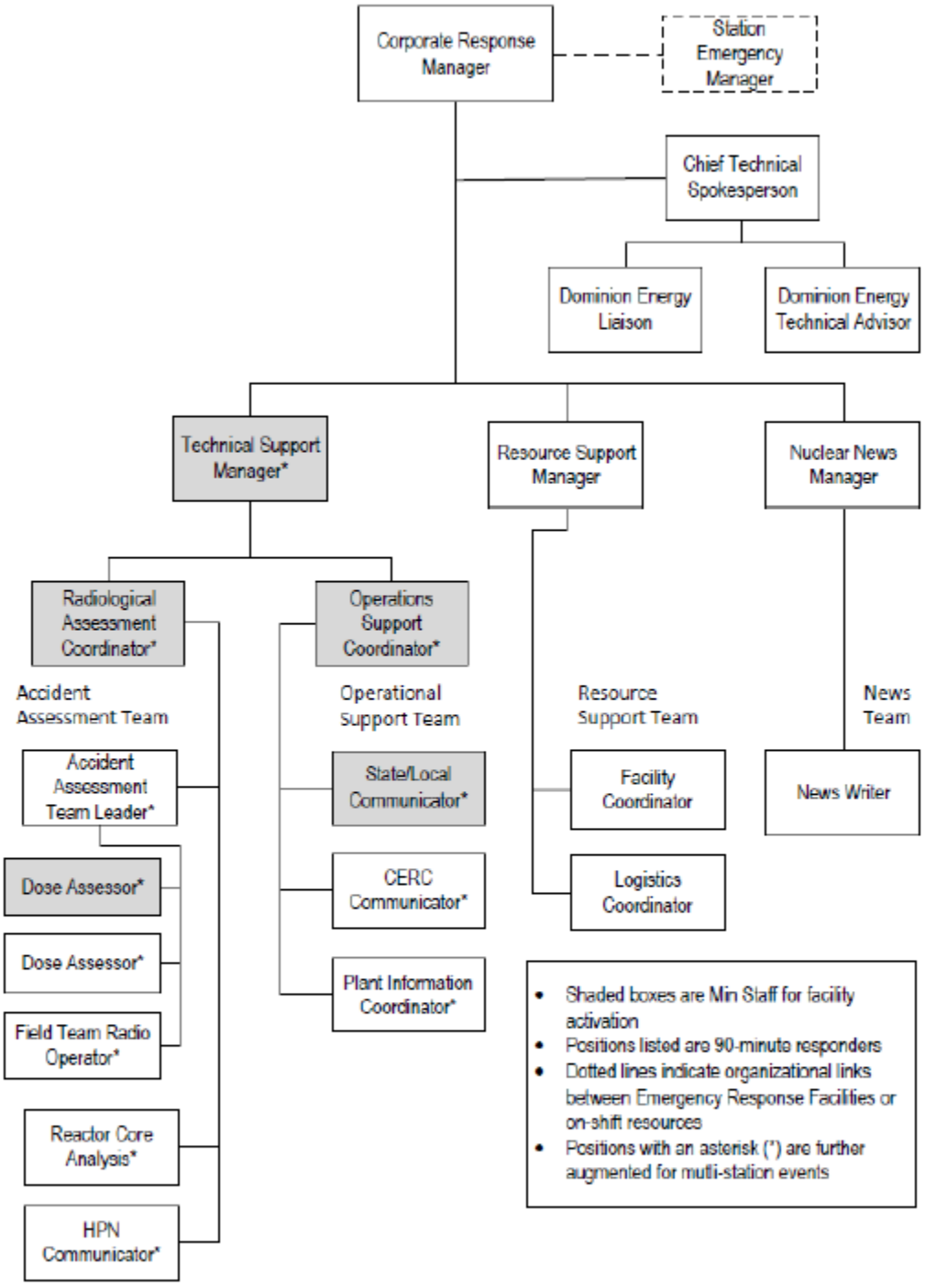


Figure B-1c: CERC Organization

Table B-1a: Staffing Requirements for the VCSNS ERO

Functional Area	Major Tasks	Emergency Positions	Shift Staffing	60 Minutes	90 Minutes
Emergency Direction and Control	Classification/Oversight	Shift Manager (SRO)	1	-----	-----
		Station Emergency Manager (TSC)	-----	-----	1
		Emergency Operations Director (TSC)	-----	-----	1
		Technical Support Manager (CERC)	-----	-----	1
Notification & Communication	Licensee, Local/State & Federal	Emergency Communicator	1	-----	-----
		State/Local Communicator (TSC)	-----	-----	1
		NRC Emergency Communicator (CR/TSC)	-----	1	-----
		State/local Communicator (CERC)	-----	-----	1
Radiological Accident Assessment	Offsite Dose Assessment	Shift Dose Assessor	1*	-----	-----
		Radiological Assessment Director (TSC)	-----	-----	1
		Dose Assessment Team Leader (TSC)	-----	1	-----
		Radiological Assessment Coordinator (CERC)	-----	-----	1
		Dose Assessor (CERC)	-----	-----	1
		Operations Support Coordinator (CERC)	-----	-----	1
	Offsite Surveys	Offsite Monitoring Leader	-----	1	1
		Offsite Monitoring Driver	-----	1	1
	In-plant / On-Site (out-of-plant) Surveys and Protective Actions	RP qualified individuals	2	3	3
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. Maintenance Coordinator (OSC)	-----	-----	1
		Elec. Maintenance Coordinator (OSC)	-----	-----	1
		I&C Maintenance Coordinator (OSC)	-----	-----	1
		Site RP Coordinator (OSC)	-----	-----	1
TOTAL:			**5**	**7**	**25**

*May be performed by someone filling another position having functional qualifications

Section C: Emergency Response Support and Resources

This section describes the provisions for requesting and effectively using support resources and for accommodating offsite officials at the VCSNS emergency response facilities.

1. Federal Response Support and Resources

Assistance is available from federal agencies through the NRF. The lead federal agency who provides direct assistance to VCSNS during an emergency is the NRC. Other federal agencies, such as the DHS and the DOE provide assistance to the state through implementation of the NRF.

a. Sections A and B of this plan identify the specific individuals by title who are authorized to request federal assistance.

b. Federal agencies that may provide assistance in direct support of VCSNS in the event of an accident are identified in Section A of this plan. If needed, federal resources are made available to VCSNS in an expeditious and timely manner.

c. Each emergency response facility has the equipment and communications capability necessary for a continuous high level of response, interaction, and communication among key personnel during emergency conditions. The emergency facilities are able to accommodate federal representatives with working areas provided for their use based on the NRC Response Coordination Manual 1996 (RCM-96) or NUREG-0728, accommodation guidelines for the initial site response teams.

d. Communication pathways provided in each of these facilities include access to dedicated landline telephones, wireless telephones and FTS telephones as provided by the NRC and include the Reactor Safety Counterpart Link (RSCL), Management Counterpart Link (MCL), the Protective Measures Counterpart Link (PMCL), and the Local Area Network (LAN). These FTS lines are in place in the appropriate VCSNS emergency response facilities and are for use by the NRC Response Team upon their arrival. The VCSNS ERO does not normally utilize these communication links.

2. Liaisons

a. The NRC, FEMA, and the state(s) may dispatch representatives to the CERC or the V.C. Summer Nuclear Operations Building (NOB) where accommodations have been provided.

b. At the Site Area Emergency level and above, VCSNS personnel are assigned as liaisons to the state of South Carolina, Lexington County, Richland County, Newberry County, and Fairfield County EOCs, when they are activated. These representatives act as technical liaisons to interpret emergency action levels, explain accident conditions, and provide technical information regarding actions by the station's ERO.

3. Radiological Laboratories

Support of the radiation monitoring and analysis effort is provided by an onsite laboratory. The onsite laboratory is the central point for receipt and analysis of all onsite samples and includes equipment for chemical analyses and for the analysis of radioactivity.

Section D: Emergency Classification System

This section describes the classification and emergency action level scheme used to determine the minimum response to an abnormal event at the station. This scheme is based on plant systems, effluent parameters, and operating procedures for each unit. The initial response of federal, state, and county agencies depends on information provided by the ERO. The station's Emergency Preparedness Staff works closely with the state of South Carolina and county agencies to ensure consistency in classification schemes and procedural interfaces.

1. Emergency Classification System

The Emergency Plan provides for classification of emergencies into four (4) categories or conditions, covering the postulated spectrum of emergency situations. They are:

- Unusual Event
- Alert
- Site Area Emergency
- General Emergency

Each classification is characterized by EALs or event Initiating Conditions (IC) and addresses emergencies of increasing severity.

a. Unusual Event: Events are in progress or have occurred that 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.

This is the least severe of the four levels. The purpose of this classification is to bring response personnel and offsite agencies to a state of readiness in the event the situation degrades and to provide systematic handling of information and decision making. The Unit 1 Shift Manager will classify an Unusual Event and become the ISEM.

Required actions at this classification include:

- Notifications to station and company management
- Notification, within 15 minutes, of the state and counties
- At the discretion of the ISEM, or the station management, full or selective staffing of any one or more of the emergency response facilities may be initiated
- Notification of the NRC immediately after state/local notifications and within 60 minutes of classification
- Assessment of the situation and response as necessary, which may include escalating to a higher classification when and if conditions warrant

- When the event is terminated, close-out is performed over communication links to offsite authorities (i.e., NRC, state, county), participating in the response by providing a summary of the event
- Provide a formal written summary transmitted to the state and counties within 24 hours. The formal written summary can be accomplished via an email summary from termination of an Unusual Event.

b. Alert: Events are in progress or have occurred that involve an actual or potential substantial degradation of the level of safety of the plant or a security event that involves probable life-threatening risk to site personnel or damage to site equipment because of HOSTILE ACTION. Any releases are expected to be limited to small fractions of the EPA Protective Action Guideline (PAG) exposure levels.

The purpose of this classification is to ensure that emergency response personnel are readily available and to provide offsite authorities with current status information. An Alert will be classified as the initiating event or as escalation from an Unusual Event.

Required actions at this classification include:

- Notifications to station management
- Notification, within 15 minutes, of the state and counties
- Activation of the ERO
- Transfer of command and control
- Notification of the NRC immediately after State/Local notification not to exceed 60 minutes from the time of classification
- Notification of INPO and ANI
- Assessment of the situation and response as necessary, which may include escalating to a higher classification if and when conditions warrant
- Onsite and offsite field teams are sent to staging areas or dispatched to monitor for releases of radiation to the environment
- Keeping offsite authorities informed of plant status by providing periodic updates to include meteorological and radiological data
- When the event is terminated, close-out is performed over communication links to offsite authorities participating in the response by providing a verbal summary of the event (i.e., NRC, state, county), followed by formal written summary transmitted to the state and counties within 8 hours

c. Site Area Emergency: Events are in progress or have occurred that involve actual or likely major failures of plant functions needed for protection of the public or HOSTILE ACTIONS that result in intentional damage or malicious acts 1) toward site personnel or equipment that could lead to the likely failure of, or 2) that prevent effective access to, equipment needed for the protection of the public. Any releases are not expected to result in exposure levels which exceed EPA PAG exposure levels beyond the site boundary.

Required actions at this classification, in addition to those listed under the Alert level, include:

- Activation of the ERO
- If not previously performed, assembly/accountability shall be performed and site evacuation of nonessential personnel shall be initiated
- Dispatch of plant technical liaisons to the county and state EOCs when they are activated to provide a plant-knowledgeable individual to explain plant communications regarding the emergency and support the interaction with the offsite authorities during the emergency
- Keeping offsite authorities informed of plant status by providing periodic updates to include meteorological data and projected or actual doses for any releases that have occurred
- When the event is terminated, close-out is performed over communication links to offsite authorities participating in the response by providing a verbal summary of the event (i.e., NRC, state, county), followed by formal written summary transmitted to the state and counties within 8 hours

d. General Emergency: Events are in progress or have occurred that 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 EPA PAG exposure levels offsite for more than the immediate site area.

The purpose of this classification, in addition to those of the Site Area Emergency level, is to initiate predetermined protective actions for the public and provide continuous assessment of information from monitoring groups.

Required actions at this classification, in addition to those listed under the Alert and Site Area Emergency, include:

- A PAR will be determined and issued
- Assessment of the situation and response as necessary
- When the event is terminated, close-out is performed over communication links to offsite authorities participating in the response by providing a verbal summary of the event (i.e., NRC, state, county), followed by formal written summary transmitted to the state and counties within 8 hours.

e. Classification Downgrading: VCSNS's policy is that emergency classifications shall not be downgraded to a lower classification. Once declared, the event shall remain in effect until no classification is warranted, a higher classification is required, or until such time as conditions warrant entry into the Recovery Phase.

f. Guidance for Termination of an Emergency: The purpose of terminating an emergency is to provide an orderly turnover of plant control from the EROs to the normal VCSNS plant organization. Termination of the emergency is authorized by the CRM in command and control. If the emergency is classified as an Alert or higher, the ISEM must await the activation of the emergency response facilities and turn over command and control to the SEM and CRM before initiating the Recovery/Termination Phase. The considerations provided in the emergency plan procedures must be performed before exiting the emergency event. Consultation with governmental agencies and other parties shall be conducted before termination of an event classified as Site Area Emergency or General Emergency. Notifications shall be transmitted to appropriate agencies to terminate an event. When a classified event is terminated a Recovery Phase will be entered.

g. Recovery Phase: That period when the emergency phase is over and activities are being taken to return the situation to a normal state (acceptable condition). The plant is under control and no potential for further degradation to the plant or the environment is believed to exist.

   Entry into the Recovery Phase will be authorized by the CRM after consultation with the SEM at an Alert or higher classification and the offsite authorities if a Site Area Emergency or General Emergency was declared. The ISEM may enter the Recovery/Termination Phase after the Unusual Event when conditions warrant.

   Required actions for Recovery Phase include:

   - The state and the NRC shall be consulted prior to entry into recovery from a Site Area Emergency or a General Emergency.
   - Notifications will be made to station management, state, counties, and NRC.
   - A Recovery organization will be established to manage repairs to return the unit to an acceptable condition, and support environmental monitoring activities as requested in coordination with federal and state efforts.
   - INPO and ANI are notified of Recovery.

h. VCSNS Security Plan: VCSNS has a Security Plan that complies with the requirements of 10 CFR 73. The interface between the Radiological Emergency Plan and the Security Plan is one of parallel operation. The plans are compatible. The Radiation Emergency Plan response measures, once initiated, are executed in parallel with measures taken in accordance with the Security Plan. During a classified event, the individual in overall command and control has responsibility for implementing both plans.

   Threats made to VCSNS facilities are evaluated in accordance with established threat assessment procedures and the Security Plan. The Security Plan, Appendix C, Safeguards Contingency Plan, identifies situations that could be ICs for EAL classifications. Contingency events include bomb threats, attack threats, civil

disturbances, Protected Area intrusions, loss of guard/post contact, vital area intrusions, bomb devices discovered, loss of guard force, hostages, extortion, fire/explosions, internal disturbances, security communications failure, and obvious attempts of tampering. The Safeguards Contingency Plan provides guidance for decisions and actions to be taken for each security contingency event. As guidance, the Safeguards Contingency Plan allows for differing responses depending upon the assessment of the actual situation within each contingency event classification.

The assessment of any security contingency event and the decision to initiate, or not to implement the Radiation Emergency Plan, will be the responsibility of the Shift Manager. All identified security contingency events have the potential of being assessed as ICs for a radiological emergency declaration.

2. Emergency Action Level Technical Basis

VCS-EPP-0001, Classification of Emergencies, includes Unit-Specific EALs consistent with the general class descriptions and provided in NEI guidance documentation in accordance with Regulatory Guide 1.101, "Emergency Planning and Preparedness for Nuclear Power Reactors." Where possible, these EALs will be related to plant instrumentation readings.

Emergency classifications are characterized by EALs. The Threshold Values are referenced whenever an Initiating Condition is reached. An Initiating Condition is one of a predetermined subset of unit conditions, where either the potential exists for a radiological emergency, or such an emergency has occurred. Defined in this manner, an Initiating Condition is an emergency condition, which sets it apart from the broad class of conditions that may or may not have the potential to escalate into a radiological emergency. Ics are arranged in one of the Recognition Categories.

EALs are for unplanned events. A planned evolution involves preplanning to address the limitations imposed by the condition, the performance of required surveillance testing, and the implementation of specific controls before knowingly entering the condition. Planned evolutions to test, manipulate, repair, perform maintenance or modifications to systems and equipment that result in an EAL Threshold Value being met or exceeded are not subject to classification and activation requirements as long as the evolution proceeds as planned. However, these conditions may be subject to the reporting requirements of 10 CFR 50.72.

An emergency is classified after assessing abnormal plant conditions and comparing them to EAL Threshold Values for the appropriate Ics. Classifications are based on the evaluation of VCSNS. EAL matrix tables organized by recognition categories are used to facilitate the comparison. The EAL matrix for Unit 1 is used when the unit is in the Technical Specification defined modes of Power Operations as: Power Operations, Startup, Hot Standby, Hot Shutdown, Cold Shutdown, Refueling, or the Defueled mode.

All recognition categories should be reviewed for applicability prior to classification. The EALs are coded with a letter and number designator. All Ics, which describe the severity of a common condition (series), are located above the EALs.

3. Offsite Classification Systems

VCSNS works with the state and counties to ensure consistency between classification schemes. The content of the EALs is reviewed with the state and county authorities on an

Section E: Notification Methods and Procedures

This section describes the notification of state and county response organizations, federal agencies, and VCSNS emergency response personnel. It outlines the content of initial and follow-up messages to response organizations within the plume exposure pathway EPZ.

1. Bases for Emergency Response Organization Notification

VCSNS, in cooperation with state and county authorities, has established mutually agreeable methods and procedures for notification of offsite response organizations consistent with the emergency classification and action level scheme. Notifications to offsite agencies include a means of verification or authentication such as the use of dedicated communications networks, verification code words, or providing call-back verification phone numbers.

Notification for Transportation Accidents: A Transportation Accident is defined in 49 CFR 171.15 and 49 CFR 171.16. If a Transportation Accident involving material in the custody of a VCSNS facility occurs, the appropriate internal and offsite agencies will be notified in accordance with VCSNS procedures.

2. Notification and Mobilization of Emergency Response Personnel

Emergency implementing procedures are established for notification and mobilization of emergency response personnel as follows:

a. Onsite: When an emergency is declared, reclassified, or terminated, an announcement is made (over the plant public address system or by other means) that includes the emergency classification declared and response actions to be taken by site personnel.

At the Unusual Event classification, select ERO augmentation personnel may be notified and requested to remain available to respond. At an Alert classification or higher, ERO augmentation personnel are notified for activation of the TSC, OSC and CERC using the ERO Notification System.

b. Offsite: Notifications are promptly made to offsite EROs as follows:

1) State/County Agencies: A notification shall be made within 15 minutes of:

- The initial emergency classification
- Classification escalation
- The issuance of, or change to a PAR for the general public
- Changes in radiological release status, occurring outside of an event classification or PAR notification, based on an agreement with the state/county authorities

The emergency warning points are simultaneously notified using a dedicated notification system. Commercial telephone lines and/or radios are available as backup notification methods.

Section F: Emergency Communications

This section describes the provisions used for prompt communications among principal EROs, communications with the ERO, and communications with the general public.

