ATTACHMENT 5

PROPOSED SPS EMERGENCY PLAN CHANGES

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

Dominion®

Emergency Plan

Title: Surry Power Station Emergency Plan

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

Revision Summary:

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

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

Items 1-6 authorized by License Amendment ###/### and associated NRC SER (Reference Incoming Serial ##-###, dated #/#/####.

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

Approvals on File

SURRY POWER STATION

EMERGENCY PLAN

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SECTION 1

DEFINITIONS

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1.0	Definitions	1.2
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1.0 Definitions

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

  Notification of Unusual Event

  Alert

  Site Area Emergency

  General Emergency
- Emergency Plan Implementing Procedures (EPIPs) - Emergency response procedures that implement the Emergency Plan.

- Emergency Planning Zones (EPZs)
- Plume Exposure Pathway EPZ - An area delineated by an approximate ten-mile radius circle around the Surry Power Station.
- Ingestion Exposure Pathway EPZ - An area delineated by an approximate fifty-mile radius circle around the Surry Power Station with the potential of internal exposure from the ingestion of radioactive material through the food pathway.
- Emergency Response Facility (ERF) - Emergency facilities include the Control Room, Technical Support Center, Operational Support Center, Corporate Emergency Response Center, and Joint Information Center.
- Exercise - A test of the response capabilities of the emergency organization that permits the evaluation of training and response to a given situation. Exercises are conducted in accordance with pre-planned scenarios with defined objectives.
- General Emergency - Events are in process or have occurred which involve actual or imminent substantial core degradation or melting with potential for loss of containment integrity or HOSTILE ACTION that results in an actual loss of physical control of the facility. Releases can be reasonably expected to exceed Environmental Protection Agency Protective Action Guideline exposure levels offsite for more than the immediate site area.
- Hostile Action – An act toward a nuclear power plant or its personnel that includes the use of violent force to destroy equipment, takes hostages, and/or intimidates the licensee to achieve an end. This includes attack by air, land, or water using guns, explosives, projectiles, vehicles, or other devices used to deliver destructive force. Other acts that satisfy the overall intent may be included. Hostile Action should not be construed to include acts of civil disobedience or felonious acts that are not part of a concerted attack on the nuclear power plant. Non-terrorism-based EALs should be used to address such activities, (e.g., violent acts between individuals in the owner controlled area.)
- Hostile Force – One or more individuals who are engaged in a determined assault, overtly or by stealth and deception, equipped with suitable weapons capable of killing, maiming, or causing destruction.
- Interim - A temporary or provisional emergency response position or facility which is augmented or transferred as resources become available.
- Joint Information Center (JIC) - Designated facility from which official information concerning an emergency is provided to the media. The JIC is located at the Virginia State Police Administrative Headquarters in Chesterfield, Virginia.
- Local Communities - This term shall be used to denote the counties of Surry, Isle of Wight, York and James City and the cities of Williamsburg and Newport News located in the approximate ten (10) mile Emergency Planning Zone.