1. Communications/Notifications

Dominion Energy has extensive and reliable communication systems installed at VCSNS. Examples of the communications network include systems such as normal and dedicated telephone lines on landlines, fiber-optic voice channels, cell phones, satellite phones, mobile radio units, portable radios, and computer peripherals. This network provides:

- Voice communication through normal telephone, dedicated line, and automatic ring-down between selected facilities, conference call capability, speaker phones, and operator assistance, where required. In addition, there are satellite phone and cell phone capabilities to maintain communication links to the emergency response facilities and offsite authorities.
- Communications between emergency vehicles and appropriate fixed locations, as well as with state mobile units and fixed locations
- Facsimile, computer network, and modem transmission

Figure F-1 depicts the initial notification paths and the organizational titles from the VCSNS Emergency Response Facilities (ERFs) to federal, state, and county EROs, and industry support agencies. The primary and alternate methods of communication, and the NRC communications network, are illustrated on Figures F-2 and F-3.

a. VCSNS maintains the capability to make initial notifications to the designated offsite agencies on a 24-hour-per-day basis. The ORO notification system provides communications to state and county warning points and EOCs from the Control Room, TSC, and the CERC. Backup methods vary by facility and may include facsimile, commercial telephone lines, radios, and internet. State and county warning points are continuously staffed.

b-d. VCSNS has established several communication systems that ensure reliable and timely exchange of information necessary to provide effective command and control over any emergency response (1) between the station and state and county agencies within the EPZs, (2) with federal EROs, (3) between the station, the CERC, and the state and county EOCs, and (4) between ERFs and Field Monitoring Teams. A general description of the systems is as follows:

1) Private Branch Exchange (PBX) Telephone System: The PBX telephone system provides communication capability between telephones located within the VCSNS facilities through direct dialing. The PBX is used to connect the Control Room, TSC and OSC. The PBX telephone system also provides for outside communications through interconnections with the corporate fiber optic telephone communications system and commercial telephone systems.

2) Local Commercial Telephone System: This system provides standard commercial telephone service through the public infrastructure, consisting of central offices and the wire line carrier. The commercial telephone system includes connections to PBX, emergency telephone system, dedicated lines to emergency facilities. The commercial vendor provides primary and secondary power for their lines at their central office to support the "Federal Telephone System".

3) ERDS: As prescribed by 10 CFR 50 Appendix E.VI, ERDS will supply the NRC with selected plant data points on a near real time basis. ERDS is activated by the ERO as soon as possible but not later than one hour after declaration of an Alert, Site Area Emergency, or General Emergency. The selected data points are transmitted via modem or a Virtual Private Network (VPN) to the NRC at approximately 1-minute intervals. The ERO has backup methods available to provide required information to the NRC in the event that ERDS is inoperable during the declared emergency.

4) Field Monitoring Team Communications: A separate radio communications channel has been installed to allow coordinated environmental monitoring and assessment during an emergency. This system consists of the necessary hardware to allow radio communication between the Control Room, CERC, and mobile units in VCSNS vehicles. Commercial cell phones, satellite phones, or other means are available as backup to the primary field team communications system.

5) Satellite Telephones: Satellite telephones are provided to the Control Room, the TSC, and the CERC providing a backup communication link in the event that the landlines are rendered inoperative. These units are equipped with outside antennae to permit the use of the communications device inside the facilities.

6) 800 MHz Radio: This radio system is an 800 MHz Dominion Energy Corporation system that is divided into trunks which are used by corporation subsidiaries. The trunk system at VCSNS is comprised of channels for Maintenance, Operations, Health Physics, Field Monitoring Teams, etc to allow a means of communications between facility personnel and field personnel for routine work and emergency conditions. The system utilizes both base stations and remote units in conjunction with associated cabling, repeaters, and antennas to provide optimum coverage for two-way continuous transmission.

7) Dominion Energy Fiber Optic System: The fiber optic system connects the company's main office in Cayce, South Carolina with the Summer Complex which includes V.C. Summer Nuclear Station, Fairfield Pump Storage Unit, Parr Steam and Hydro Unit and the New Nuclear Deployment Building. Summer Station is the hub for this system. The system contains 72 fiber optic channels.

8) Main & Fuel Handling Page System (Gaitronics): This system of networked phone stations and speakers strategically located throughout the station. Each phone station contains a telephone type receiver-transmitter handset, and channel selector switches. The system is equipped with an alarm encoder for alerting personnel through a series of designated tones. The Fuel Handling Page System is Line 5 on the Main Page System is only available in areas with fuel handling capabilities.

9) Redundant Paging System: This independent system of networked phone stations and speakers strategically located in areas of the station involved in the process of

Engineered Safety Features shutdown. The system contains its own phone stations, power supplies, line balance equipment, and cable system. The system is distinguished by its red color.

10) Maintenance Jack System: The Maintenance Communication system consists of a network of strategically located jack stations. Each jack station has four separately wired receptacles mounted on it, providing four independent communications channels. Several headsets, each consisting of a padded earphone type receiver and a boom-mounted noise-canceling microphone are provided for hands-free operation of the system. Each headset is equipped with a belt clip amplifier and 30 feet of cable.

11) In addition, station communication links exist to ensure appropriate information transfer capabilities during an emergency. The station may also use its video conferencing systems, computer network connections, wireless telephones, or station radios to augment its emergency communications.

e. ERO Notification System: VCSNS uses an automated ERO Notification System that employs an automatic telephone system to rapidly notify members of the ERO. Procedures specify the course of action to be taken if the ERO Notification System fails.

f. NRC Communications (ENS and HPN): Communications with the NRC Operations Center will be performed via the NRC ENS and the HPN circuits or commercial and satellite telephone lines. Information is normally communicated to the NRC in accordance with NL-122, Regulatory Notification and Reporting, before establishing an open ENS and/or HPN line.

Installation and use of these NRC telephones is under the direction of the NRC (see Figure F-3).

Emergency Notification System: Dedicated telephone equipment is in place between the Control Room and the NRC, with an extension of that line in the TSC. A separate line is available in the CERC with the capability of being patched with the station through the NRC. This line is used for NRC event notifications and status updates. Backup power is provided for these lines.

HPN: There also exists a separate dedicated telephone between the NRC, the TSC, and the CERC for conveying health physics information to the NRC as requested or as an open communication line. Backup power is provided for these lines.

2. Medical Communications

Communications are established with the primary medical hospitals and transportation services via commercial telephone that is accessed by VCSNS personnel.

3. Communications Testing

Communications equipment is checked in accordance with Section N.2, Drills, between VCSNS and state and county government facilities are conducted in accordance with Section

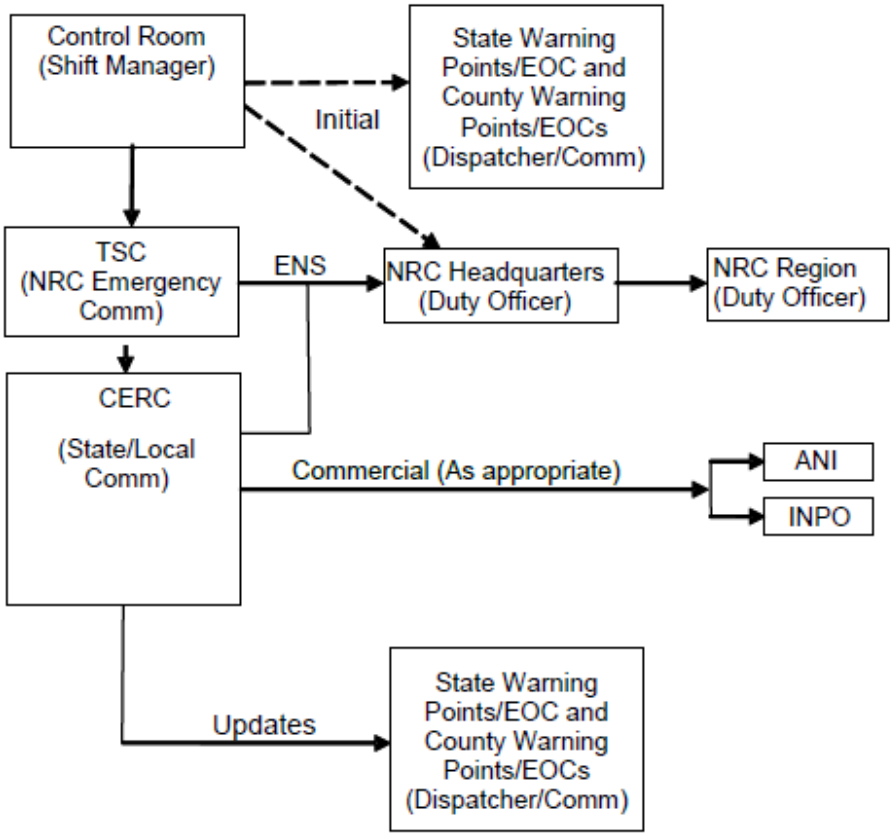
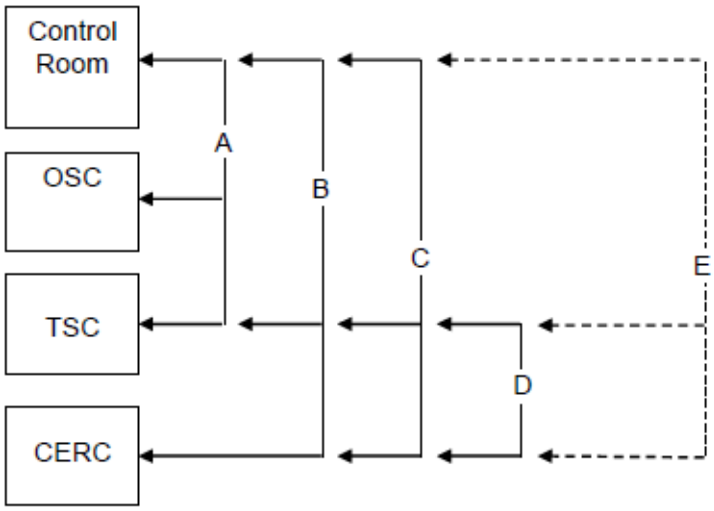


Figure F-1: Notification Scheme



←——Dedicated Phone Link (Independent or Limited PBX)

←- - -Station Telephone Line (PBX or Commercial)

A = Dedicated phone link to dispatch OSC teams between the OSC, TSC, and Control Room.

B = Dedicated phone link for use by the CRM, SEM, and Shift Manager between the Control Room, the TSC, and the CERC.

C = Dedicated phone link for transmission of technical data between the TSC, Control Room, and the CERC.

D = Dedicated phone link to discuss mitigating activities and priorities between the TSC and CERC.

E = Station telephone line that is a communication link between activated facilities.

Figure F-2: ERF Communications Matrix

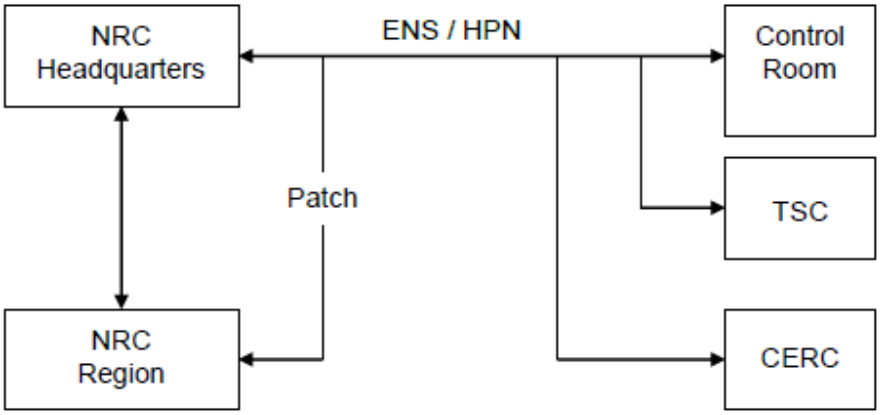


Figure F-3: NRC Communications for Nuclear Response

Section G: Public Education and Information

This section describes the VCSNS public education and information program. It outlines the methods for distributing public information materials on an annual basis and describes how the public is informed in the event of an emergency.

1. Public Information Publication

The state of South Carolina has overall responsibility for maintaining a continuing disaster preparedness public education program. The publication for the VCSNS is updated annually, in coordination with state and county agencies, to address how the general public is notified and what their actions should be in an emergency. Dominion Energy distributes the publication annually to all residents within the 10-mile plume exposure EPZ and to appropriate locations where a transient population may obtain a copy. The public information publication includes the following information:

a. Educational information on radiation

b. Information regarding who to contact for additional information

c. A description of possible protective measures for the public (take shelter, evacuate, and/or ingest a radioprotective drug)

d. A map of major evacuation routes

e. A list of reception centers to coordinate sheltering of evacuees and instructions on how to obtain additional information, especially for the disabled or their caretakers and those without transportation

2. Public Education Materials

Public information publications instruct the public to follow the guidance or information sent via the ANS, which may include going indoors and turning on their radios or televisions when they receive the ANS message. These publications also identify the local radio and television stations to which the public should tune in for information related to the emergency. Information is also provided to the transient population by the ANS, and by means of signs at local business establishments and at the entrances to recreational areas around the VCSNS with instructions to be followed in the event of an emergency at VCSNS. A list of radio and television stations that will transmit emergency information is provided on the signs. Telephone numbers where additional information can be obtained are also provided.

3. **Media Accommodations**

The Dominion Energy Public Affairs Group is notified when an Unusual Event or higher emergency condition exists. They will handle public and media inquiries in the early stages of the event (until the CERC is activated) by distributing background information, news releases, and providing information to Dominion Energy management.

News releases and official company statements to the media will be issued and made from the CERC unless otherwise requested by the State Emergency Management Division.

4. **Coordination of Public Information**

a. The Chief Technical Spokesperson is the primary spokesperson for Dominion Energy. The Chief Technical Spokesperson has direct access to all necessary information (see Section B.5). All information will be coordinated before conducting news briefings.

b. Rumors or misinformation are identified during an emergency by Dominion Energy public information personnel who respond to telephone calls and social media from the public and the media, and monitor media reports.

5. **Media Orientation**

Emergency Preparedness, in conjunction with Dominion Energy Public Affairs Group, offers programs (at least annually) to acquaint news media with the Emergency Plan, information concerning radiation, and points of contact for release of public information in an emergency.

Section H: Emergency Facilities and Equipment

Onsite and offsite facilities are available for emergency assessment, communications, first aid and medical care, and damage control. Of particular importance are the ERFs: the Control Room, TSC, OSC, and CERC.

This section describes the emergency facilities and equipment used by the ERO and outlines the requirements that aid in timely and accurate response actions. It also describes the surveillance programs used to monitor and ensure that these facilities and equipment are maintained in a high degree of constant readiness.

1. Control Room, Technical Support Center, and Operational Support Center

VCSNS has established a TSC and OSC that are activated upon declaration of an Alert or higher classification. Until they are activated, required functions of these facilities are performed by shift personnel and directed from the Control Room. These facilities may be activated at the discretion of the ISEM at an Unusual Event classification.

a. Control Room: The VCSNS reactor and major plant systems are operated from the Control Room. The Control Room is equipped with instrumentation to supply detailed information on the reactor and its major systems. The Control Room is continuously staffed with qualified licensed operators. The Control Room is the first onsite facility to become involved with the response to emergency events. The Control Room will be the designated location for the ISEM. Control Room personnel must evaluate and effect control over the emergency and initiate activities necessary for coping with the emergency until such time that augmented emergency response facilities can be activated. These activities shall include:

- Reactor and plant control
- Initial direction of all plant related operations
- Accident recognition, classification, mitigation, and initial corrective actions
- Alerting of onsite personnel
- Activation of the ERO notification system
- Activation of the ERFs
- Notification of offsite agencies
- Activation of ERDS
- Continuous evaluation of the magnitude and potential consequences of an incident
- Initial dose projections
- Recommendations for immediate protective actions for the public

As other ERFs become activated, they will provide support to the Control Room. Overall command and control of the emergency will transfer to the CERC when it is properly staffed and ready to take over these responsibilities. Throughout all emergencies, the Control Room maintains its emergency activation status until its normal operational status may be resumed or its recovery activities are initiated.

b. Technical Support Center: VCSNS has established a TSC for use during emergency situations by station management, technical, and engineering support personnel. The TSC is provided with communications links that can transmit and receive direct voice and data communications from the Control Room. These communications have alternate pathways that can also be used as needed. The TSC is activated for all emergencies classified as Alert or higher. Activation of this facility for other events is optional. When activated, the TSC functions include:

- Support for the Control Room's emergency response efforts
- Continued evaluation of event and classification of emergencies
- Assessment of the plant status and potential offsite impact
- Coordination of emergency response actions onsite
- Communication with the NRC via ENS
- Activation of the ERDS or ensuring that it is activated

The TSC is the onsite location used to support the Control Room for assessment of plant status and potential offsite impact, and for implementation of emergency actions. The TSC provides technical data and information to the CERC.

Figure B-1b illustrates the staffing and organization of the TSC.

The TSC provides reliable voice communications to the Control Room, OSC, CERC, and NRC. In addition, it provides facsimile transmissions capability and electronic transfer capabilities (see Section F).

The TSC is sized to accommodate a minimum of 25 personnel and their supporting equipment. This includes provisions for NRC representatives.

Personnel in the TSC shall be protected from radiological hazards, including direct radiation and airborne contaminants under accident conditions with similar radiological habitability as Control Room personnel. To ensure adequate radiological protection, periodic radiation surveys of the TSC are conducted. These systems indicate radiation dose rates and airborne radioactivity inside the TSC while in use. In addition, KI is available for use as required. In the event that the TSC becomes uninhabitable, implementing procedures will provide guidance on the transfer of duties and relocation of the staff until such time that the TSC staff is able to fulfill their duties as assigned.

The TSC has access to a complete set of as-built drawings and other records, including general arrangement diagrams, piping and instrument diagrams (P&IDs), and the electrical schematics. The TSC has the capability to record and display vital plant data, in

real time, to be used by knowledgeable individuals responsible for engineering and management support of reactor operations, and for implementation of emergency procedures.

c. Operational Support Center: The OSC is the location to where the unit's support personnel report during an emergency and from which they will be dispatched for assignments or duties in support of emergency operations. The unit's OSC shall be activated whenever the TSC is activated, but need not remain activated at the Alert level if its use is judged unnecessary by the SEM. At the Site Area Emergency and General Emergency levels, the unit's OSC or an alternate OSC shall be activated at all times. Activation for other events is optional. VCSNS disciplines reporting to the OSC include, but are not limited to:

- Operating personnel not assigned to the Control Room
- Radiation Protection/Chemistry personnel
- Maintenance personnel (Mechanical, Electrical, and I&C)

Figure B-1b illustrates the staffing and organization for the OSC

The OSC is equipped with communication links to the Control Room and the TSC (see Section F). A limited inventory of supplies will be kept in the OSC or accessible to the OSC. This inventory will include respirators, protective clothing, flashlights, and portable survey instruments.

Refer to the Unit 1 Annex for additional information regarding the OSC.

2. Corporate Emergency Response Center

The CERC is the consolidated emergency operations facility (EOF) and Joint Information Center (JIC) for VC Summer Nuclear Station, North Anna Power Station and Surry Power Station. The CERC is located at the Innsbrook Technical Center in Glen Allen, Virginia. The facility provides workstations for Federal and State officials who may be assembled at this location. This facility is the designated central location 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. Official company statements to the media are made from a designated location at the CERC utilizing a collaborative platform by the Chief Technical Spokesperson. These company statements are prepared at the CERC.

3. Alternative Facility When Under Threat of Experiencing a Hostile Action

The VC Summer facility located at 113 Ballentine Crossing Lane, Irmo SC serves as the Alternative Facility for emergency response staff if the site is under threat of or experiencing a 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 Alternative Facility, working with the CERC organization, provides capability for engineering assessment activities, including damage control team planning and preparation.

4. Location for Offsite Agency Coordination

The V.C. Summer Nuclear Operations Building (NOB) is the location made available 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.

5. Emergency Operations Centers

EOCs operated by the state and county communities have been established to perform direction and control of emergency response functions, as outlined in their respective plans.

The respective state EOC is capable of continuous (24-hour) operations for a protracted period. These centers contain sufficient communications (radio, telephone, and facsimile) equipment, maps, emergency plans, and status boards to provide the necessary interfaces with other federal, state, county, and station emergency facilities.

The county EOCs serve as command and control headquarters for local emergency response activities as well as a center for the coordination of communications to field units and to the state EOC. These EOCs have the equipment necessary, (such as facsimile machines, telecommunications equipment, radios, photocopiers, wall maps, etc.) to carry out their emergency responsibilities.

6. Activation

VCSNS has put into place plans and procedures to ensure timely activation of its ERFs. The Shift Manager (as ISEM) will initiate a call-out in accordance with the emergency planning procedures. The ERO augmentation process identifies individuals who are capable of fulfilling the specific response functions that are listed in Table B-1a. This table was developed based on the functions listed in NUREG-0654, Revision 2, Table B-1.

Although the response time will vary due to factors such as weather and traffic conditions, a goal of 90 minutes for activation , has been established for the ERO personnel responding to the emergency facilities, following the declaration of an Alert or higher emergency classification.

7. Monitoring Equipment Onsite

The station is equipped with instrumentation for seismic monitoring, radiation monitoring, fire protection, and meteorological monitoring. Instrumentation for the detection or analysis of emergency conditions is maintained in accordance with station Technical Specifications, if applicable or commitments made to the NRC. The actual instrumentation will not be described in detail in this plan. Additional details, if required, of the equipment will appear in the Unit 1 Annex. This equipment includes, but is not limited to, the following:

a. Geophysical Monitors

1) Meteorological Instrumentation: There is a permanent meteorological monitoring stations located near the station for display and recording of wind speed, wind direction, and ambient and differential temperature for use in making offsite dose projections. Meteorological information is presented in the Control Room, TSC, and CERC by means of the plant computer system. This information is remotely interrogated using a computer or other data access terminal.

   With regard to VCSNS's meteorological monitoring program, since the meteorological facilities are not composed of structures, systems, and components that prevent or mitigate the consequences of postulated accidents and are not "safety-related," those aspects of quality assurance germane to providing good meteorological information for a nuclear power station were adopted into the Quality Assurance Program Description (QAPD).

   The NWS, or regional weather forecast providers, may be contacted during severe weather periods. These providers analyze national and local weather in order to provide localized weather forecasts for the VCSNS area, as appropriate.

2) Seismic Monitoring: The seismic monitoring system measures and records the acceleration (earthquake ground motion) of the structure. Earthquakes produce low frequency accelerations which, when detected by the remote sensing devices, are permanently recorded as information which defines the response spectrum. The system remains in a standby condition until an earthquake causes the remote unit(s) to activate the recording circuits and tape transports. It also provides signals for immediate remote indication that specific preset response accelerations have been exceeded.

3) Hydrological Monitors: The design basis flood, probable maximum precipitation, and other improbable, conceivable extremes in hydrologic natural phenomena are well below any design limits for the unit as detailed in their FSAR. Hence, there are no specific, dedicated hydrological monitors.

b. Radiological Monitors and Sampling

1) The RMS: In-plant radiological measurements provide information that may help determine the nature, extent, and source of emergency conditions. The RMS is available to give early warning of a possible emergency and provides for a continuing evaluation of the situation in the Control Room. Radiation monitoring instruments are located at selected areas within the facility to detect, measure, and record radiation levels. In the event the radiation level should increase above a preset level, an alarm is initiated in the Control Room. Certain radiation monitoring instruments also alarm locally in selected areas of the facility. The RMS is divided into 3 subsystems:

   a) Area Radiation Monitors are used for the direct measurement of in-plant exposure rates. The area radiation monitor readings allow in-plant exposure rate determinations to be made remotely without requiring local hand-held meter surveys. This information may be used, initially, to aid in the determination of plant area accessibility. In addition to permanent monitors, portable continuous air monitors measure airborne particulate and airborne iodine activities at various locations within the operating areas.

b) Process radiation monitors are used for the measurement of radioactive noble gas, iodine, and particulate concentrations in plant effluent and other gaseous and fluid streams.

c) The accident, or high range, RMS monitors radiation levels at various locations within the operating area. These are high range instruments used to track radiation levels under accident or post-accident conditions. These instruments include the containment monitors.

The RMS provides the necessary activity or radiation levels required for determining source terms in dose projection procedures. Key RMS data is linked to the plant computer, which allows information to be passed to the TSC and CERC. The isotopic mix, including isotopes such as those in Table 3 of NUREG-0654, is based upon a default accident mix. Refer to the unit-specific FSAR for further detail on the RMS capabilities and design.

2) Liquid and Gaseous Sampling Systems: The process sampling system consists of the normal sampling system and additional sampling panels located throughout the plant. Sampling systems are installed or can be modified to permit reactor coolant and containment atmosphere sampling even under severe accident conditions.

The sampling systems use a number of manual sampling techniques to enable reactor coolant and containment sampling operations over a wide range of plant conditions. They are capable of providing information relative to post-accident plant conditions to allow operator actions to be taken to mitigate and control the course of an accident. Refer to the FSAR for further detail on sampling capabilities.

3) Portable Radiation Monitoring Equipment: Portable radiation survey instruments are available for a wide variety uses such as area, sample, and personnel surveys and continued accident assessment. Instruments are stored throughout the plant and in the emergency facilities.

c. Process Monitors: The Control Room and applicable redundant backup locations are equipped with extensive plant process monitors for use in both normal and emergency conditions. These indications include but are not limited to reactor coolant system pressure and temperature, containment pressure and temperature, liquid levels, flow rates, status or lineup of equipment components. This instrumentation provides the basis for initiation of corrective actions.

1) Plant Monitoring/Information System: A plant monitoring/information system provides the data acquisition and database capability for performing plant monitoring and functions. The system is designed to scan, convert to engineering units, conduct reasonability and alarm limit checks, apply required transformations, store for recall and analysis, and display the reading of transformed data from plant instrumentation. The system scans flows, pressures, temperatures, fluid levels, radiation levels, equipment, and valve status at required frequencies. Scanned variables are quality tagged. The system provides for short and midterm storage of data for online retrieval and fast recall, and long-term storage to appropriate media.

2) Safety Parameter Display System (SPDS): SPDS provides a reliable display of plant parameters from which the safety status of operation may be assessed in the Control

Room, TSC, and CERC for the station. The primary function of the SPDS is to help operating personnel in the Control Room make quick assessments of plant safety status. SPDS and/or other display systems in the TSC and CERC promote the exchange of information between these facilities and the Control Room and assists the emergency organization in the decision making process. It also provides data trending information regarding current and past status of the unit.

d. Fire Detection System: The fire detection system is designed to quickly detect visible or invisible smoke (or other products of combustion) and/or heat in designated areas of the plant. The fire alarm communication systems and subsystems are located at strategic points throughout the plant to warn personnel of a nuclear incident or other emergency conditions. Existing plant alarm systems are sufficiently audible to alert personnel in the event of a fire or need for assembly. These alarm communication systems consist of warning sirens and lights (in high noise areas) and the PA system. Refer to the FSAR for further description of the unit's fire protection system.

8. Monitoring Equipment Offsite

VCSNS has made provisions to acquire data from and have access to the following offsite sources of monitoring and analysis equipment:

a. Geophysical Monitors: In the event that the onsite meteorological tower or monitoring instrumentation becomes inoperative, meteorological data may be obtained directly from the NWS or the internet.

A South Carolina State Network (SCSN) seismometer is located about 3.2 miles east-southeast of the VCSNS Unit 1. This seismometer near Jenkinsville has been operational since November 1973, and is monitored by the University of South Carolina. The SCSN seismometer provides background information relative to seismic activity in the area, including confirmation of earthquake occurrences and magnitudes.

In addition, a central point of contact is the National Earthquake Information Service in Golden, Colorado to obtain information about a seismic event.

The CERC will coordinate hydrology and seismology expertise in the event onsite information becomes unavailable.

b. Radiological Environmental Monitors and Sampling: The state of South Carolina DHEC will conduct an extensive offsite environmental monitoring program to provide data on measurable levels of radiation and radioactive materials in the environs.

VCSNS also maintains an offsite environmental monitoring program as well. The program is described fully in the Offsite Dose Calculation Manual and includes:

- Fixed continuous air samplers
- Routine sampling of river water, milk, and fish
- A fixed thermo luminescent dosimeter (TLD) monitoring network

The TLD program consists of the following elements:

- A near-site ring of dosimeters covering the 16 meteorological sectors
- A 16-sector ring of dosimeters placed in a zone within about 5 miles from the plant
- TLDs placed at each of the normal fixed air sampler locations (typically about 8-15 air samplers)

c. Laboratory Facilities: External facilities for counting and analyzing samples can be provided by the other nuclear stations in the area. These laboratories can act as backup facilities in the event that the station's counting room and laboratory become unusable or the offsite radiological monitoring and environmental sampling operation exceeds the capacity of the station capabilities during an emergency. It is estimated that these laboratories will be able to respond within several hours from initial notification.

Outside analytical assistance may be requested from state and federal agencies, or through contracted vendors. The state maintains a radiological laboratory that provides independent analysis. The DOE, through the Interagency Radiological Assistance Program has access to any national laboratory with DOE contract (i.e., Savannah River Site, Brookhaven, Oak Ridge, Lawrence Livermore, etc.).

A general description of the laboratory capabilities is provided in Section C.3.

9. Offsite Monitoring Equipment Storage

VCSNS maintains a sufficient supply of emergency equipment (such as portable survey, counting, and air sampling instrumentation and other radiological monitoring equipment and supplies) that may be used for environmental monitoring. These supplies meet the initial requirements of two environmental Field Monitoring Teams. During subsequent phases of an emergency, additional equipment is available from other utility or state Field Monitoring Teams, INPO mutual aid, and offsite response organizations.

10. Meteorological Monitoring

The station has installed and maintains a meteorological tower equipped with instrumentation for continuous reading of the wind speed, wind direction, air temperature, and vertical temperature difference (ΔT). Additional capabilities are available to obtain representative current meteorological information from other sources, such as the NWS. A full description of the onsite meteorological capabilities is given in Section 4 of the Unit 1 Annex.

11. OSC Capabilities

The OSC provides an area for coordinating and planning of OSC activities and the staging of personnel. Additional space is available in adjacent offices and locker rooms to accommodate additional personnel as may be required. Alternate locations are available. The onsite storerooms maintain a supply of parts and equipment for normal plant maintenance. These parts, supplies, and equipment are available for damage control use as necessary.

Sufficient radiation protection equipment (i.e., protective clothing, respiratory protection gear, KI, and other health physics equipment and supplies) is stored and maintained near the OSC. Damage control team equipment is available in the maintenance shops which are near the OSC. This equipment may include items such as a camera, portable lighting, and additional portable communications equipment. The areas near the OSC are stocked with an assortment

of first aid and medical treatment equipment and supplies. The OSC maintains reliable voice communications with the Control Room and TSC. For a description of communications equipment, refer to Section F.

12. Facility and Equipment Readiness

Emergency facilities and equipment are inspected and inventoried in accordance with emergency preparedness procedures. These procedures provide information on location and availability of emergency equipment and supplies. An inventory of all emergency equipment and supplies is performed on a quarterly basis and after each use in an actual emergency or drill. During this inventory, radiation monitoring equipment is checked to verify that required calibration period and location are in accordance with the inventory lists. Surveillances include an operational check of instruments and equipment. Equipment, supplies, and parts which have a shelf-life are identified, checked, and replaced as necessary. Sufficient reserves of instruments and equipment are maintained to replace those which are removed from emergency kits or lockers for calibration or repair.

13. Emergency Equipment and Supplies

Below is a list of typical equipment and supplies dedicated for emergency use in the VCSNS ERFs. Refer to applicable emergency equipment checklist for specific equipment and supplies found in the various locations:

Control Room

- Emergency Plan Implementing Procedures
- Drawings of Facility and Plant Site
- Self-Contained Breathing Apparatus
- Portable radios
- Telephone (landlines, cellular, and satellite)
- Dose Assessment Capability
- Potassium Iodide (KI) (provided by the TSC)

Operational Support Center

- Emergency Plan Implementing Procedures
- Telephones and Portable Radios
- Flashlights w/batteries
- Portable Survey Meters
- Dosimetry (TLDs and Self-Reading Dosimeters)
- Portable Air Sampler
- Air Sampler Filter paper
- Silver Zeolite cartridges
- Potassium Iodide (KI)
- 800 MHz Radio

Technical Support Center

- Telephones

- Flashlights w/batteries
- Emergency Plan Implementing Procedures
- Graphs, Overlays, and Maps
- Drawings of Facility and Plant Site
- Potassium Iodide (KI)

Corporate Emergency Response Center

- Dose Assessment Capability
- Telephones
- Emergency Plan Implementing Procedures
- Access to Graphs, Overlays, and Maps
- Access to Drawings of Facility and Plant Site

14. General Use Emergency Equipment

Inventory procedures identify the equipment that comprise the kits used in an emergency situation that are available within each emergency facility.

15. Collection Point for Field Samples

The environmental lab in the Nuclear Learning Center (NLC) has been designated as the central point for the receipt and analysis of radiological field monitoring samples. Sampling and analysis equipment is available for activity determination of these samples. Sufficient field monitoring equipment is maintained at the station for initial sampling. Instrumentation and equipment used for sample activity determination are routinely calibrated to ensure timely availability.

Section I: Accident Assessment

To effectively coordinate and direct all facets of the response to an emergency situation, diligent accident assessment efforts are required throughout the emergency. All four emergency classifications have similar assessment methods; however, each classification requires a greater magnitude of assessment effort dependent upon the plant symptoms and/or initiating event(s).

1. Plant Parameters and Corresponding Emergency Classification

Plant system and effluent parameter values are used in the determination of accident severity and subsequent emergency classification. Environmental and meteorological events are also determining factors in emergency classification. An emergency condition can be the result of just one parameter or condition change, or the combination of several. The specific symptoms, parameter values or events for each level of emergency classification are detailed in the emergency implementing procedures. Specific plant system and effluent parameters that characterize a classifiable event (EALs) are presented in the Unit 1 Annex.

In order to adequately assess the emergency condition, each emergency facility has the necessary equipment and instrumentation installed to make available essential plant information on a continuous basis. Evaluation of plant conditions is accomplished through the monitoring of plant parameters both from indication in the Control Room and within the plant. Some of the more important plant parameters to be monitored in the Control Room are assembled into a single display location, which is entitled the SPDS. The SPDS monitors such parameters relative to the plant design such as: reactor coolant system pressure, reactor or pressurizer water level, containment pressure, reactor power, safety system status, containment radiation level and effluent monitor readings. The instrumentation and equipment capabilities available for each emergency facility are described in Section H.

2. Onsite Accident Assessment Capabilities

The resources available to provide initial and continuing information for accident assessment throughout the course of an event include plant parameter display systems, liquid and gaseous sampling system, Area and Process RMSs, and Accident RMSs (which includes the high range containment radiation monitors). Descriptions of these systems are given in Section H.

3. Source Term Determination

Source term (or core damage) estimations serve several roles within the VCSNS Emergency Preparedness Program. For planning purposes, core damage considerations are used as the bases for several of the EAL ICs and as the threshold for the declaration of a General Emergency (the definition of a General Emergency specifies conditions which involve 'substantial' core degradation or melting as one of the bases for classification).

From an implementation perspective, core damage estimations provide a means of realistically differentiating between the four core states (no damage, clad failure, fuel melt, and vessel melt-through) to:

- Evaluate the status of the fuel barriers and how their status relates to the risks and possible consequences of the accident

4. Effluent Monitor Data and Dose Projection

Dose assessment or projection represents the calculation of an accumulated dose at some time in the future if current or projected conditions continue. During an accident, the plant parameter display system and personal computers will provide the ERO with the timely information required to make decisions. Radiological and meteorological instrumentation readings are used to project dose rates at predetermined distances from the Station, and to determine the integrated dose received. Dose assessment methods used by the ERO to project offsite doses include:

a. Monitored Release Points: This method uses the plant's effluent radiation monitors and system flow rates. Effluent release points are used to directly calculate a release rate. The point of the release determines the way the source term is affected and is adjusted by the dose assessment process.

b. Containment Leakage/Failure: This method uses a variety of containment failures or leak rates in conjunction with available source term estimations to develop a release rate to the environment. A direct vent of containment can be modeled as a failure to isolate.

c. Release Point Samples: This method uses a sample at the release point and an estimated flow rate to develop a release rate at the point of release.

d. Field Monitoring Team Data: This method uses a field survey or sample and the atmospheric model to back calculate a release rate and ratio concentrations of radioactive material at various points up and downwind of plume centerline.

The computer applications used to provide dose calculations are evaluated against the EPA-400 plume exposure PAGs applicable for the early phase of an accident. These evaluations place an emphasis on determining the necessity for offsite PARs. Dose assessment actions will be performed in the following sequence:

First: Onset of a release to one hour post-accident: Shift personnel will rely on a simplified computerized dose model to assist them in developing offsite dose projections using real time data from effluent monitors and site meteorology.

Second: One hour post-accident to event termination: Estimates of offsite doses based on more sophisticated techniques are provided. Dedicated ERO personnel will analyze the offsite consequences of a release using more complex computerized dose modeling. These additional methods are able to analyze more offsite conditions than the simplified quick method, as well account for more specific source term considerations.

5. Meteorological Information

Local meteorological data is available from the onsite meteorological tower. The data available includes wind speed, wind direction, temperature, and vertical temperature difference (ΔT). This data is used by VCSNS, the state, and NRC to provide near real-time predictions of the atmospheric effluent transport and diffusion. Meteorological data from the tower is available in the Control Room, TSC, and CERC. A full description of the onsite meteorological capabilities is given in Section 4 of the Unit 1 Annex.

6. **Unmonitored Release**

Dose projections can be made during a release through use of actual sample data in situations where effluent monitors are either off-scale or inoperative or the release occurs by an unmonitored flow path. In the absence of effluent sample data, a dose projection can be performed simply by specifying the accident category as a default. The selection of a default accident category defines the mix, the total curies, and the release pathway(s). The total number of curies from a default mix for each isotope is used to provide an upper bound for release concentration, and hence, an upper bound for the dose rate and dose to the public.

7. **Field Monitoring**

In addition to the capabilities and resources described in Section H.7.b and H.8, VCSNS maintains the ability to take offsite air samples and to directly measure gamma dose rates in the event of an airborne or liquid release. The capability to take offsite soil, water, and vegetation samples is also provided by either the Field Teams or South Carolina Department of Health and Environmental Control (SCDHEC) Teams.

The environmental monitoring equipment, as described in Section H, includes portable survey, counting, and air sampling instrumentation and other radiological monitoring equipment and supplies to be used by the Field Teams. Samples are taken at predetermined locations as well as those specified both during and after a release. Environmental measurements are used as an aid in the determination and assessment of protective and recovery actions for the general public.

8. **Field Teams**

Field Teams are dispatched by VCSNS to perform a variety of functions during conditions that may involve significant releases of radioactive materials from the plant. Radiological survey and sample data is used to define affected area boundaries, verify or modify dose projections and PARs, and assess the actual magnitude, extent, and significance of a liquid or gaseous release.

In addition to contamination and dose rate measurements, the change out of environmental TLDs can be performed. Other actions may include soil, water, and vegetation sampling.

The initial environmental surveys involve simple-to-perform measurements to quickly confirm or modify the dose projections based on plant parameters. Subsequent environmental monitoring efforts will be aimed at further defining the offsite consequences including instituting an expanded program to enable prompt assessments of any subsequent releases from the plant.