- Local Media Center (LMC) - This facility provides a near site location for official media releases. The LMC is in the Surry Nuclear Information Center.
- Nearsite - Within the Site Boundary, but beyond Protected Area.
- Notification of Unusual Event - Events are in process or have occurred which indicate a potential degradation of the level of safety of the plant or indicate a security threat to facility protection has been initiated. No releases of radioactive material requiring offsite response or monitoring are expected unless further degradation of safety systems occurs.
- Offsite - Beyond the Site Boundary.
- Onsite - The Protected Area (area surrounded by security fence) and Switchyard.
- Operational Support Center (OSC) - An assembly area that serves as the staging location for Damage Control Teams, the Fire Brigade, the First Aid Team, and the Search and Rescue Team.
- Primary Sector - The 22 1/2° sector which bounds the existing wind direction.
- Projected Dose - An estimated radioactive dose which affected population groups could potentially receive if no protective actions are taken.
- Protected Area - An area encompassed by physical barriers and to which access is controlled. For the purposes of this plan, the Protected Area refers to the designated security area around the reactor and turbine buildings.
- Protective Action Guides (PAGs) - The projected dose to individuals in the general population which warrants taking protective actions.
- Protective Actions - Those emergency measures taken before or after an uncontrolled release of radioactive material has occurred for the purpose of preventing or minimizing radiological exposures.
- Recovery Actions - Those actions taken after the emergency to restore the station as nearly as possible to its pre-emergency condition.
- Rem (Roentgen Equivalent Man) - A unit of radiation dose that relates exposure to the biological effects of the exposure (absorbed exposure or dose). A unit related to the rem is the millirem (mrem). 1 mrem = 1/1000 rem.
- Restricted Area - Any area where access is controlled for the purpose of radiation protection.
- Site Area Emergency - Events are in process or have occurred which involve an actual or likely major failures of plant functions needed for protection of the public or HOSTILE ACTION that results in intentional damage or malicious acts; (1) toward site personnel or equipment that could lead to the likely failure of or; (2) that prevents effective access to equipment needed for the protection of the public. Any releases are not expected to result in exposure levels which exceed Environmental Protection Agency Protective Action Guideline exposure levels beyond the site boundary.
- Site Boundary - The company-owned area within 1650 feet of Surry Unit 1 containment.
- Semi-annual - Occurring once during each of the first and last six months of the calendar year.

- Station Emergency Manager (SEM) - Designated onsite individual having the responsibility and authority for implementing the Emergency Plan.
- Technical Support Center (TSC) - A facility located adjacent to the Unit 1 Control Room which will be the central control center for the onsite emergency response organization after shift augmentation.
- Thyroid Committed Dose Equivalent (CDE) - Radiation exposure to the thyroid through inhalation or ingestion of radioactive material assuming a 50 year exposure period from uptake.
- Total Effective Dose Equivalent (TEDE) - The sum of external and internal dose.

1.1 Acronyms and Abbreviations

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

EMD	-	Emergency Maintenance Director
ENS	-	Emergency Notification System (NRC Communications System)
EOC	-	Emergency Operations Center
EOD	-	Emergency Operations Director
EOF	-	Emergency Operations Facility
EPA	-	Environmental Protection Agency
EPC	-	Emergency Procedures Coordinator
EPIP(s)	-	Emergency Plan Implementing Procedures
EPZs	-	Emergency Planning Zones
ERDS	-	Emergency Response Data System
ERF	-	Emergency Response Facility
ERGs	-	Emergency Response Guidelines
ERO	-	Emergency Response Organization
etc.	-	et cetera
ETD	-	Emergency Technical Director
EWS	-	Early Warning System
F	-	Fahrenheit
FEMA	-	Federal Emergency Management Agency
FRMAC	-	Federal Radiological Monitoring and Assessment Center
FSRC	-	Facility Safety Review Committee
Ft	-	Feet
GM	-	Geiger-Mueller
GOV'T.	-	Government
GPM (gpm)	-	Gallons per minute
HP	-	Health Physics
HPN	-	Health Physics Network (NRC Communications System)
hrs.	-	Hours
HRSS	-	High Radiation Sampling System
HSD	-	Hot Shutdown
I	-	Iodine
i.e.	-	That is [From Latin id est]
IAW	-	In accordance with
IEIN	-	Inspection and Enforcement Information Notice (NRC)
Int'l	-	International
I/O	-	Input/Output
JDG	-	Job Demonstration Guide
JIC	-	Joint Information Center
KI	-	Potassium Iodide

Kr	-	Krypton
LAN	-	Local Area Network
LCO	-	License Condition of Operation
LMC	-	Local Media Center
LOCA	-	Loss of Coolant Accident
LW	-	Liquid Waste
MCL	-	Management Counterpart Link
MCVH	-	Medical College of Virginia Hospital
MIDAS	-	Meteorological Information and Dose Assessment System
ml	-	milliliter
mph	-	miles per hour
mR/hr	-	Millirem per hour
MSL	-	Mean Sea Level
MWe	-	Megawatt electric
MWt	-	Megawatt thermal
N/A	-	Not applicable
NEP	-	Nuclear Emergency Preparedness
NRC	-	Nuclear Regulatory Commission
NSSS	-	Nuclear Steam Supply System
NUREG	-	NRC Report
OBE	-	Operating Basis Earthquake
ODCM	-	Offsite Dose Calculation Manual
OPS	-	Operations
OPX	-	Off-Premises exchange (Communications System)
OSC	-	Operational Support Center
PAGs	-	Protective Action Guides
PAR	-	Protective Action Recommendation
PBX	-	Private Branch exchange (Communications System)
PCS	-	Plant Computer System
Pk.	-	Package
PMCL	-	Protective Measures Counterpart Link
PORV	-	Power Operated Relief Valve
Pr	-	Pair
PSIA	-	Pounds per square inch absolute
PSIG	-	Pounds per square inch gauge
RAA	-	Remote Assembly Area
RAC	-	Radiological Assessment Coordinator
RAD/Rad/rad	-	Radiological Assessment Director, radiation or radiological depending on context