A minimum of two offsite Field Teams are notified and activated at an Alert or higher classification. Teams are composed of two individuals who are assembled at the Nuclear Learning Center to use dedicated survey and sampling equipment. Teams are then dispatched in company vehicles into the surrounding area when a release is ongoing or is expected to occur. Radiological survey and sample data is transmitted to the emergency facilities. SCDHEC support can be used to perform collection, shipment, and analysis of environmental sample media.

Section J: Protective Response

Protective response consists of emergency actions, taken during or after an emergency situation, which are intended to minimize or eliminate hazards to the health and safety of the public and/or station personnel. A range of protective actions has been developed for emergency workers and the general public in the plume exposure pathway EPZ. Additionally, guidelines have been established to aid in choosing protective actions during an emergency that are consistent with federal guidance. VCSNS is responsible for onsite actions, while the responsibility for offsite actions rests with the state, county, and other offsite response agencies.

1. Notification of Onsite Personnel

For all emergency classifications, all personnel within the Owner Controlled Area (OCA) are notified of the initial classification or escalation of an emergency by recognizable alarms, and/or verbal announcements over the plant public address system. Announcements include the emergency classification and response actions to be taken by personnel onsite (such as ERO, non-ERO, contractor personnel, and visitors). Contractors and visitors will be provided information on how to respond in the event of an emergency. Provisions are made to alert personnel in high noise areas and outbuildings within the Protected Area as applicable.

The station has identified locations where people might be expected to be present outside the Protected Area but within the OCA. Accountability of persons within the OCA but outside the Protected Area is not required. However, provisions including public address system announcements, electronic speakers, and security patrols are established for notification of personnel within the OCA any time a site evacuation has been initiated, or as otherwise deemed appropriate.

2. Evacuation Locations

If a site evacuation is required, nonessential personnel are directed to either assemble within designated assembly areas or to immediately evacuate the site. Personnel will be directed to either proceed to their homes or to reassemble at the designated offsite location (Offsite Holding Area). Visitors to the station will assemble with and follow the instructions of their escorts. Nonessential personnel within the Protected Area will normally exit through the normal access point. Personal transportation (if available) will normally be used and established evacuation routes will be followed. Personnel without transportation will be identified and provided transportation as necessary. Personnel needing transportation are instructed to request assistance from personnel evacuating the site. In the event that personal vehicles cannot be utilized for evacuation, the ISEM or SEM will request offsite assistance to support personnel evacuation.

3. Radiological Monitoring of Evacuees

Personnel evacuating the site will be monitored for contamination by the portal monitors as they exit the Protected Area, with portable friskers in assembly areas, or sent to offsite monitoring locations on an as needed basis. If there is no release of radioactive materials within the unit, limited monitoring may be used to speed the evacuation process.

4. Protective Actions for Onsite Personnel

Evacuation is the primary protective action anticipated for onsite personnel not having immediate emergency response assignments. The station has identified a location that serves as an assembly area and offsite location (Offsite Holding Area) for nonessential personnel when they are not instructed to proceed home. The specific locations of these areas are provided in the Unit 1 Annex. Implementing procedures describe equipment, supplies, and general operation of these facilities. Evacuation of nonessential personnel is usually conducted immediately after accountability if a Site Area Emergency or General Emergency has been declared and conditions permit. Evacuation shall commence in accordance with VCSNS procedures as directed by the ISEM/SEM, or his/her designee, unless one of the following conditions exist:

a. Severe weather conditions threaten safe transport

b. A significant radiological hazard would be encountered

c. There is a security threat occurring that would have an adverse impact on the personnel while leaving the site

d. A condition similar to the above in magnitude, which in the opinion of the ISEM/SEM would adversely affect the site personnel

Security forces will be dispatched, when available, to access road(s) to control entry to site facilities.

The initiation of a site evacuation will be reported to the appropriate state and county agencies.

In the event that evacuation is not the best protective action, the onsite personnel will be directed to take other protective actions including: sheltering for extremely inclement weather or during an ongoing radiological release and take immediate cover for security events when evacuation will place personnel in jeopardy.

5. Accountability

The purpose of accountability is to determine the locations of all personnel inside the Protected Area and to muster emergency personnel at prearranged locations. When accountability of onsite personnel is determined to be necessary by the ISEM or the SEM, all personnel within the Protected Area shall be accounted for and the names of missing individuals (if any) are determined within 30 minutes of the declaration. Should missing personnel be identified, search and rescue operations are initiated.

Accountability is usually performed in conjunction with assembly, and is required to be initiated whenever a Site Area Emergency or higher classification is declared. The movement of personnel for the purposes of accountability may be delayed if their health and safety could be in jeopardy, such as severe weather or for security concerns.

If it is determined that the prearranged assembly area is unfit for personnel, the ISEM or the SEM may designate an alternative assembly area and direct personnel using appropriate communication systems that are available.

Once established, accountability within the Protected Area is maintained throughout the course of the event, unless specifically terminated by the SEM.

6. Provisions for Onsite Personnel

VCSNS maintains an inventory of respiratory protection equipment, anti-contamination clothing, and KI that is made available to emergency workers remaining onsite should conditions warrant. During the course of an emergency, protective actions are considered to minimize radiological exposures or contamination problems associated with all onsite personnel. For those who must work within the restricted area of the affected unit, measures that are considered are:

a. Use of Respirators: On-shift and emergency response personnel use respiratory protection in any environment involving exposure to high level gaseous activity or oxygen deficient atmosphere, or where air quality is in doubt. In the presence of airborne particulates, emergency response personnel may be directed by Radiation Protection/Chemistry personnel to use full-face filter-type respirators. The criteria for issuance of respiratory protection are described in Radiation Protection procedures.

b. Use of Protective Clothing: Anti-contamination clothing, located in or near the OSC and station dress out areas is available for use by onsite personnel. The criteria for issuance of protective clothing are described in Radiation Protection procedures.

c. Use of Potassium Iodide (KI): The use of KI may be recommended when a projected dose of 25 Rem committed dose equivalent (CDE) is exceeded for an emergency worker's thyroid. This is the value specified in EPA 400-R-92-001, "Manual of Protective Action Guides and Protective Actions for Nuclear Incidents." The OSC and the TSC maintain a supply of KI. The Radiological Assessment Director has the responsibility for approval of issuing KI to VCSNS onsite emergency workers.

7. Mechanism for Implementing Protective Action Recommendations

Plant conditions, projected dose and dose rates, and/or field monitoring data are evaluated to develop PARs for the purpose of preventing or minimizing exposure to the general public. PARs are provided to the offsite agencies responsible for implementing protective actions for the general public within the 10-mile EPZ. PARs are approved by the Technical Support Manager or SEM in the TSC if the CERC is unavailable.

In an emergency that requires immediate protective actions be taken before activation of the emergency facilities, PARs are provided directly to the state and county 24 hour warning points by the ISEM.

8. Evacuation Time Estimate

An independent Evacuation Time Estimate Study has been performed to provide estimates of the time required to evacuate resident and transient populations surrounding the VCSNS site for various times of the year under favorable and adverse conditions. Evacuation Time Estimate for evacuation of the plume exposure EPZ is referenced in Appendix 5 and detailed in the referenced Evacuation Time Estimate Study.

Protective Action Recommendation Notes:

1. **Rapidly Progressing Severe Accident (RPSA) is defined as:**

   I. This is the first Protective Action Recommendation (PAR) after a General Emergency has been declared,

   AND

   II. There is a loss of the containment barrier per the Emergency Action Levels (EAL),

   AND

   III. Either of the following:
      a. Greater than or equal to Containment High Range Area Radiation Monitor Potential Loss EAL Threshold (20% Clad Damage),

      OR

      b. A significant radiological release in an hour or less (as indicated by meeting the EAL Initiating Conditions for RG1.1, RG1.2, or RG1.3).

2. When the PAR is being made from the Control Room or the TSC, the only impediment considered should be a Hostile Action Based (HAB) event. When the PAR is being made from the CERC, the impediments that will be considered are based on known information that is provided by the State and County liaisons and/or a HAB event.

3. PARs should only be expanded by identified changes in Dose Assessment. PARs are to be expanded to any Protective Action Zone (PAZ) that will exceed Protective Action Guidelines (PAGs - release of gaseous radioactivity resulting in offsite dose greater than 1,000 mrem TEDE or 5,000 mrem thyroid CDE). Expansion of PARs must include previously issued PARs. If an EPA PAG is exceeded or expected to be exceeded beyond 10 miles, then consider the need for PARs beyond 10 miles and discuss possible actions with the counties and/or state.

Section K: Radiological Exposure Control

This section of the plan describes the means for controlling emergency worker radiological exposures during an emergency, as well as the measures that are used by VCSNS to provide necessary assistance to persons injured or exposed to radiation and/or radioactive materials. Exposure guidelines in this section are consistent with EPA Emergency Worker and Lifesaving Activity PAGs described in EPA 400-R-92-001 (EPA-400).

1. Emergency Exposure Guidelines

Being licensed by the NRC, VCSNS maintains personnel exposure control programs in accordance with 10 CFR 20 under normal operating conditions. The SEM is assigned the non-delegable responsibility for authorizing personnel exposure levels under emergency conditions in compliance with EPA-400. In emergency situations, workers may receive exposure under a variety of circumstances in order to ensure the safety and protection of others and of valuable property. These exposures will be justified if the maximum risks or costs to others that are avoided by their actions outweigh the risks to which the workers are subjected. The Emergency Worker Dose Limits are as follows:

Dose Limit (Rem TEDE)	Activity	Condition
0-5	All	Personnel should be kept within normal 10 CFR 20 limits during bona fide emergencies, except as authorized for activities as indicated below
5-10	Protecting valuable property	Lower dose not practicable
10-25	Lifesaving or protection of large populations	Lower dose not practicable
> 25	Lifesaving or protection of large populations	Only on a voluntary basis to persons fully aware of the risks involved

Limit dose to the lens of the eye to 3 times the above values and doses to any other organ (including skin and body extremities) to 10 times the above values.

Whenever possible, the concurrence of the Radiological Assessment Director should be secured before exposing individuals to dose equivalents beyond the EPA-400 lower limit.

2. Emergency Radiation Protection Program

The Radiological Assessment Director is the individual responsible for implementing the radiation protection actions during an emergency. Radiation protection guidelines include the following:

- Volunteers over 45 years of age are considered first for any emergency response action requiring exposure greater than normal limits. Routine dose limits shall not be extended to emergency dose limits for declared pregnant individuals. As in the case of normal occupational exposure, doses received under emergency conditions should be maintained as low as reasonably achievable.

- Persons undertaking any emergency operation in which the dose will exceed 25 Rem TEDE should do so only on a voluntary basis and with full awareness of the risks involved including the numerical levels of dose at which acute effects of radiation will be incurred and numerical estimates of the risk of delayed effects.

- In the context of the emergency limits, exposure of workers that is incurred for the protection of large populations may be considered justified for situations in which the collective dose avoided by the emergency operation is significantly larger than that incurred by the workers involved.

- Exposure accountability is maintained and proper personnel radiological monitoring equipment is provided for all personnel during emergency conditions.

- Access to high radiation areas is only permitted with prior approval of the applicable Radiological Assessment Director. Personnel are not allowed to enter known or potential high radiation areas unless their exposure has been properly evaluated.

- Periodic habitability surveys of emergency facilities are performed during an emergency. If the facility is determined to be uninhabitable, the facility is evacuated in order to prevent or minimize exposure to radiation and radioactive materials. Alternate assembly areas are established, as necessary, to relocate and monitor evacuated personnel.

3. **Personnel Monitoring**

   a. Emergency workers will receive TLD badges and personal self-reading dosimeters capable of measuring expected exposures on a real time basis. The capability exists for the emergency processing of TLDs on a 24-hour per day basis, if necessary.

   b. Emergency worker dose records are maintained by Radiation Protection/Chemistry (as appropriate) in accordance with the emergency and radiological protection procedures. Emergency workers are instructed to read their dosimeters frequently. TLDs may be processed with increased periodicity.

4. **Non-V. C. Summer Personnel Exposure Authorization**

   The responsibility for authorizing non-VCSNS emergency workers (i.e., state and local agency emergency workers) to receive exposures in excess of the EPA-400 General Public PAGs rests with the state and county organizations, except when such emergency workers are onsite. Authorization of exposures in excess of EPA General Public PAGs, in this latter instance, rests with the SEM.

5. **Contamination and Decontamination**

   During an emergency, the SEM is responsible for preventing or minimizing personnel exposure to radioactive materials deposited on the ground or other surfaces inside the Owner Controlled Area. Special consideration should be given to setting up contamination control arrangements for personnel entering the OSC after completion of assigned activities. The SEM is also responsible for preventing or minimizing personnel exposure to radioactive materials deposited on the ground or other surfaces beyond the Protected Area to the Owner Controlled Area. The Technical Support Manager is responsible for the VCSNS Field Team members that are assigned to track and sample the release plume.

a. During emergency conditions, normal plant contamination control criteria will be adhered to as much as possible. However, these limits may be modified by the RAD in accordance with existing radiation protection procedures, should conditions warrant.

b. Contamination Control Means: Personnel found to be contaminated will normally be attended to at decontamination areas located onsite. The decontamination facility at VC Summer Unit 1 is located at the Radiation Control Area Control Point, elevation 412' of the Control Building. The decontamination facility consists of a men's and women's shower, toilet, locker room, and change areas. Temporary decontamination areas can also be set up inside at various locations. Decontamination showers and supplies are provided onsite with additional personnel decontamination equipment and capabilities. Decontamination supplies will include soaps, shampoo, mild detergents, 3% Hydrogen Peroxide solutions, plastic bags, plastic suits, cotton swabs, oral hygiene products, and Saline solutions. Shower and sink drains in the Radiation Controlled Area are routed to the miscellaneous waste processing system where the liquid is processed and monitored prior to discharge. Potentially contaminated emergency vehicles will be surveyed before they are allowed to leave the plant or offsite assembly area. If the survey area is not suitable for monitoring and decontamination due to radiological or other concerns, vehicles will be surveyed at an alternate location.

6. **Contamination Control Measures**

Controls are established and maintained 24 hours per day to contain the spread of loose surface radioactive contamination.

a. Contaminated Areas are isolated as restricted areas with appropriate radiological protection and access control. Personnel leaving Contaminated Areas are monitored to ensure that they and their clothing are not contaminated. If contamination above acceptable levels is found, they will be decontaminated in accordance with plant procedures. If normal decontamination procedures do not reduce personnel contamination to acceptable levels, the case will be referred to a competent medical authority. Supplies, instruments, and equipment that are in Contaminated Areas or have been brought into Contaminated Areas will be monitored before removal. If personnel are found to be contaminated, they will be decontaminated using normal plant decontamination techniques and facilities. Contaminated materials will be disposed of as radwaste. Contaminated vehicles will be decontaminated before being released. An ambulance responding and transporting injured contaminated personnel will be monitored and decontaminated before departing the medical facility by VCSNS personnel or sent to the county emergency worker decon facility, during a declared emergency.

b. Measures will be taken to control onsite access to potentially contaminated potable water and food supplies. Under emergency conditions, when uncontrolled releases of activity have occurred, eating, drinking, and chewing are prohibited in all onsite VCSNS ERFs until such time as habitability surveys indicate that such activities are permissible.

c. Restricted areas and contaminated items will be returned to normal use when contamination levels have been returned to acceptable levels. Contamination control criteria for returning areas and items to normal use are contained in the plant procedures.

Section L: Medical and Public Health Support

This section describes the arrangements for medical services for contaminated injured individuals at the station.

1. Offsite Hospital and Medical Service Facilities

Arrangements, by letter of agreement, are maintained by Dominion Energy with Prisma Health Richland Hospital for receiving and treating contaminated or exposed persons with injuries requiring immediate medical care. Hospital personnel have been trained and the hospital is equipped to handle contaminated or radiation injured individuals. Specifically, training of medical support personnel at Prisma Richland Hospital includes basic training on the nature of radiological emergencies, diagnosis and treatment, and follow-up medical care. Station personnel are available to assist medical personnel with decontamination, radiation exposure, and contamination control. Materials that are identified as contaminated are collected by Radiation Protection/Chemistry personnel and returned to VCSNS for decontamination or disposal.

Because of the specialized nature of the diagnosis and treatment of radiation injuries, VCSNS maintains an agreement with the REAC/TS in Oak Ridge, Tennessee. REAC/TS will provide a backup response capability for patients with serious contamination/ingestion or who have been excessively exposed to radiation. REAC/TS has a radiological emergency response team of physicians, nurses, Health Physicists, and necessary support personnel on 24-hour call to provide consultative or direct medical or radiological assistance. Specifically, the REAC/TS team has expertise and is equipped to conduct: medical and radiological triage; decontamination procedures and therapies for external contamination and internally deposited radionuclides, including chelation therapy; diagnostic and prognostic assessments or radiation-induced injuries; and radiation dose estimates by methods that include cytogenetic analysis, bioassay, and in vivo counting.

Victims of accidents or medical emergencies who are determined as not being contaminated or excessively exposed to radiation may be treated at the closest appropriate medical facility as determined by the responding Emergency Medical Services Crew Chief.

2. Medical Transportation

In situations when transportation of a victim(s) to a hospital is required, arrangements are made by the station for prompt ambulance transport of persons with injuries and/or illness involving radioactivity to Prisma Richland Hospital. Such service is available on a 24-hour per day basis and is confirmed by letter of agreement with the Fairfield County Emergency Medical Services (FCEMS). The FCEMS is located approximately two miles from VCSNS and is staffed with Emergency Medical Technicians, Paramedics, and additional qualified personnel capable of handling medical emergency situations. VCSNS maintains a communications link with the FCEMS by means of ORO notification system, radio and normal telephone lines. VCSNS security personnel will expedite and escort the responding ambulance(s) to the victim's location.

In the event that a helicopter is requested by the response personnel to transport victim(s) to appropriate medical care, a primary helicopter landing area is available onsite for use. Alternate landing areas are determined by response personnel and marked to assist the landing of the helicopter.

If additional assistance is required for the transportation of accident victims, the Lexington County Emergency Medical Services (LCEMS) will respond. This support would most likely be used in a case where multiple casualty victims would require transportation to offsite medical facilities. LCEMS is located approximately 15 miles from VCSNS and is staffed with Emergency Medical Technicians and Paramedics. Should the need arise, assistance from the LCEMS and other response organizations would be requested by FCEMS or the Incident Commander.

Radiation monitoring services shall be provided by VCSNS Radiation Protection/Chemistry personnel whenever it becomes necessary to use the ambulance service for the transportation of contaminated persons.

A qualified Radiation Protection/Chemistry person shall accompany the ambulance to the hospital upon the determination that the injured or ill person is contaminated or if the determination cannot be made that the individual is free of surface contamination. Additional Radiation Protection/Chemistry personnel may be contacted and dispatched to Prisma Richland Hospital to assist in the monitoring and decontamination of the injured victim(s), the hospital facilities, and the ambulance and response personnel as needed.

Section M: Reentry and Recovery Planning

This section describes the measures to be taken for reentry into the areas of the Station which have been evacuated as a result of an accident. It also outlines the VCSNS Recovery Organization and its concepts of operation.

1. Reentry and Recovery

a. Evaluating Reentry Conditions
During an emergency, immediate actions are directed toward limiting the consequences of the accident to afford maximum protection to station personnel and the general public. Once corrective measures have been taken and effective control of the plant has been reestablished, a more methodical approach to reentry is taken. This Emergency Plan divides reentry into two separate categories:

- Reentry *during the emergency phase of an accident* is performed to save a life, control a release of radioactive material, prevent further damage to plant equipment or restore plant equipment. If necessary, this category of reentry may be performed using emergency exposure limits. Briefings, rather than written radiation protection procedures, may be used when making these entries.

  All reentry activities conducted during the emergency are authorized by the SEM and coordinated by the OSC Director and the Radiological Assessment Director.

- Reentry *during the recovery phase of an accident* is performed using normal exposure limits. Either normal procedures or procedures that consider existing as well as potential conditions inside affected areas are developed specifically for each reentry.

  Reentry activities during the recovery phase are authorized by the Recovery Manager and coordinated by the recovery organization managers in charge of personnel making the reentry.

The following items are considered when planning for any reentry:

- Review of available radiation surveillance data to determine plant areas potentially affected by radiation and/or contamination
- Review of radiation exposure history of personnel required to participate in the accident mitigation or recovery operations
- Determination of the need for additional personnel and the sources of these additional personnel
- Review of adequacy of radiation survey instrumentation and equipment (types, ranges number, calibration, etc.)
- Review of nonradiological hazards and required protective measures (e.g., fire, electrical, atmosphere, Hazmat)

- Preplanning of activities and briefings for the reentry team that include the following:
  - Personnel knowledge requirements
  - Methods and procedures that will be employed during the entry
  - Specific tasks to be performed
  - Anticipated radiation and contamination levels as well as "turn back" limits
  - Radiation survey equipment and types and ranges of dosimetry required
  - Shielding requirements and availability
  - Appropriate communications
  - Personal protective equipment (PPE) requirements
  - Access control procedures
  - Decontamination requirements
  - Debriefing requirements
  - Respiratory protection
- A review of security controls to prevent unauthorized or unintentional entry into hazardous or secured areas.

b. Evaluating Entry into Recovery

The Recovery Phase is that period when major repairs are being performed to return the plant to an acceptable condition and the possibility of the emergency condition degrading no longer exists. Once the plant has been stabilized, contained, and controlled, the Recovery Phase may be entered. It is the responsibility of the SEM to declare emergency phase terminated and entry into Recovery after obtaining concurrence from the CRM and consulting with offsite authorities if a Site Area Emergency or General Emergency has been declared.

Establishment of Recovery can be conducted from any emergency classification level. However, it is possible that the lower classifications of Unusual Event and Alert will conclude with the overall event being terminated. There may be cases where certain EAL ICs remain exceeded, but the station is under control and no further danger of degradation exists. In such a case, it may be appropriate to enter Recovery. Site Area Emergency and General Emergency classifications will require a Recovery Phase to be established before event termination. VCSNS may consult with/notify the cognizant governmental agencies before declaring Recovery or event termination during an Unusual Event or Alert. When in a Site Area Emergency or a General Emergency, VCSNS will consult and notify the cognizant governmental agencies before declaring Recovery or event termination.

Termination/Recovery considerations are contained in the implementing procedures to provide guidance for evaluating the risk of entering Recovery without alleviating the intent of the Initiating Condition. The purpose of Recovery is to provide the necessary personnel to affect the long-term activities and to return the plant to an acceptable condition.

- Discussions have been held with federal, state, and county agencies and agreement has been reached to terminate the emergency for a Site Area Emergency or a General Emergency
- At an Alert or higher classification, the ERO is in place and emergency facilities are activated
- All contaminated injured personnel have been treated and/or transported to a medical care facility
- Offsite conditions do not unreasonably limit access of outside support to the station and qualified personnel and support services are available

It is not necessary that all conditions listed above be met; however, all items must be considered before entering the recovery phase. For example, it is possible after a severe accident that some conditions remain that exceed an Emergency Action Level, but entry into the Recovery Phase is appropriate.

2. Recovery Organization

Once plant conditions have been stabilized and the Recovery Phase has been initiated, the TSM assumes control and direction of the recovery operation with the authority and responsibilities for implementing and administering the recovery plan and organization. These types of alterations should be discussed with the NRC before they are implemented.

- For events of a minor nature, (i.e., for Unusual Event classifications), the normal on shift organization is normally adequate to perform necessary recovery actions.
- For events where damage to the plant has been significant, but no offsite releases have occurred and/or protective actions were not performed, (i.e., for Alert classifications) the station ERO, or portions thereof, should be adequate to perform the recovery tasks before returning to the normal station organization.
- For events involving major damage to systems required to maintain safe shutdown of the plant and/or offsite radioactive releases have occurred, (i.e., for Site Area Emergency or General Emergency classifications) the station recovery organization is put in place.

The recovery process will be managed by a special, designated organization composed of Dominion personnel. The specific members of the station recovery organization are selected based on the sequence of events that preceded the recovery activities as well as the requirements of the recovery phase. The recovery organization is described in Figure M-1.

The recovery organization is established on an initial recovery plan developed at the end of the emergency phase or just after entry into the Recovery Phase. Consideration is given to recovery activity needs and use of the normal station organizations. Individual recovery supervisors may be designated in any or all of the following areas:

- Training
- Radiation Protection/Chemistry
- Technical/Engineering Support

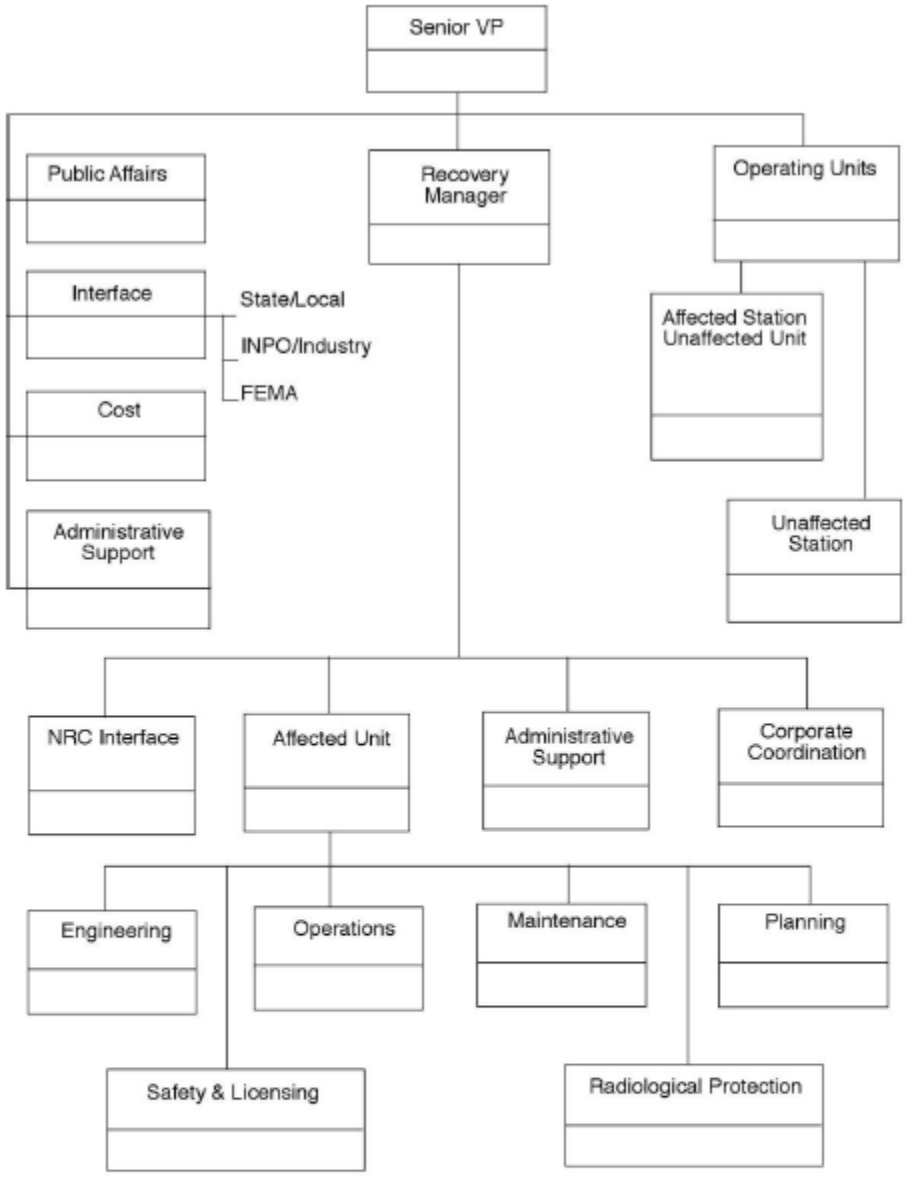


Figure M-1: Example Recovery Organization

2. Drills

In addition to the exercises described above, VCSNS conducts drills for the purpose of testing, developing, and maintaining the proficiency of emergency responders. Drills are scheduled on the Emergency Preparedness annual events plan, which contains provisions for the following drills:

a. Training Drills

Training Drills may be conducted before a Biennial Exercise where FEMA evaluation of state and local performance is expected. Training Drills may be conducted before Off-Year Exercises that only involve VCSNS. The Training Drill is a training and experience tool for the participants to sharpen awareness and practice skills necessary to accomplish specific Emergency Plan duties and responsibilities. It also provides a "dry run" for experience dealing with multiple Controllers, Observers and Evaluators that may be in excess of those provided in training drills.

b. Communication Drills

- Monthly: The primary and alternate methods to notify the state and local government warning points and EOCs within the plume exposure pathway EPZ are demonstrated. Also, the capability to notify the NRC is demonstrated using the ENS.

- Quarterly: The capability to notify the NRC Region and federal EROs as listed in the ERO Communications Directory are demonstrated from the CERC. Also, computer and critical communications equipment shall be functionally tested.

- Annually: The emergency communications systems outlined in Section F are fully tested. This includes (1) communications between the plant and the state and local EOCs and Field Teams, (2) communications between the Control Room, the TSC, and the CERC (3) communications between the TSC and the OSC.

Each of these drills includes provisions to ensure that all participants in the test are able to understand the content of the messages.

c. Medical Emergency Drills: A medical emergency drill, involving a simulated contaminated individual and containing provisions for participation by local support services organizations (i.e., ambulance and support hospital) is conducted annually. The offsite portions of the medical drill may be performed as part of the required biennial exercise.

d. Radiological Monitoring Drills: Plant environs and radiological monitoring drills (onsite and offsite) are conducted annually. These drills include collection and analysis of all sample media (such as, water, vegetation, soil, and air), and provisions for communications and record keeping. Collection of milk is demonstrated in accordance with the ingestion pathway exercises.

e. Health Physics Drills: Health Physics drills involving a response to, and analysis of, simulated elevated airborne and liquid samples and direct radiation measurements within the plant are conducted semiannually in the Protected Area.

f. Augmentation Drills: Augmentation drills serve to demonstrate the capability of the process to augment the on-shift staff with a TSC, OSC, and CERC after declaration of an emergency. These drills are conducted using the following methods:

- Semiannually, an unannounced off-hours ERO augmentation drill where no actual travel is required.
- At least once per exercise cycle, an off-hours unannounced activation of the ERO Notification System with actual response to the emergency facilities is conducted to support the response to the unit.

g. Accountability Drills: Accountability drills are conducted annually for the Protected Area. The drill includes ascertaining the names of all missing individuals within the Protected Area and accounting for all individuals within the Protected Area continuously throughout the event.

3. **Conduct of Drills and Exercises**

Advance knowledge of the scenario will be kept to a minimum to allow "free-play" decision making and to ensure realistic participation by those involved. Before the drill or exercise, a package will be distributed to the Controllers and Evaluators that will include the scenario, a list of performance objectives, and a description of the expected responses.

Drills will be provided to ensure that each member of the ERO will have an opportunity to participate in a drill in their assigned facility at least once in a two-year period.

For each emergency preparedness exercise or drill conducted, a scenario package is developed that includes at least the following:

a. The basic objective(s) of the drill or exercise and the appropriate evaluation criteria

b. The date(s), time period, place(s), and participating organizations

c. The simulated events

d. A list of anticipated Drill/Exercise Performance (DEP) opportunities including classification, notifications and PARs

e. A time schedule of real and simulated initiating events

f. A narrative summary describing the conduct of the scenario to include such things as simulated casualties, offsite fire department assistance, rescue of personnel, use of protective clothing, deployment of radiological monitoring teams, and public information activities.

g. A list of qualified participants

h. Instructions for the conduct of the drill/exercise for the controller organization

Prior approval by the appropriate Station Management is obtained for all drills and exercises conducted in support of the Emergency Preparedness Program.

3. Emergency Response Organization Training Program

ERO personnel who are responsible for implementing this plan receive specialized training. The training program for emergency response personnel is developed based on the requirements of 10 CFR 50, Appendix E and position specific responsibilities as defined in this document.

On-shift emergency response personnel perform emergency response activities as an extension of their normal duties and are trained annually as part of their duty specific training. Additional Emergency Preparedness information is provided as part of the Plant Access Training (PAT).

New ERO personnel receive an initial overview course that familiarizes them with the Emergency Plan by providing basic information in the following areas as well as specific information as delineated in the sections below:

- Planning Basis
- Emergency Classifications
- ERO and Responsibilities
- Call-out of ERO
- ERFs
- Communications Protocol
- Offsite Organizations

Emergency response personnel in the following categories receive knowledge and/or performance based training initially and retraining thereafter on an annual basis:

a. Directors, Managers, and selected Coordinators within the Station ERO: Personnel identified by the ERO Communications Directory as Directors, Managers, and selected Coordinators for the Station ERO receive training appropriate to their position in accordance with the approved ERO training program. These personnel receive specialized training in the areas of:

   - Notifications
   - Emergency Classifications
   - Protective Action Recommendations
   - Emergency Action Levels
   - Emergency Exposure Control

   The TSMs and SEMs along with selected managers, coordinators, and ISEMs receive training in accordance with the approved ERO training program. Accident assessment

sufficient to classify an event and to mitigate the consequences of an event is also covered in ISEM/SEM training.

b. Personnel Responsible for Accident Assessment: The skills and knowledge required to perform plant stabilization and mitigation are a normal function of operations-specific positions, as identified in Section B of this Plan. Power changes and planned and unplanned reactor shutdowns are handled on a normal operation basis. Subsequent plant stabilization and restoration is pursued using normal operating procedures. Licensed operators receive routine classroom and simulator training to ensure proficiency in this area.

1) Active Senior Licensed Control Room Personnel shall have training conducted in accordance with the approved ERO training program such that proficiency is maintained on the topics listed below. These subjects shall be covered as a minimum on an annual basis.

- Event Classification
- Protective Action Recommendations
- Radioactive Release Rate Determination
- Notification form completion and use of ORO notification system
- Federal, state, and county notification procedures as appropriate
- Site-specific procedures for activating the onsite and offsite ERO

2) Core Damage Assessment Personnel: During an emergency when core/cladding damage is suspected, a specialized group of trained individuals perform core damage assessment. At a minimum, personnel responsible for core damage assessment receive classroom and hands-on training in the following areas:

- Available instrumentation and equipment
- Isotopic assessment and interpretation
- Core damage assessment methodology and/or proceduralized assessment methods

c. Field Teams and Radiological Analysis Personnel

1) Field Radiological Monitoring: Field radiological monitoring is performed by trained individuals who provide samples and direct readings for dose assessment calculations and dose projection comparisons.

Personnel identified as members of Field Teams receive training in accordance with the approved training program. Field Team members receive classroom and hands-on training in the following areas:

- Equipment and equipment checks
- Communications
- Plume tracking techniques

2) Personnel Monitoring: Personnel monitoring is performed by trained individuals who monitor station personnel and their vehicles for contamination during an emergency. Radiation Protection/Chemistry personnel receive classroom and hands-on training in the following areas:

- Personnel Monitoring Equipment and Techniques
- Decontamination Techniques for Personnel
- Decontamination Techniques for Vehicles

3) Dose Assessment: Dose assessment training includes the skills and knowledge necessary for calculation and interpretation of an offsite release and its impact on the environment under varying meteorological conditions. Individuals responsible for performing dose assessment are trained in the following areas:

- Computerized Dose Assessment
- Protective Action Recommendations
- Field Monitoring Team Interface
- PAGs associated with offsite plume exposure doses
- Basic Meteorology

e. Repair and Damage Control Teams: Operations, Maintenance, and Radiation Protection/Chemistry personnel are trained as part of their normal job-specific duties to respond to both normal and abnormal plant operations.

Maintenance personnel are trained to troubleshoot and repair damaged or malfunctioning electrical, mechanical, or instrumentation systems as appropriate to their job classification.

Radiation Protection/Chemistry personnel are trained to assess the radiological hazards associated with equipment repair and instruct personnel as to the appropriate protective clothing requirements, respiratory protection requirements, stay times, and other protective actions specific to the conditions present.

At least 50% of personnel from the organizations below, who are potential responders to the OSC as Damage Control Team members, are required to be qualified in the use of respiratory protection equipment. This includes in-plant supervision and craft/technical personnel for the following organizations:

- Operations
- Radiation Protection/Chemistry
- Maintenance (Mechanical, Electrical, and I&C)

f. Local Support Service Personnel: Local support service personnel providing assistance during an emergency are invited to receive training as outlined in Parts 1.a and 1.b of this section.

g. Medical Support Personnel: Onsite medical personnel receive specialized training in the handling of contaminated victims and hospital interface. Offsite ambulance and hospital

personnel are offered annual training in accordance with a program provided by Emergency Preparedness.

h. Communications Personnel: ERO personnel receive training on communications protocol as a part of the initial Emergency Response Overview Course. Personnel using specialized communications equipment that is not part of their normal daily function receive initial and requalification training on the equipment. Personnel involved in notifications to offsite agencies receive specialized training in the notification process.

4. General, Initial, and Annual Training Program Maintenance

a. Station departments and Emergency Preparedness share the responsibility for ensuring that the ERO receives all necessary training and retraining. In order to carry this out, responsibilities are assigned as follows:

Station responsibilities for Station ERO personnel:

- Station management shall ensure the attendance of onsite personnel for training, including required Emergency Planning courses.
- The station shall conduct onsite emergency personnel initial and retraining for station ERO personnel using approved lesson plans.
- The Station Training Department shall provide those shift personnel included in a continuing training program an annual review of the following items as a minimum:
  - Assembly Areas
  - ERF assignment
  - Potential Hazards (radiological and nonradiological)
  - Anticipated actions including assembly requirements, protective equipment requirements (clothing, masks, SCBA, etc.), the use of KI, emergency exposure limits, and accountability requirements.

b. Initial and Requalification ERO Training: The proficiency of emergency response personnel (as defined in 10 CFR 50 Appendix E) is ensured by the following means:

- Assigning individuals to emergency duties that are similar to those performed as a part of their regular work assignment or experience
- Initial training and annual retraining on applicable generic and site-specific portions of the emergency plan and the corresponding implementing procedures. Individuals not demonstrating the required level of knowledge in initial or retraining classes receive additional training on the areas requiring improvement. Annual retraining is conducted on a calendar year basis
- Training on Emergency Plan changes shall be completed within 120 days of implementation of the change

Section 2: DELETED

Section 4: Emergency Facilities and Equipment

4.1 Unit-Specific Emergency Facilities

A. Control Room

The Control Room, located in the Control Building is designed to be habitable under accident conditions and shall serve as the onsite Emergency Control Center. Emergency lighting, power, air filtration, ventilation system and shielded walls enables the operators to remain in the Control Room to ensure that the reactor will remain in a safe condition. In addition, the operators shall be able to evaluate situational conditions and relay pertinent information and data to the appropriate onsite and offsite agencies and organizations during all emergencies. To ensure that shift personnel and other personnel assembled at the location can remain self-sufficient, emergency equipment and supplies shall be stored in, or near, the Control Room. The exact location and the type and quantity of emergency equipment and supplies available are specified in VCS-EPMP-0103, Emergency Equipment Checklist.