RCP	-	Reactor Coolant Pump
RCS	-	Reactor Coolant System
Rem	-	Roentgen Equivalent Man
R/hr	-	Roentgen per hour
RHR	-	Residual Heat Removal
RERP	-	Radiological Emergency Response Plan
RERT	-	Radiological Emergency Response Team
RIC	-	Richmond International Concourse (Airport)
RM, RMS	-	Radiation Monitoring System
RO	-	Reactor Operator
RPS	-	Radiation Protection Supervisor
RSCL	-	Reactor Safety Counterpart Link
RSD	-	Refueling Shutdown
Ru	-	Ruthenium
RVLIS	-	Reactor Vessel Level Indication System
Rx	-	Reactor
SCBA	-	Self contained breathing apparatus
SEM	-	Station Emergency Manager
SEP	-	Surry Emergency Plan
SI	-	Safety Injection
SNIC	-	Surry Nuclear Information Center
SONET	-	Synchronous Optical Network
SPDS	-	Safety Parameter Display System
SPS	-	Surry Power Station
SRD	-	Self Reading Dosimeter
SRO	-	Senior Reactor Operator
STA	-	Shift Technical Advisor
SW	-	Service Water system
Te	-	Tellurium
T.S.	-	Technical Specification
TEDE	-	Total Effective Dose Equivalent
TLD	-	Thermoluminescent Dosimeter
TSC	-	Technical Support Center
μCi	-	Micro (μ) Curie
UFSAR	-	Updated Final Safety Analysis Report
UHF	-	Ultrahigh frequency (radio)
U.S.	-	United States
VCU	-	Virginia Commonwealth University

VCUMC	-	Virginia Commonwealth University Medical Center
VDEM	-	Virginia Department of Emergency Management
VG	-	Vents - Gaseous
VPAP	-	Virginia Power Administrative Procedure
WAN	-	Wide Area Network
Xe	-	Xenon
X/Q	-	Chi/Q; Dilution and dispersion factor, sec/m^3

SURRY POWER STATION

EMERGENCY PLAN

SECTION 2

SCOPE AND APPLICABILITY

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2.1	Emergency Plan	2.2

2.0 Site Specifics

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

The units are located in Surry County, Virginia, on a point of land called Gravel Neck, which juts out into the James River from the South. The 840 acre site is located approximately 25 miles NW of Hampton, Virginia; and, approximately 7.0 miles south of Williamsburg, Virginia. Cooling water is obtained from the James River. An Independent Spent Fuel Storage Installation (ISFSI) is located on the plant site.

The city of Williamsburg, as well as portions of Surry, Isle of Wight, James City and York counties and the city of Newport News, lie within 10 miles of the station. Newport News, Williamsburg and the counties of James City and York are dominated by growing population centers and large transient tourist trade. The counties of Surry and Isle of Wight, which surround the site on the south side of the James River, are predominately rural and characterized by farmland, wooded land and marshy wet lands. Surry County has the largest agricultural area within the 10 mile zone, covering over 9000 acres of major cropland. Peanuts, corn and soybeans are the principal crops of the area. Two (2) dairy farms are in this zone, located close to Bacon's Castle.

2.1 Emergency Plan

The Surry Power Station Emergency Plan describes the organization, facilities, emergency response measures, and functional interfaces with offsite agencies which can be used to respond to a broad range of defined emergencies. The organization has well defined responsibilities and specific authorities which provide for effective control and coordination of the emergency response, both onsite and offsite.