B. Technical Support Center (TSC)

The TSC, located in the Control Building is designed to be habitable under accident conditions and shall serve as the onsite Emergency Control Center after relieving the Control Room of command and control. Emergency lighting, power, air filtration, ventilation system and shielded walls enable the responders to remain in the TSC. In addition, the responders shall be able to evaluate situational conditions and relay pertinent information and data to the appropriate onsite and offsite agencies and organizations during all emergencies. This facility is located inside the Unit 1 Protected Area and provides the ability to respond and activate the facility in a timely fashion.

C. Operational Support Center (OSC)

The OSC is located on the first floor in the Auxiliary Service Building within the Protected Area and is separate from the Control Room. The OSC is the location from which survey, operations, and repair teams are dispatched into areas of the plant. It is the staging area for individuals who may be assigned to, survey, repair, and corrective action teams.

The OSC Director is responsible for managing the activities in the OSC including:

- Ongoing accountability of anyone dispatched from the OSC. The Control Room Supervisor or the Security Shift Manager track individuals who are assigned to the Control Room or the Security Force respectively.
- Radiological exposure control for the individuals within the OSC
- Mobilizing individuals on the emergency roster needed to fill the positions in the OSC and other support personnel such as materials and warehouse personnel

The OSC is activated within 90 minutes after the declaration of an Alert, SAE, or GE.

Equipment and supplies for the OSC include protective clothing, dosimetry, and sampling and survey equipment to be used by the OSC teams.

Radiological exposure controls for the OSC include monitoring conditions and relocation if necessary.

Tools and parts available for normal plant maintenance are also available for damage control operations during emergencies.

In the event the OSC becomes uninhabitable, Emergency Plan Implementing Procedures provide details on how to relocate OSC personnel.

4.2 Assessment Resources

A. Onsite Meteorological Monitoring Instrumentation

1. Redundant wind and temperature sensors are installed on a 61-meter self-supporting tower for Unit 1. Instrument elevators and 8-foot instrument booms are installed to raise and lower the sensors for easier maintenance. Measurements from these instruments provide indications to various points on the site, including recorders within the Control Room. A dew point sensor is installed near the base of the tower. A total precipitation sensor is installed on an individual pedestal near the tower. Data processing and recording equipment are located at the base of the tower. The tower is located about 1563 feet west of the Reactor Building at elevation 436 feet above MSL. The Reactor Building is at elevation 436 feet above MSL, and Monticello Reservoir is filled to elevation 425 feet above MSL. Elevations in the site vicinity range from below 230 feet on the Broad River to over 600 feet near Little Mountain. The tower-mounted sensors are as follows:

   a. At 61 meters above ground level, the upper wind speed and wind direction sensors, as well as the upper temperature sensors for the 10-61 meter differential temperature measurements are mounted on the 8-foot instrument boom.

   b. At 40 meters above ground level, the upper temperature sensors for the 10-40 meter delta temperature measurement is mounted on the 8-foot instrument boom.

   c. At 10 meters above ground level, the lower wind speed and wind direction sensors, as well as the lower temperature sensors for the 10-61 and 10-40 meter differential temperature measurements and ambient temperature readings are mounted on the 8-foot boom. Data from the meteorological measurements system are provided to an onsite data capture computer (which is capable of various data manipulations). Meteorological data necessary for the estimation of offsite dose projections is available via terminals to personnel in the Control Room, TSC, and CERC. When the onsite meteorological tower is not available for the estimation of offsite dose projections, meteorological data from the NWS in Columbia, South Carolina, will be used.

B. Onsite Radiation Monitoring Equipment

The onsite radiation monitoring capability includes an installed process, effluent, and area RMS; portable survey instrumentation; counting equipment for radiochemical analysis; and a personnel dosimetry program to record integrated exposure. Some onsite equipment is particularly valuable for accident situations and are listed in Table 4-1, Radiation Monitoring System Description.

Appendix 4 - Abbreviations, Acronyms, and Definitions

Accident (Incident or Event)	An unintentional or unexpected event resulting in radiological exposure, physical injury, or physical damage to property.
ALARA	(As Low As Reasonably Achievable) A radiation protection philosophy requiring that personnel exposure to radiation and radioactive material be kept not only within regulatory limits but be maintained As Low As Reasonably Achievable in the light of current technology with appropriate consideration for economic and social factors and for the benefits to be expected. ALARA applies not only to minimizing occupational exposure to radiation workers, but also to limiting the radioactivity of plant effluent and minimizing the potential for exposure to the public.
Annual (Annually)	At least once per 365 days ± 90 days, unless specifically identified as "based on a calendar year".
ANI	American Nuclear Insurers
ANS	Alert and Notification System
CDE	(Committed Dose Equivalent) Total Dose from internally deposited radionuclide over subsequent 50 year period to a specific organ.
CEDE	(Committed Effective Dose Equivalent) Sum of risk-weighted Committed Dose Equivalents to organs.
Certified	Official approval by written letter from the EP Manager verifying the item(s) to be accurate and up to date.
CET	Core Exit Thermocouple
CFR	(Code of Federal Regulations) The Code of Federal Regulations is a codification of the general and permanent rules published in the Federal Register by the Executive departments and agencies of the federal government. The Code is divided into 50 titles that represent broad areas subject to federal regulation. Each title is divided into chapters that usually bear the name of the issuing agency. Each chapter further subdivided into parts covering specific regulatory areas.
Cold Shutdown	A reactor condition in which the coolant temperature has been reduced to 200°F or below and the pressure has essentially been reduced to atmospheric pressure. This is also known as Mode 5.
Collaborative Platform	An information technology tool that allows real-time audio-visual communication and document sharing.
CA	(Contaminated Area) An area where radioactive material is deposited where it is not desired.
CERC	Corporate Emergency Response Center
CR	Control Room
CRM	Corporate Response Manager
DAC	(Derived Air Concentration) The concentration of a given radionuclide in air.

DDE	(Deep Dose Equivalent) Dose equivalent from external radiation at a tissue depth of 1 centimeter.
DEP	Drill/Exercise Performance
DHEC (SCDHEC)	Department of Health and Environmental Control (SC)
DHS	Department of Homeland Security (US)
DOE	Department of Energy (US)
Dominion Energy	Operates VC Summer
Dose (Radiation)	The quantity of radiation absorbed per unit of mass by the body or by any portion of the body. The unit of radiation dose is the RAD.
Dose Equivalent	Quantity that expresses all radiations on a common scale for calculating the absorbed dose. It is defined as the product of the absorbed dose in rads and certain modifying factors. The unit is rem.
Dose Rate	Dose delivered per unit time.
Dosimeter	An instrument used for measuring the absorbed dose, exposure, or similar radiation quantity.
Dosimetry	A system of dosimeters for evaluating the absorbed dose, exposure, or similar radiation quantity.
DNR (SCDNR)	Department of Natural Resources (SC)
EAB	Exclusion Area Boundary (Nuclear Exclusion Area)
EALs	Emergency Action Levels
EAS	(Emergency Alert System) A network of broadcast stations and interconnecting facilities authorized by the Federal Communications Commission to operate in a controlled manner during a war, state of public peril, disaster or other national, state and local emergencies.
EMD (SCEMD)	Emergency Management Division (SC)
ENF	(Emergency Notification Form) A template form provided by the State of SC for the purpose of disseminating information to offsite agencies regarding an emergency.
ENS	Emergency Notification System
EOC	Emergency Operations Center
EPA	Environmental Protection Agency
EPIP	(Emergency Plan Implementing Procedure) Detailed procedures which provide guidance to individuals and groups for implementation of the provisions of the emergency plan.
EPRI	Electric Power Research Institute
EPZ	(Emergency Planning Zone) A generic area defined about a nuclear facility to facilitate offsite emergency planning and develop a significant response base. It is defined for the plume and ingestion exposure pathways.
ERDS	Emergency Response Data System
ERF	Emergency Response Facilities
ERO	Emergency Response Organization

ETE	Evacuation Time Estimate
Evacuation	The removal of people from an area on an emergency basis to avoid or reduce possible short term radiation exposure.
Exposure	Being exposed to ionizing radiation, radioactive materials, or other hazardous substances.
External Dose	Dose from a source of radioactive material outside the body.
Facility Activation	An Emergency Response Facility is activated when the minimum staff per Figures B-1a, B-1b and B-1c 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.
FBI	Federal Bureau of Investigation
FCEMS	Fairfield County Emergency Medical Services
FEMA	Federal Emergency Management Agency
HEPA	High-efficiency particulate air filter
Frisker	Radiation monitoring equipment. This is a hand-held probe that is slowly passed near the area of interest to determine the presence or absence of radioactive material.
FRMAP	Federal Radiation Monitoring and Assessment Plan
FSAR	Final Safety Analysis Report
Gamma Rays	High-energy, short-wavelength electromagnetic radiation. Gamma rays are essentially similar to x-rays, but are usually more energetic and are nuclear in origin.
HP	(Health Physics) A general term used as a modifying phrase that may refer to facilities, equipment, programs, etc. used in the discipline of Health Physics. A profession devoted to the protection of man and his environment from unwarranted radiation exposure.
HRA	(High Radiation Area) Any area, accessible to personnel, in which there exists radiation originating in whole or in part within licensed material at such levels that a dose equivalent could be received in any one hour in excess of 100 millirem but less than 1000 millirem at 30 centimeters.
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.
HPN	Health Physics Network
HSOC	Homeland Security Operations Center
I&C	Instrument and Controls
ISEM	Interim Station Emergency Manager
Ingestion Exposure Pathway	The means of ingesting radioactive fallout from the plume through the consumption of food or water within a 10 – 50 mile radius of the site.
INPO	(Institute of Nuclear Power Operations) An organization established by the utilities to set up standardized operations. By Letter of Agreement, INPO agrees to provide the service provided by their organization, coordinate the activities of the organization and provide telephone contacts of the organization during an emergency at the Station.
Internal Dose	Dose from a source of radioactive material within the body (as a result of deposition of radionuclides in body tissue).
Ionization Chamber	An instrument that detects and measures ionizing radiation by measuring the electrical current that flows when radiation ionizes gas in a chamber, making the gas a conductor of the electricity.
JIC	Joint Information Center – The facility that houses the Joint Information System.
JIS	Joint Information System – The JIS consists of the processes, procedures, and tools that facilitate the communication to the public, incident personnel, the media, and other stakeholders. The JIS integrates incident information and public affairs into a cohesive organization to provide complete, coordinated information before, during and after an incident.
KI	Potassium Iodide
LCEMS	Lexington County Emergency Medical Services
Liquid Effluent Stream	Processed liquid wastes containing radioactive materials resulting from the operation of a nuclear power reactor.
LOCA	(Loss of Coolant Accident) A loss of coolant accident can result from an opening in the primary cooling system, such as a pipe break or a stuck open relief valve.
Low Population Zone	The area which surrounds the exclusion zone and includes populations from the site out to three miles from the Unit 1 Reactor Building.
MAELU	Mutual Atomic Energy Liability Underwriters
MSL	Mean Sea Level
Monitor, Radiation	A radiation detector whose purpose is to measure the level of ionizing radiation (or quantity of radioactive material).
Monitoring	The continuous or periodic collection and assessment of pertinent information.

Monthly	At least once per 31 days ± 7 days
NEI	Nuclear Energy Institute
NFPA	National Fire Protection Association
NRC (USNRC)	Nuclear Regulatory Commission (US)
NRF	National Response Framework
NSSS	Nuclear Steam Supply System
NUREG-0654/FEMA REP1, Rev 1	Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants: The purpose of this guidance and upgraded acceptance criteria is to provide a basis for NRC licensees, and State and local governments to develop radiological emergency plans and improve emergency preparedness.
NWS	National Weather Service
Occupational Dose	A dose received by a permanent or temporary employee while engaged in activities relating to the use, possession, or surveillance of licensed radioactive material or sources of ionizing radiation. Occupational dose shall not include any exposure of an individual to radiation for the purpose of medical diagnosis or therapy. Determination of occupational dose is the responsibility of the licensee.
OCA	(Owner Controlled Area) The area bounded by the Protected Area on the inside and by the Primary Vehicle Barrier System (VBS) on the outside.
OSC	Operational Support Center
PA	(Protected Area) the area immediately surrounding the nuclear station encompassed by physical barriers (double fence) and access to which is controlled for nuclear security purposes.
PAD	Protective Action Directives
PAG	(Protective Action Guidelines) Projected total effective dose equivalent or committed dose equivalent values to individuals in the general population that warrant protective action following a release of radioactive materials. Protective actions would be warranted provided the reduction in individual dose expected to be achieved by carrying out the protective action is not offset by excessive risks to individual safety in taking the protective actions.
PAR	Protective Action Recommendations
PAT	Plant Access Training
PBX	Private Branch Exchange
Personnel Monitoring Equipment	Devices designed to be worn or carried by an individual for the purpose of measuring occupational radiation doses, e.g. thermo luminescent dosimeters, pocket dosimeters, and finger badges.
PI&R	Problem Identification & Resolution

SPDS	Safety Parameter Display Systems
SRO	Senior Reactor Operator
STA	Shift Technical Advisor
TEDE	(Total Effective Dose Equivalent) Sum of the deep dose equivalent and the committed effective dose equivalent.
TLD	(Thermo Luminescent Dosimeter) A dosimeter based on the effect of ionizing radiation on certain thermo luminescent crystals, in which radiation excites orbital electrons of some atoms to a higher energy state orbit than normal. Stimulating the crystal by controlled heating allows the electrons to return to normal orbit, thereby emitting discrete quanta of light proportional to the amount of ionizing radiation absorbed by the crystal. Emitted light can be measured and related to personnel dose from ionizing radiation.
TSC	Technical Support Center
USCG	U.S. Coast Guard
VBS	(Vehicle Barrier System) security barrier delineated by the large rocks and vehicle search areas
VCSNS (VCS)	V.C. Summer Nuclear Station
Weekly	At least once per 7 days $\pm$ 2 days
X-Ray	Highly penetrating radiation similar to gamma rays.

ATTACHMENT 4

TABLE B-1 COMPARATIVE CHART

VC Summer (VCSNS) *On-Shift* Table Comparison

Major Functional Area and Tasks	Position Title / Expertise	0654 Rev 1 Table B-1 On-shift	VCSNS Rev 5 On-Shift	VCSNS Rev 74 On-Shift	0654 Rev 2 Table B-1 On-Shift	VCSNS Proposed On-shift
Plant Operation and Assessment of Operation Aspects	Shift Manager	1		1	1	1
	Control Room Supervisor (SRO)	1	2	1		
	Reactor Operator (RO)	2	2	2		
	Auxiliary Operator (AO)	2	2	5		
Emergency Direction and Control (Emergency Coordinator) ***	Shift Manager	1**		1**		1**
Notification / Communication **** State/Local and Federal	Emergency Communicator	1****	1	1	1**	1
Radiological Accident Assessment - Dose Assessment	Rad Assessment Director			1	1**	1**
- In-Plant/Onsite Surveys	In-Plant Monitoring team Member/Leader	1	1	1		1
- Chemistry Radiochemistry	Chemistry Team Member/Leader	1		1		
- Protective Actions	Personnel Monitoring Team Member/Leader	2**	1**	1**	1	1
Plant System Engineering / Technical Support	Shift Technical Advisor	1	1	1	1	1
Repair and Corrective Actions	Electrical Maintenance	1**	1**	1		
	RWO/ Mechanical Maintenance	1**	1	2		
	Instrument and Control		1	1		
Firefighting	Fire Team Member		2**			
Rescue Operations and First-Aid	First Aid Team Member	2**				
Site Access Control and Personnel Accountability	Security Personnel					
Total On-Shift		**10**	**11**	**18**	**5**	**5**

**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

VC Summer (VCSNS) *30 Minute Alert or Greater* Augmented ERO Table Comparison

Major Functional Area	Position Title / Expertise	0654 Rev 1 Table B-1 (30 min)	VCSNS Rev 5 (30 min)	VCSNS Rev 74 (30 min)	0654 Rev 2 Table B-1 (30 min)	VCSNS Proposed (30 min)
Command and Control	Emergency Coordinator					
Classification	Classification Advisor					
Notification / Communication	State/local	1	1	1		
	Federal					
Radiological Accident Assessment - Dose Assessment - In-Plant/Onsite Surveys - Chemistry Radiochemistry - Protective Actions - Offsite Surveys	Senior Manager/ Site RP Coordinator					
	Dose Assessor	1	1	1		
	RP Technician	2	2	2		
	Chemistry Technician		1*			
	RP Technician	2	1	2		
	Team Lead and Driver	2	2*	2*		
Plant System Engineering / Technical Support	Ops Advisor					
	Core/Thermal Hydraulics Eng	1	1			
	Engineering Engineer					
	Mechanical Engineer					
	Engineering Support Supervisor					
Repair and Corrective Actions	Mechanical Maintenance	1				
	Electrical Maintenance	1		1		
	I&C Maintenance		1*	1*		
	Damage Control Team Coord					
	Field Team Director					
Total Augmented ERO		**11**	**10**	**10**		

*Actual response time is 40 minutes

VC Summer (VCSNS) *60 Minute Alert or Greater* Augmented ERO Table Comparison

Major Functional Area	Position Title / Expertise	0654 Rev 1 Table B-1 (60 min)	VCSNS Rev 5 (60 min)	VCSNS Rev 74 (60 min)	0654 Rev 2 Table B-1 (60 min)	VCSNS Proposed (60 min)
Command and Control	Emergency Coordinator			1	1	
	EOF Manager					
Classification	Classification Advisor (EP)			1	1	
Notification / Communication	State/local	1	2	2	2	1
	Federal					
Radiological Accident Assessment	Senior Manager/ Site RP Coordinator			1	1	1
- Dose Assessment	Rad Assessment Director	1			1	
- In-Plant/Onsite Surveys	Onsite and In-Plant Monitoring Team Member/Leader	2	2	2	2	2
- Chemistry Radiochemistry	Chemistry Team Member/Leader		1	1		
- Protective Actions	HP	2	2	2	1	1
- Offsite Surveys	Offsite Monitoring Team Member/Leader	2	2		2	2
Plant System Engineering / Technical Support	Ops Advisor			1		
	Tech Support Supervisor			1		
	Core/Thermal Hydraulics Eng	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	1	1	
	Instrument and Control		1	1	1	
	HP (Rad Waste)		1	1		
	OSC Supervisor			1		
Total Augmented ERO		**11**	**16**	**19**	**17**	**7**

VC Summer (VCSNS) *60 Minute SAE or Greater* Augmented ERO Table Comparison

Major Functional Area	Position Title / Expertise	0654 Rev 1 Table B-1 (60 min)	VCSNS Rev 5 (60 min)	VCSNS Rev 74 (60 min)	0654 Rev 2 Table B-1 (60 min)	VCSNS Proposed (60 min)
Command and Control	Emergency Director		1	1	1	
Notification / Communication	Communications Coordinator	2		1	1	
Radiological Accident Assessment	Senior Manager/ Site RP Coordinator	1		1	1	
- Dose Assessment	Dose Assessor			1	1	
- In-Plant/Onsite Surveys	RP Technician					
- Chemistry Radiochemistry	Chemistry Technician	1				
- Protective Actions	RP Technician	1				
- Offsite Surveys	Team Lead and Driver			2		
Plant System Engineering / Technical Support	Ops Advisor					
	Core/Thermal Hydraulics Eng					
	Engineering Engineer	1				
	Mechanical Engineer	1				
	Technical Support Manager					
Repair and Corrective Actions	Mechanical Maintenance	1				
	Electrical Maintenance					
	Instrument and Control	1				
News Center	Chief Technical Spokesperson			1		
	JIC Coordinator			1		
	Technical Briefer			1		
Total Augmented ERO		**15**	**1**	**9**	**4**	**0**

VC Summer (VCSNS) *90 Minute Alert or Greater* Augmented ERO Table Comparison

Major Functional Area	Position Title / Expertise	0654 Rev 1 Table B-1 (90 min)	VCSNS Rev 5 (90 min)	VCSNS Rev 74 (90 min)	0654 Rev 2 Table B-1 (90 min)	VCSNS Proposed (90 min)
Command and Control	Emergency Coordinator					3
Notification / Communication	State/local					2
	Federal					
Radiological Accident Assessment	Senior Manager/ Site RP Coordinator					3
- Dose Assessment	Dose Assessor					1
- In-Plant/Onsite Surveys	RP Technician				2	2
- Chemistry Radiochemistry	Chemistry Technician					
- Protective Actions	RP Technician				1	1
- Offsite Surveys	Offsite Monitoring Team Member/Leader				2	2
Plant System Engineering / Technical Support	Core/Thermal Hydraulics Eng					1
	Electrical Engineer					1
	Mechanical Engineer					1
	Technical Support Manager					
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
Total Augmented ERO					**10**	**25**

ATTACHMENT 5

ERO POSITION IMPACT SUMMARY

EOF Position Changes		
Current EOF Position	**Proposed Position**	**Change**
Emergency Control Officer	Corporate Response Manager	Relocation of function from EOF to CERC as discussed below.
General Services Coordinator	Resource Support Manager	Relocation of function from EOF to CERC as discussed below
Plant Engineering Advisor	Emergency Technical Director (TSC)	Engineering function re-assigned to TSC position as discussed below.
Offsite Radiological Monitoring Coordinator	Radiological Assessment Coordinator	Radiological assessment functions split between CERC and TSC positions as described below.
	Technical Support Manager	
Dose Assessor	Accident Assessment Team	Relocation of function from EOF to CERC as discussed below.
	Dose Assessment Team Leader (TSC)	
Communications Coordinator	Technical Support Manager	Relocation of function from EOF to CERC as discussed below.
	Operations Support Team – State/local Communicator	
State/County Communicator	Operations Support Team – State/local Communicator	Relocation of function from EOF to CERC as discussed below.
EOF Manager	Technical Support Manager	Relocation of function from EOF to CERC as discussed below.
	Radiological Assessment Coordinator	
	Operations Support Team - State/Local Communicator	
EP Advisor	Corporate Response Manager	Relocation of function from EOF to CERC as discussed below.
	Resource Support Team - Logistics Coordinator	
EOF Logistics Coordinator	Resource Support Team - Logistics Coordinator	Relocation of function from EOF to CERC as discussed below.
	Resource Support Team – Logistics Coordinator	
Plant Security Advisor	None	Deleted position discussed below.
Field Teams (EOF)	Offsite Monitoring Teams	Relocation of function to CERC or TSC as discussed below

TSC/OSC Position Changes		
Current Position	**Proposed Position**	**Change**
Emergency Director	Station Emergency Manager	Title change only
Technical Support Supervisor	Emergency Technical Director	Title change only
Emergency Operations Supervisor	Emergency Operations Director	Title change only
Maintenance Supervisor	Emergency Maintenance Director	Title change only
Radiological Assessment Supervisor	Radiological Assessment Director	Title change only
Emergency Notification System (ENS) Communicator	NRC Emergency Communicator	Title change only
State/County Communicator	Operations Support Team - State/Local Communicator (CERC)	Title change only
Technical Support Eng – Core Thermal	Reactor Engineer	Title change only
Technical Support Eng - Electrical	Electrical Engineer	Title change only
Technical Support Eng - Mechanical	Mechanical Engineer	Title change only
EP Advisor	Station Emergency Manager	Transfer of function to other TSC positions as described below
	State/local Communicator	
None	Dose Assessment Team Leader	New TSC position as discussed below
OSC Supervisor	OSC Director	Title change only
Damage Control Team - Ops	Operations Coordinator	Title change only
Damage Control Team - Elec	Electrical Coordinator	Title change only
Damage Control Team - Mech	Mechanical Coordinator	Title change only
Damage Control Team– I&C	Instrument Coordinator	Title change only
Damage Control Team - HP	Radiation Protection Coordinator	Title change only
Damage Control Team – Chem	None	Deleted position discussed below
None	Radiation Protection Supervisor	New position discussed below
Security Lead (OSC)	Emergency Security Director	Relocation of function from OSC to TSC as discussed below
JIC Position Changes		
Current Position	**Proposed Position**	**Change**
Technical Briefer	Dominion Energy Technical Advisor	Position and function changed from JIC to CERC as discussed below
JIC Coordinator	Chief Technical Spokesperson (CERC)	Position and function changed from JIC to CERC as discussed below
	Media Briefing Support Team (CERC)	
Innsbrook Corporate Support Center (ICSC) Director	None	Deleted position discussed below

Current Performer / Functions	Proposed Performer / Functions
Emergency Control Officer (EOF) - Senior employee with overall responsibility for coordinating emergency response actions - Ensures federal, state and local authorities and industry support remain cognizant of event status - Responsible for designating the Chief Technical Spokesperson - Approves press releases - Requests assistance from non-VCSNS emergency response organizations - Provide status, assessment info and PARs to OROs	**Corporate Response Manager (CERC)** - Has the ultimate authority to commit company resources and set policy as part of managing the long-term recovery effort - Assumes overall control and operation of the CERC - Works with state and federal agencies in the CERC - Approves press releases - Supervises Station Emergency Manager, Technical Support manager, Resource Support Manager, Nuclear News Manager and Chief Nuclear Spokesperson

Change: **Relocation of function from the EOF to the CERC**

Justification:
The current VCSNS Emergency Plan includes an Emergency Control Officer in the EOF as noted in Figure B-1c. This position is staffed at the Site Area Emergency or higher classification. Under the proposed change, this function will be performed by the Corporate Response Manager at the CERC. The CERC is activated at the Alert or higher classification, making the Corporate Response Manager position available earlier in the response process than is currently the case with the Emergency Control Officer. Designation of the Chief Technical Spokesperson is no longer required under the proposed change as this position is already designated for CERC staffing.

There is no loss of capability associated with these functions as a result of the proposed change.

Current Performer / Functions	Proposed Performer / Functions
General Services Coordinator (EOF) - Maintains and coordinates document services, transportation, personnel accommodations, temporary offsite facilities and communications, meals and procurement/delivery of items as requested by the ERO	**Resource Support Manager (CERC)** - Responsible for logistical and administrative support for the CERC.

Change: **Relocation of function from the EOF to the CERC**

Justification:
The current VCSNS Emergency Plan includes a General Services Coordinator in the EOF as noted in Figure B-1c. This position is staffed at the Site Area Emergency or higher classification. Under the proposed change, this function will be performed by the Resource Support Manager at the CERC. The CERC is activated at the Alert or higher classification, making the Resource Support Manager position available earlier in the response process than the current General Services Coordinator position.

There is no loss of capability associated with this function as a result of the proposed change.

Current Performer / Functions	Proposed Performer / Functions
Plant Engineering Advisor (EOF) - Supports EOF Manager and ECO with technical information and engineering support	**Emergency Technical Director (TSC)** (Formerly Technical Support Supervisor in the TSC) - Directs activities of the Reactor, Electrical and Mechanical Engineers - Analyze mechanical, electrical Instrument & control, hydraulic, thermodynamic and reactor physics problems and develop solutions
Change: Maintain Plant Engineering oversight in the TSC as part of the transition from the EOF to the CERC **Justification:** The current VCSNS Emergency Plan includes a Plant Engineering Advisor in the EOF as noted in Figure B-1c. This position is staffed at the Site Area Emergency or higher classification and relays technical information from the TSC to the ECO in the EOF. The proposed change renames the TSC Technical Support Supervisor position to Emergency Technical Director to align with the Dominion standard ERO title and maintains oversight of engineering resources in the TSC. The Emergency Technical Director position in the TSC will continue to maintain responsibility for providing oversight and directing engineering activities. Because the Emergency Technical Director position is being maintained in the TSC, there are no adverse impacts to performance of this function as a result of the proposed change.	

Current Performer / Functions	Proposed Performer / Functions
Offsite Radiological Monitoring Coordinator (EOF) - Directs activities of EOF radiological assessment staff and offsite monitoring teams - Recommend classification and PAR changes based on effluent releases or dose projections - Advise the EOF Manager on emergency exposures or issuance of KI to field teams	**Radiological Assessment Coordinator (CERC)** - Direct performance of dose calculations - Directs field team radio operator activities - Dispatch/track offsite Field Team members - Project offsite doses - Formulating PARs **Technical Support Manager (CERC)** - Authorizes administration of KI for off-site monitoring teams.
Change: Relocation of function from the EOF to the CERC **Justification:** The current VCSNS Emergency Plan includes an Offsite Radiological Monitoring Coordinator in the EOF as noted in Figure B-1c. This position is staffed at the Site Area Emergency or higher classification. The proposed change re-assigns functions to the Radiological Assessment Coordinator and the Radiological Assessment Director in the TSC. The TSC and CERC are activated at the Alert or higher classification, and so the Radiological Assessment Coordinator position will be available earlier in the response process than the current Offsite Radiological Monitoring Coordinator position. There is no loss of capability associated with this function as a result of the proposed change.	

Current Performer / Functions	Proposed Performer / Functions
Dose Assessor (EOF) - Operates the dose assessment program, - Interprets radiological data from the field monitoring teams, - Provides PARs based on dose projections to the Offsite Radiological Monitoring Coordinator	**Accident Assessment Team (CERC)** - Analyze core conditions and accident progression - Develop dose projections - Direct the movement and activities of the Offsite Field Teams - Establish the Health Physics Network (HPN) when requested by the NRC **Dose Assessment Team Leader (TSC)** - Operates the dose assessment program - Interprets radiological data from offsite monitoring teams - Reports results of offsite releases and PARs based on dose projections to the RAD

Change: **Relocation of function from the EOF to the CERC**

Justification:
The current VCSNS Emergency Plan includes a Dose Assessor in the EOF as noted in Figure B-1c. This position is staffed at the Site Area Emergency or higher classification. The proposed change re-assigns functions to the Accident Assessment Team under the direction of the Radiological Assessment Coordinator at the CERC as depicted in the proposed Figure B-1c. The TSC Dose Assessment Team Leader, staffed at 60-minutes from the Alert or higher classification, is also available to perform these activities when the CERC is not available.

There is no loss of capability associated with this function as a result of the proposed change.

Current Performer / Functions	Proposed Performer / Functions
Communications Coordinator (EOF) - Responsible for completion of Emergency Notification Forms - Oversees actions taken by State/County Communicator	**Technical Support Manager (CERC)** - Supervises the Operations Support Team, including the State/Local Communicator **Operations Support Team - State/Local Communicator (CERC)** - Responsible for completion of Emergency Notification Forms

Change: **Relocation of function from the EOF to the CERC**

Justification:
The current VCSNS Emergency Plan includes a Communication Coordinator in the EOF as noted in Figure B-1c. This position is staffed at the Site Area Emergency or higher classification. The proposed change re-assigns the oversight function and responsibility for completion of the form to the Technical Support Manager and completion of Emergency Notification Forms to the Operations Support Team - State/Local Communicator in the CERC. The CERC is activated at the Alert or higher classification, and so the Technical Support Manager and Operations Support Team - State/Local Communicator positions will be available earlier in the response process than the current Communications Coordinator position.

This change supports continued performance of state/local communications, and as a result, there is no loss of communications capability as a result of the proposed change.

Current Performer / Functions	Proposed Performer / Functions
State/County Communicator (EOF) - Ensures initial notifications are communicated offsite within 15 minutes of classification	**Operations Support Team - State/Local Communicator (CERC)** - Ensures initial notifications are communicated offsite within 15 minutes of classification.
Change: **Relocation of function from the EOF to the CERC** **Justification:** The current VCSNS Emergency Plan includes a State/County Communicator in the EOF. With the transition to use of the CERC and discontinued use of the EOF as outlined in the proposed change, this function will be performed by the Operations Support Team - State/Local Communicator in the CERC. There is no loss of notification capability as a result of the proposed change.	

Current Performer / Functions	Proposed Performer / Functions
EOF Manager (EOF) - Directing and coordinating activation and response efforts in the EOF - Determining PARs - Preparing State/County notification forms with the assistance of the Offsite Radiological Monitoring Coordinator	**Technical Support Manager (CERC)** - Approving and providing PARs to offsite authorities **Radiological Assessment Coordinator (CERC)** - Ensuring prompt and accurate dose assessment - Formulating and recommending PARs to the Technical Support Manager **Operations Support Team - State/Local Communicator (CERC)** - Responsible for completion of Emergency Notification Forms
Change: **Relocation of function from the EOF to the CERC** **Justification:** The current VCSNS Emergency Plan includes an EOF Manager in the EOF as noted in Figure B-1c. This position is staffed at the Site Area Emergency or higher classification. The proposed change re-assigns responsibility for PAR development to the Radiological Assessment Coordinator, approving PARs and notifications to offsite authorities to the Technical Support Manager, and completion of forms for state/local notifications to the Operations Support Team - State/Local Communicator in the CERC. The CERC is activated at the Alert or higher classification, so the Radiological Assessment Coordinator, Technical Support Manager, and Operations Support Team - State/Local Communicator positions will be available earlier in the response process than the current EOF Manager position. Responsibility for direction and activation of the EOF is no longer required under the purposed change. Oversite of the CERC is a function of the Corporate Response Manager. These changes support continued performance of PARs and state/local communications, and as a result, there is no loss of capability associated with this function as a result of the proposed change.	

Current Performer / Functions	Proposed Performer / Functions
Emergency Preparedness Advisor (EOF) - Communicate with state and local government EOCs. - Interface with NRC Site Team - Support long term family/personal needs of responders.	Corporate Response Manager (CERC) - Interface with NRC Site Team Resource Support Team - Logistics Coordinator (CERC) - Evaluate station needs regarding logistics and planning and coordinate assistance - Contact affected station and identify staffing needs
Change: **Relocation of function from the EOF to the CERC** Justification: The current VCSNS Plan includes an Emergency Preparedness Advisor in the EOF as noted in Figure B-1c. The proposed change eliminates the EP Advisor position. Duties associated with NRC Site Team interface are performed by the CRM and coordination of support for site responders will be the responsibility for the Resource Support Team - Logistics Coordinator in the CERC as directed by corporate response procedures. Activities associated with communications with state and local EOCs is performed by the Media Briefing Support Team. There is no loss of capability associated with these functions as a result of the proposed change.	

Current Performer / Functions	Proposed Performer / Functions
EOF Logistics Coordinator (EOF) - Administrative duties - Maintain Event Status Board if EOF display is not functional	Resource Support Team - Logistics Coordinator (CERC) - Evaluate station needs regarding logistics and planning and coordinate assistance - Contact affected station and identify staffing needs Operations Support Coordinator (CERC) - Maintains the Event Status board in CERC
Change: **Relocation of function from the EOF to the CERC** Justification: The current VCSNS Plan includes an EOF Logistics Coordinator as noted in Figure B-1c. This position is assigned to display board maintenance, as needed, and administrative activities. Under the proposed change, administrative duties will be managed through the Resource Support Team - Logistics Coordinator and display board maintenance, when required, will be the responsibility of the Operations Support Coordinator in the CERC. There is no loss of capability associated with the proposed changes.	

Current Performer / Functions	Proposed Performer / Functions
Plant Security Advisor (EOF) - Responsible for maintaining EOF security - Coordinates EOF security and site security - Interfaces with local law enforcement	**None**
Change: Deletion of Plant Security Advisor position **Justification:** The current VCSNS Emergency Plan includes a Plant Security Advisor in the EOF as noted in Figure B-1c. With the transition to use of the CERC and discontinued use of the EOF as outlined in the proposed change, this position is no longer required. There is no loss of capability as a result of the proposed change.	

Current Performer / Functions	Proposed Performer / Functions
Field Teams (EOF) - Perform radiological surveys of the environs - Collect sample data from the environs for analysis	**Offsite Monitoring Teams (TSC or CERC)** - Perform radiological surveys of the environment - Collect sample data from the environment for analysis
Change: Offsite Field Monitoring Teams added to the TSC to reflect the ability to direct Offsite Field Monitoring Teams from the TSC as needed. **Justification:** The current VCSNS Emergency Plan includes Field Teams in the EOF as noted in Figure B-1c. In the proposed changed the Field Teams position title is changed to Offsite Monitoring Teams. In addition, the proposed change reflects the ability to direct Offsite Monitoring Teams activities from the CERC or the TSC as appropriate. This change is aligned with the standard ERO model at Dominion. There is no loss of capability associated with this function as a result of the proposed change.	

Current Performer / Functions	Proposed Performer / Functions
EP Advisor (TSC) - Advise/support TSC on facility actions - Advise ED on regulatory requirements - Completes emergency notification forms and provides oversight of the state/county communicator	**Station Emergency Manager (SEM) (TSC)** - Provides oversight of the state/local communicator **State/Local Communicator (TSC)** - Completes emergency notification forms
Change: Deletion the EP Advisor position and re-assignment of required tasks to other positions in the TSC **Justification:** The current VCSNS Emergency Plan includes an Emergency Preparedness Advisor in the TSC as noted in Figure B-1b. The proposed change re-assigns completion of emergency notification forms to the Operations Support Team – State/local Communicator in the CERC and the State/Local Communicator in the TSC when the CERC is not available. Oversight for the State/Local Communicator is provided by the Station Emergency Manager. Regulatory requirements associated with classification and notification timeliness are addressed in station EPIPs. There is no loss of capability associated with this function as a result of the proposed change.	

Current Performer / Functions	Proposed Performer / Functions
None (TSC)	**Dose Assessment Team Leader (TSC)** - Provide direction to the Offsite Monitoring Teams - Operates the dose assessment program - Interprets radiological data from the offsite monitoring teams - Report the results of offsite releases and PARs based on dose projections to the Radiological Assessment Director
Change: Addition of new Dose Assessment Team Leader position in the TSC **Justification:** The current VCSNS Emergency Plan does not include a Dose Assessment Team Leader in the TSC. The proposed change adds this as a new 60-minute response position in the TSC reporting to the Radiological Assessment Director. This position is responsible for performing dose assessments, providing instructions to the Offsite Monitoring Teams, and advising the Radiological Assessment Director of radiological release status and PARs based on field readings and dose projections if the CERC is not available. This change is aligned with the standard ERO model at Dominion. There is no loss of capability associated with this function as a result of the proposed change.	

Current Performer / Functions	Proposed Performer / Functions
Damage Control Team - Chemistry (OSC) - Collect system samples and perform laboratory analysis	**None**
Change: Deletion of the Damage Control Team - Chemistry position **Justification:** Chemistry activities are managed through department procedure as required by site Technical Specifications. This position is being removed from the ERO as it does not perform any EP functions. Chemistry functions will continue to be performed at the site in accordance with Tech Spec requirements and existing chemistry procedures. This change is aligned with NUREG-0654, Rev 2, Table B-1 guidance. There is no loss of capability associated with this function as a result of the proposed change.	

Current Performer / Functions	Proposed Performer / Functions
None (OSC)	**Radiation Protection Supervisor (OSC)** - Directs activities associated with inplant, onsite and personnel monitoring. - Provides survey results for offsite dose assessment and recommends protective measures.
Change: Addition of new Radiation Protection Supervisor position in the OSC **Justification:** The current VCSNS Emergency Plan does not include a Radiation Protection Supervisor in the OSC. The proposed change adds this as a new position in the OSC reporting to the Radiological Protection Coordinator in the OSC. This position is responsible for directing inplant, onsite and personnel monitoring and providing recommendations on personnel protective measures. This change is aligned with the standard ERO model at Dominion. There is no loss of capability associated with this function as a result of the proposed change.	