The organization is augmented, as required, to address situations with the most serious potential consequences.

The Plan is formulated for compatibility with existing Local, State, and Federal organizations which have responsibilities to render assistance should the need exist. Coordinating the response effort between the company and offsite agencies supports mutual goals of protecting public health and safety and of minimizing damage to both public and private properties.

The basic purposes of the Plan are as follows:

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

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

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

SURRY POWER STATION

EMERGENCY PLAN

SECTION 3

SUMMARY OF EMERGENCY PLAN

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3.0	Summary of Emergency Plan	3.2

3.0 Summary of Emergency Plan

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

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

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

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

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

SURRY POWER STATION

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SECTION 4

EMERGENCY CONDITIONS

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4.0 Emergency Conditions

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

4.1 Spectrum of Postulated Accidents

The spectrum of emergencies peculiar to nuclear power stations range from accidents with minor implications on health and safety to the postulation of major occurrences resulting in the release of significant quantities of radioactive material. Examples of minor accidents that may occur include small spills of radioactive liquid, unplanned or uncontrolled releases of small amounts of radioactive material, or equipment malfunctions.

Major occurrences, though not expected to take place, have been postulated for planning and design purposes. These events, further described in Surry Power Station UFSAR, Section 14, are as follows:

a. Major reactor coolant pipe ruptures (LOCA).
b. Major secondary system pipe rupture (steam line break).
c. Steam generator tube rupture.
d. Fuel handling accidents.
e. Rupture of a control rod drive mechanism housing (rod cluster control assembly ejection).

Of the accidents listed above and analyzed in the UFSAR, three are considered to release significant amounts of radioactivity. These are the loss of coolant accident, the steam generator tube rupture and the fuel handling accident. The nature of these three accidents is such that a radiological safety analysis can produce results that vary in terms of consequences. This analysis depends on assumptions used concerning such items as the status of primary coolant radioactivity content, meteorological conditions, or performance of station safety systems. The Emergency Plan and implementing procedures are written in anticipation of having to contend with these worst case consequences.

4.2 Emergency Classification System

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

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

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

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

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

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

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

TABLE 4.1
INITIATING CONDITIONS: NOTIFICATION OF UNUSUAL EVENT

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

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

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

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

EU1 Damage to a loaded cask confinement boundary

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

FU1 Any loss or any potential loss of Containment

Recognition Category H – Hazards

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

Recognition Category R – Abnormal Radiological Release / Radiological Effluent

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

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

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

TABLE 4.2
INITIATING CONDITIONS: ALERT

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

CA1 Loss of all offsite power and loss of all onsite AC power to emergency buses
CA2 Loss of RCS inventory
CA3 Inability to maintain plant in cold shutdown with irradiated fuel in the Reactor Vessel

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

FA1 Any loss or any potential loss of either Fuel Clad or RCS

Recognition Category H – Hazards

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

Recognition Category R – Abnormal Radiological Release / Radiological Effluent

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

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

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

TABLE 4.3
INITIATING CONDITIONS: SITE AREA EMERGENCY

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

CS1 None
CS2 Loss of Reactor Vessel inventory affecting core decay heat removal capability

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

FS1 Loss or potential loss of any two barriers

Recognition Category H – Hazards

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

Recognition Category R – Abnormal Radiological Release / Radiological Effluent

RS1 Offsite dose resulting from an actual or imminent release of gaseous radioactivity exceeds 100 mRem TEDE or 500 mRem thyroid CDE for the actual or projected duration of the release

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

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

TABLE 4.4
INITIATING CONDITIONS: GENERAL EMERGENCY

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

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

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

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

Recognition Category H – Hazards

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

Recognition Category R – Abnormal Radiological Release / Radiological Effluent

RG1 Offsite dose resulting from an actual or imminent release of gaseous radioactivity exceeds 1000 mRem TEDE or 5000 mRem thyroid CDE for the actual or projected duration of the release using actual meteorology

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

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

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

4.3 State and Local Government Classification System

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

The projected radiation doses and response levels are:

Projected Radiation Dose	Radiological Response Level
Exceeds 1.0 Rem TEDE exposure or exceeds 5.0 Rem Thyroid CDE.	GENERAL EMERGENCY
0.1 Rem to 1.0 Rem TEDE exposure or 0.5 Rem to 5.0 Rem Thyroid CDE.	SITE AREA EMERGENCY

A Site Area Emergency or General Emergency can also be declared for reasons other than radiological releases.

COVEOP and local government's protective actions are based on projected doses recommended in Table 2.1 of EPA-400-R-92-001, Manual of Protective Action Guides and Protective Actions for Nuclear Incidents.

4.4 Requirements for Written Summaries of Emergency Events

A written summary is provided to the VDEM following activation of the Surry Emergency Plan. The schedule for submitting the written summary of a Notification of Unusual Event is within 72 hours of its declaration; for any other classification, the schedule for submitting the written summary is within 8 hours of its termination. This schedule was established with the concurrence of the VDEM. (Reference Letter Serial No. 84-302 dated 5-31-84.)

SURRY POWER STATION

EMERGENCY PLAN

SECTION 5

ORGANIZATIONAL CONTROL OF EMERGENCIES

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5.0 Organizational Control of Emergencies

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

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

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

5.1 Normal Station Organization

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

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

5.2 Emergency Response Organization

The first line of control in an emergency at Surry Power Station lies with the onshift personnel. The shift complement is staffed with personnel qualified to take the initial actions necessary to respond to an emergency. The organizational relationship of the on-shift emergency organization prior to augmentation is shown in Figure 5.1. Also, personnel assigned to the Search and Rescue Team, the First Aid Team, and the Fire Brigade may be assigned other functions until their services are required. The capabilities of the assigned onshift personnel are adequate to assess the condition of the affected unit(s) and take initial mitigative actions in accordance with emergency operating procedures including corrective actions

necessary to implement procedures consistent with operations personnel training. Additionally onshift personnel make notifications to off-site authorities, and initiate a callout of supplementary emergency response personnel as required. The EPIPs are used procedurally to control these actions.

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

Should the Station Emergency Manager deem that additional emergency response personnel are needed or the emergency classification is upgraded to Alert or higher, Station Security will commence callout of supplementary emergency response personnel. Table 5.1 represents the minimum number of personnel that are required to augment emergency operations and the estimated response times of these personnel. The composition of the emergency response personnel assigned on shift and those who make up the augmentation crews are consistent with the staffing level goals promulgated by Supplement 1 to NUREG 0737. Sufficient training has been provided for the on-shift personnel to ensure that the response actions needed to bring the affected unit(s) to a stable condition in preparation for the longer term recovery will be taken.

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

5.2.1 Station Emergency Position and Team Descriptions

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

5.2.1.1 Station Emergency Manager

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

1) Classifying the emergency,

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

Items 1 through 4 above may not be delegated. The CERC Technical Support Manager will be responsible for notifying the State and local agencies of the emergency status and for recommending offsite protective measures to the State.

5.2.1.2 Emergency Communicators

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

5.2.1.3 Emergency Procedures Coordinator

The Emergency Procedures Coordinator (EPC) reports to the SEM in the TSC as part of the augmentation of the onshift emergency organization. The responsibilities of the EPC include:

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

5.2.1.4 Emergency Operations Director

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

5.2.1.5 Emergency Maintenance Director

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

5.2.1.6 Emergency Technical Director

The Emergency Technical Director (ETD) reports to the SEM in the TSC as part of the augmentation of the on-shift emergency organization. He directs the activities of the Technical Support Team.

The ETD will analyze mechanical, electrical, instrumentation and control, hydraulic, thermodynamic, and reactor physics problems, and develop solutions to the problems. He shall provide technical support to the SEM and assist in developing procedures necessary for conducting emergency operations and maintenance.

5.2.1.7 Shift Technical Advisor

The Shift Technical Advisor (STA) will remain in the Control Room to advise the Shift Supervisor or Assistant Shift Supervisor on engineering and accident assessment matters. STA coverage is provided on a 24-hour per day, 7-days per week on-shift basis to enable timely assistance in the Control Room.