Current Performer / Functions	Proposed Performer / Functions
Security Lead (OSC) - Provide security escort or access as requested - Provides for physical security of the plan - Controls access to the Protected Area and plant Vital Areas	**Emergency Security Director (TSC)** - Acts as the liaison between site security and the TSC - Directs security activities at the site
Change: Deletion of the Security Lead position **Justification:** The current VCSNS Emergency Plan includes a Security Lead in the OSC as noted in Figure B-1b. The proposed change removes the position from the OSC and renames the position and relocates the function to the Emergency Security Director position in the TSC. This change is aligned with the standard ERO model at Dominion. Because overall security support is maintained, the change does not result in a loss of capability associated with this function as a result of the proposed change.	

Current Performer / Functions	Proposed Performer / Functions
Technical Briefer - Obtains technical and plant data status	**Dominion Energy Technical Advisor (CERC)** - Provides technical information and answers technical questions.
Change: JIC Position and function replaced by existing CERC position **Justification:** The current VCSNS Emergency Plan includes a Technical Briefer position as part of the JIC ERO. Under the proposed change technical information will be provided by the Dominion Energy Technical Advisor in the CERC. There is no loss of capability as a result of the proposed change.	

Current Performer / Functions	Proposed Performer / Functions
JIC Coordinator - Ensures operability of JIC - Supervision and monitoring of JIC personnel - Media monitoring	**Chief Technical Spokesperson (CERC)** - Supervises the Media Briefing Support Team **Media Briefing Support Team (CERC)** - Provide technical advice - Interface with offsite response organization public information staff.
Change: JIC Position and function replaced by existing CERC positions **Justification:** The current VCSNS Emergency Plan includes a JIC Coordinator position as part of the JIC ERO. Under the proposed change the JIC activities are conducted within the CERC and so are supervised by the CERC CRM. Media monitoring functions currently assigned to the JIC Coordinator will be completed by the Nuclear News Manager using the JIS process. There is no loss of capability as a result of the proposed change.	

Current Performer / Functions	Proposed Performer / Functions
Innsbrook Corporate Support Director (ICSC) - Interface with ECO or ED to obtain direction to the ICSC - Authorizing augmentation of additional corporate resources - Approving press releases	**None**
Change: Position deleted as the referenced facility is no longer used under the proposed plan **Justification:** The Corporate Support Director functions out of the Innsbrook Corporate Support Center (ICSC) and serves as an interface with the Emergency Control Officer (ECO) in the EOF and the Emergency Director (ED) in the TSC. Under the proposed change, the EOF is replaced by the Corporate Emergency Response Center (CERC) and the ICSC is no longer needed. Authorization of corporate resources and approving press releases is the responsibility of the Corporate Response manager in the CERC. As a result, the Corporate Support Director position in the ICSC is no longer required. There is no loss of capability as a result of the proposed change.	

ATTACHMENT 6

NO SIGNIFICANT HAZARDS CONSIDERATION JUSTIFICATION

NO SIGNIFICANT HAZARDS CONSIDERATION JUSTIFICATION

Description of Amendment Request:

The proposed amendment would modify the VCSNS Emergency Plan by:

(1) Extending Emergency Response Organization (ERO) Augmentation Times to 60 or 90 minutes from 30 or 60 minutes depending on specific ERO positions.

(2) Relocating the Emergency Operations Facility (EOF) and the Joint Information Center (JIC) from Ballentine, South Carolina and West Columbia, South Carolina to the Dominion Energy Corporate Emergency Response Center (CERC) in Glen Allen, Virginia.

(3) Adding 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).

(4) Revising the minimum staffing definition for the Emergency Response Facilities (ERF) to align with new facility activation criteria.

(5) Extending facility activation requirements to 90 minutes after declaration of an Alert or higher classification.

(6) Reorganizing the VCSNS Emergency Plan Table B-1a based on emergency preparedness functions.

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

(8) Removing references to chemistry, maintenance, firefighting, first aid/rescue, site access control and personal accountability functions being on-shift from Table B-1a.

Basis for proposed no significant hazards consideration:

Dominion Energy South Carolina (DESC) has evaluated whether a significant hazards consideration is involved with the proposed amendment by focusing on the three standards set forth in 10 CFR 50.92, "Issuance of Amendment," as discussed below:

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

Response: No.

The proposed changes, have no effect on normal plant operation or on any accident initiator or precursor. The proposed changes do not impact the function of plant structures, systems, or components (SSCs). The proposed changes do not alter or prevent the ERO from performing its intended functions to mitigate the consequences of an accident or event. The ability of the ERO to adequately respond 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 changes do 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 changes do not introduce failure modes that could result in a new accident. The proposed increases to the staff augmentation response times in the VCSNS Emergency Plan and the relocation of the EOF and JIC have been demonstrated to be acceptable through a staffing analysis as required by 10 CFR 50, Appendix E.IV.A.9 and a detailed functional analysis. The proposed changes do not alter or prevent the ERO from to performing its intended functions to mitigate the consequences of an accident or event.

Therefore, the proposed changes do 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 the 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 changes are associated with the VCSNS Emergency Plan staffing, EOF and JIC relocation and other administrative items, as described in the description section. The proposed changes do not impact operation of the plant or its response to transients or accidents. The changes do not affect the Technical Specifications (TS). The proposed changes do not involve a change in the method of plant operation, and no accident analyses will be affected by the proposed changes. The revised VCSNS Emergency Plan will continue to provide the necessary response staff. A staffing analysis and a functional analysis were performed for the proposed changes on the timeliness of performing major tasks for the functional areas of the VCSNS Emergency Plan. These analyses concluded that extensions to staff augmentation times and the relocation of EOF would not significantly affect the ability to perform the required Emergency Plan tasks. Therefore, the proposed changes are determined to not adversely affect the ability to meet 10 CFR 50.54(q)(2), the requirements of 10 CFR 50, Appendix E, the emergency planning standards as described in 10 CFR 50.47 (b)

Therefore, the proposed changes do not involve a significant reduction in a margin of safety.

Based on above, DESC concludes that the proposed changes present no significant hazards consideration under the standards set forth in 10 CFR 50.92(c), and, accordingly, a finding of “no significant hazards consideration” is justified.

ATTACHMENT 7

OFFSITE RESPONSE ORGANIZATION CONCURRENCE LETTERS

V.C. Summer Nuclear Station
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Mailing Address:
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DominionEnergy.com

Dominion Energy

May 23, 2022

Mr. Brad Douglas
Emergency Director
Fairfield County Emergency Management
350 Columbia Rd
Winnsboro, SC 29180

Dear Mr. Douglas,

Dominion Energy South Carolina is in the process of asking the Nuclear Regulatory Commission (NRC) for approval to revise the Virgil C. Summer Nuclear Station (VCSNS) Emergency Plan. Below is a list of all major proposed changes.

- Extend augmentation times to 90 minutes for most Technical Support Center (TSC) and Operational Support Center (OSC) ERO members
- Changing definition of minimum/full staff; all E-Plan designated positions will now be expected to respond at 90 minutes with the exception of a Federal Communicator and Radiological Protection staff which will remain at 60 minutes.
- Remove administrative positions, those not included in the E-Plan, to non-emergency response procedures
- Aligning required ERO on-shift personnel with revised regulatory guidance
- Relocation of the Emergency Operations Facility (EOF) from Ballentine, SC to the Corporate Emergency Response Center (CERC) in Innsbrook, VA.

Currently, the TSC and OSC are required to activate within about 60 minutes of an Alert, and the EOF is required to activate within about 60 minutes of a Site Area Emergency. The proposed change will require that all facilities (TSC, OSC, and CERC) be activated within 90 minutes of an Alert.

Prior to seeking approval from the NRC, Dominion Energy South Carolina hereby requests that your agency review this change for any impact it may have on your Radiological Emergency Preparedness (REP) Plan for VCSNS. If you have any questions regarding these proposed emergency plan changes or this request, please feel free to contact Ty Tharp at (803) 394-5646.

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 a copy of this letter and returning such copy to me at your convenience. A returned electronic copy is acceptable.

As always, your continued support of the VCSNS emergency preparedness program is greatly appreciated.

Sincerely,

Robert E. Williamson

VCSNS Manager, Nuclear Emergency Preparedness

ACKNOWLEDGED AND AGREED

Fairfield County Emergency Management

Signed: Brad Douglas

Name: Brad Douglas

Title: Director

Date: 05/24/2022

V.C. Summer Nuclear Station
Bradham Blvd & Hwy 215, Jenkinsville, SC 29065
Mailing Address:
P.O. Box 88, Jenkinsville, SC 29065
DominionEnergy.com

Dominion Energy

June 16, 2022

Mr. Chris Murrin
Human Resources Director
Lexington County Emergency Management
434 Ball Park Road
Lexington, SC 29072

Dear Mr. Murrin,

Dominion Energy South Carolina is in the process of asking the Nuclear Regulatory Commission (NRC) for approval to revise the Virgil C. Summer Nuclear Station (VCSNS) Emergency Plan. Below is a list of all major proposed changes.

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Sincerely,

Robert E. Williamson

VCSNS Manager, Nuclear Emergency Preparedness

ACKNOWLEDGED AND AGREED

Lexington County Emergency Management

Signed: _____

Name: [illegible] _____

Title: Deputy County Administrator _____

Date: 6-23-22 _____

V.C. Summer Nuclear Station
Bradham Blvd & Hwy 215, Jenkinsville, SC 29065
Mailing Address:
P.O. Box 88, Jenkinsville, SC 29065
DominionEnergy.com

Dominion Energy

May 23, 2022

Mr. Tommy Long
Emergency Services Coordinator
Newberry County Emergency Management
540 Wilson Road
Newberry, SC 29108

Dear Mr. Long,

Dominion Energy South Carolina is in the process of asking the Nuclear Regulatory Commission (NRC) for approval to revise the Virgil C. Summer Nuclear Station (VCSNS) Emergency Plan. Below is a list of all major proposed changes.

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As always, your continued support of the VCSNS emergency preparedness program is greatly appreciated.

Sincerely,

Robert E. Williamson

VCSNS Manager, Nuclear Emergency Preparedness

ACKNOWLEDGED AND AGREED

Newberry County Emergency Management

Signed: _____

Name: Thomas L. Long

Title: Emergency Management Director

Date: 5-24-22

V.C. Summer Nuclear Station
Bradham Blvd & Hwy 215, Jenkinsville, SC 29065
Mailing Address:
P.O. Box 88, Jenkinsville, SC 29065
DominionEnergy.com

Dominion Energy®

May 23, 2022

Mr. Mike Kalec
Emergency Manager
Richland County Emergency Management
1410 Laurens Street
Columbia, SC 29204

Dear Mr. Kalec,

Dominion Energy South Carolina is in the process of asking the Nuclear Regulatory Commission (NRC) for approval to revise the Virgil C. Summer Nuclear Station (VCSNS) Emergency Plan. Below is a list of all major proposed changes.

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As always, your continued support of the VCSNS emergency preparedness program is greatly appreciated.

Sincerely,

Robert E. Williamson

VCSNS Manager, Nuclear Emergency Preparedness

ACKNOWLEDGED AND AGREED

Richland County Emergency Management

Signed: _____

Name: _____

Title: _____

Date: 5/31/2022

V.C. Summer Nuclear Station
Bradham Blvd & Hwy 215, Jenkinsville, SC 29065
Mailing Address:
P.O. Box 88, Jenkinsville, SC 29065
DominionEnergy.com

Dominion Energy

May 23, 2022

Ms. Danilyn Bock
Radiological Emergency Preparedness Manager
South Carolina Emergency Management Division
2779 Fish Hatchery Road
West Columbia, SC 29172

Dear Ms. Bock,

Dominion Energy South Carolina is in the process of asking the Nuclear Regulatory Commission (NRC) for approval to revise the Virgil C. Summer Nuclear Station (VCSNS) Emergency Plan. Below is a list of all major proposed changes.

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Sincerely,

Robert E. Williamson

VCSNS Manager, Nuclear Emergency Preparedness

ACKNOWLEDGED AND AGREED

South Carolina Emergency Management Division

Signed: _____

Name: Kim Stenson

Title: Director

Date: 5/31/2022

ATTACHMENT 8

REFERENCES

8.1 ADAMS Accession No. ML19347D139, 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

8.2 ADAMS Accession No. ML16124A002, NRC Regulatory Issue Summary (RIS) 2016-10, “License Amendment Requests for Changes to Emergency Response Organization Staffing and Augmentation,” August 5, 2016

8.3 ADAMS Accession No. ML040420012, 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,” U.S. Nuclear Regulatory Commission and Federal Emergency Management Agency, November 1980

8.4 ADAMS Accession No. ML20040B267, NRC Letter to South Carolina Electric and Gas Company, NUREG-0717, Supplement No. 3, Safety Evaluation Report related to the operation of Virgil C. Summer Nuclear Station Unit 1, January 1982

8.5 ADAMS Accession No. ML082970276, NRC Letter to South Carolina Electric & Gas Company, “Virgil C. Summer Nuclear Station, Unit No. 1, Safety Evaluation for Emergency Action Levels,” December 15, 2008

8.6 ADAMS Accession No. ML15063A355, NRC Letter to South Carolina Electric & Gas Company, “Virgil C. Summer Nuclear Station, Unit 1 – Issuance of Amendment to Revise Emergency Action Levels to a Scheme Based on NEI 99-01, Revision 6,” April 12, 2015

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

8.8 ADAMS Accession No. ML20062B392, NRC RII Letter to South Carolina Electric & Gas Company, “Response to Supporting Information Addressing Core Technical Support Augmentation Time in Revision 26 of Virgil C. Summer Radiation Emergency Plan,” August 21, 1990

8.9 ADAMS Accession No. ML051390358, NUREG-0696, Functional Criteria for Emergency Response Facilities – Final Report, February 1981

8.10 ADAMS Accession No. ML19031B227, NRC Letter to Virginia Electric and Power Company, Subject: North Anna Power Station, Unit Nos. 1 and 2, and Surry Power Station, Unit Nos. 1 and 2 – Issuance of Amendment Nos. 281, 264, 294 and 294 to Consolidate Emergency Operations Facilities and Associated Emergency Plan Changes (EPID L-2018-LLA-0014), February 27, 2019

8.11 ADAMS Accession No. ML043350484, NRC Letter to Southern Nuclear Operating Company, Inc., Subject: Emergency Operations Facility (EOF) Relocation and Consolidation to the Southern Nuclear Corporate EOF (TAC Nos. MC1056, MC1058, MC1059, MC1060, and MC1061), April 6, 2005

8.12 ADAMS Accession No. ML16160A414, Final Safety Evaluation Report for Combined Licenses for William States Lee III Nuclear Station Units 1 and 2, August 2016

8.13 ADAMS Accession No. ML17188A387, Brunswick Steam Electric Plant, Units 1 and 2; Shearon Harris Nuclear Power Plant, Unit 1; H.B. Robinson Steam Electric Plant Unit No. 2; and Oconee Nuclear Station, Units 1, 2 and 3 – Issuance of Amendments to Consolidate Emergency Operations Facilities and Associated Emergency Plan Changes (CAC Nos. MF7650, MF7651, MF7652, MF7653, MF7654, MF7655, MF7656, MF7657, MF7658, MF7659, and MF7660), August 21, 2017

8.14 ADAMS Accession No. ML19165A247, Calvert Cliffs Nuclear Power Plant, Units 1 and 2 – Issuance of Amendment Nos. 330 and 308, Re: Relocation and Consolidation of the Emergency Operations Facility and Joint Information Center for the Calvert Cliffs Nuclear Power Plant (EPID L-2018-LLA-0241), August 26, 2019

8.15 ADAMS Accession No. ML18183A073, Joseph M. Farley Nuclear Plant, Units 1 and 2: Edwin I. Hatch Nuclear Plant, Units 1 and 2, and Vogtle Electric Generating Plant, Units 1, 2, 3 and 4; Issuance of Amendments Regarding the Relocation of the Emergency Operations Facility (CAC Nos. MG0188, MG0189, MG0190, MG0191, MG0192, MG0193, MG0194, and MG0195; EPID L-2017-LLA-0293), July 26, 2018

8.16 ADMAS Accession Nos. ML12240A1890 and ML12269A263, River Bend Station, Unit 1 – Issuance of Amendment Related to the Relocation of the Backup Emergency Operations Facility (TAC No. ME7181), September 24, 2012, with correction October 9, 2012

8.17 ADMAS Accession No. ML20004E346, NUREG-0717, Safety Evaluation Report related to the operation of Virgil C. Summer Nuclear Station, Unit 1 – Supplement 2, May 1981

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8.19 ADAMS Accession No. ML20076L733, NRC Letter to South Carolina Electric and Gas Company, Subject: Docket No. 50-395, August 5, 1983

8.20 Building Officials Code Administrators National Building Code, 1981

8.21 ADAMS Accession No. 6822946, NUREG-1228, Source Term Estimation During Incident Response to Severe Nuclear Power Plant Accidents, October 1988

8.22 ADAMS Accession No. ML091980341, NUREG/BR-0150 Vol. 1, Rev. 4, “RTM-96 Response Technical Manual”, March 1996

8.23 ADAMS Accession No. ML051400209, NUREG-0737, Clarification of TMI Action Plan Requirements, November 1980

8.24 ADAMS Accession No. ML10256009, NUREG-0737, Clarification of TMI Action Plan Requirements, Supplement No. 1, January 1983

8.25 National Academy document, ACAD 02-001, The Objectives and Criteria for Accreditation of Training in the Nuclear Power Industry

8.26 ADAMS Accession No. ML102560007, NUREG-0899, Guidelines for the Preparation of Emergency Operating Procedures, August 1982

8.27 ADAMS Accession No. ML111751698, NEI 10-05, Assessment of On-Shift Emergency Response Organization Staffing and Capabilities, June 2011

8.28 ADAMS Accession No. ML080450149, NEI 99-01, Rev. 5, Methodology for Development of Emergency Action Levels, February 2008

8.29 ADAMS Accession No. ML12326A805, NEI 99-01, Rev. 6, Development of Emergency Action Levels for Non-passive Reactors, November 2012

8.30 ADAMS Accession No. ML16005A625, NEI 12-06, Diverse and Flexible Coping Strategies (FLEX) Implementation Guide, Rev. 2, December 2015

8.31 ADAMS Accession No. ML12125A412, NEI 12-01, Guideline for Assessing Beyond Design Basis Accident Response Staffing and Communications Capabilities, Rev. 0, May 2012

8.32 INPO 90-003, Guidelines for the Training and Qualification of Shift Technical Advisors

8.33 ADAMS Accession No. ML15356A842, ACAD 14-002, National Academy for Nuclear Training, Guidelines for Shift Manager Selection, Training and Qualification of Shift Technical Advisors, August 2014

8.34 VCSNS FLEX Validation Technical Report, TR00080-007: Reference 50 in ADAMS Accession No. ML16307A390, VCSNS Report of Full Compliance and Final Integrated Plan, October 31, 2016, and in reference section of ML18100A270, NRC Team Inspection Report 05000395/2018011, April 10, 2018

8.35 ADAMS Accession No. ML12054A735, NRC Order Number EA-12-049, Issuance of Order to Modify Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events, March 12, 2012

8.36 FEMA's National Flood Hazard Layer (NFHL) Viewer (arcgis.com)

8.37 ADAMS Accession No. ML22357A100, Safety Evaluation Report, Monticello Nuclear Generating Plant and Prairie Island Nuclear Generating Plant, Units 1 and 2 – Issuance of Amendments Re: Standard Emergency Plan and Consolidated Emergency Operations Facility (EPID L-2021-LLA-0210), March 31, 2023