5.2.1.8 Emergency Administrative Director

The Emergency Administrative Director (EAD) reports to the SEM in the TSC as part of the augmentation of the on-shift emergency organization. The EAD directs activities of the Administrative Support Team and advises the SEM on emergency first aid, fire protection, security, administrative and logistical support activities. He coordinates the acquisition of equipment, supplies, personnel, and other assistance needed to cope with the emergency. He ensures that the TSC log keeper maintains a chronological record of key events.

5.2.1.9 Radiological Assessment Director

The Radiological Assessment Director (RAD) reports to the SEM in the Technical Support Center after relieving the interim director who was the Senior Health Physics representative onsite at the initiation of the emergency. He directs the activities of the Radiation Protection Supervisor in maintaining the Radiation Protection Program onsite during an emergency. He also directs the activities of the Dose Assessment Team and Offsite Monitoring Teams in determining offsite consequences of radiological releases until control is assumed by the Radiological Assessment Coordinator (RAC) at the CERC.

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

5.2.1.10 Radiation Protection Supervisor

The position of Radiation Protection Supervisor (RPS) will be filled upon augmentation of the on-shift emergency organization. The RPS normally operates from the Station HP Office and reports to the RAD. The RPS directs the activities of the In Plant Monitoring Team, the Sample Analysis Team, the Personnel Monitoring and Decontamination Team, the Onsite (Out of Plant) Monitoring Team, and the Evacuation Monitoring Team. The RPS will also provide radiological support, as needed, to the Fire Brigade, First Aid Team, and the Search and Rescue Team. Additional duties include evaluating onsite radiological conditions, ensuring that appropriate monitoring and sampling are performed, checking the appropriate personnel monitoring is performed and personnel exposures are evaluated, and maintaining dose records. The RPS shall also recommend onsite protective measures to the RAD and provide him with survey results and sample analysis results needed for offsite dose assessment.

5.2.1.11 Operational Support Center Director (OSC Director)

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

5.2.1.12 OSC Support Team

The OSC Support Team operates out of the OSC under the direction of the OSC Director after augmentation of the on-shift emergency organization. The OSC Support Team plans required maintenance evolutions, develops emergency maintenance procedures, arranges for material acquisition, coordinates the efforts of the Damage Control Teams (if activated) and provides logistical and communications support, as necessary.

5.2.1.13 Technical Support Team

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

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

5.2.1.14 Chemistry Team

The Chemistry Team, after augmentation, reports to the RAD and operates from the designated Chemistry Team staging area. The Chemistry Team will conduct liquid and gaseous sampling, and sample analysis, as directed.

5.2.1.15 Administrative Support Team

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

If the emergency is Security related, the Administrative Support Team Leader may report directly to the SEM. In a fire or first aid emergency, the Safety/Loss Prevention representative may report directly to the SEM.

5.2.1.16 Security Team

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

5.2.1.17 Dose Assessment Team

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

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

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

5.2.1.18 Offsite Monitoring Teams

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

5.2.1.19 Evacuation Monitoring Team

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

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

5.2.1.20 In-Plant Monitoring Team

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

5.2.1.21 Sample Analysis Team

The Sample Analysis Team reports to the RPS in the Station HP Office. The team shall analyze samples collected offsite as well as post accident liquid and gaseous samples.

5.2.1.22 Personnel Monitoring and Decontamination Team

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

5.2.1.23 Onsite (Out of Plant) Monitoring Team

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

5.2.1.24 Fire Brigade

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

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

5.2.1.25 First Aid Team

The First Aid Team members reporting to the Station to augment the on-shift First Aid Team will report to the OSC Director in the Operational Support Center until their services are needed. Upon activation, the Team will report to the Administrative Support Team Safety/Loss Prevention representative, the SEM or a designated Emergency Director as needed.

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

The on-shift First Aid Team members with other duties will not report to the OSC, but will remain in their normal duties unless activated to respond to a first aid emergency.

5.2.1.26 Damage Control Team

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

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

5.2.1.27 Search and Rescue Team

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

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

5.2.2 Corporate Emergency Position and Team Descriptions

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

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

5.2.2.1 Corporate Response Manager

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

5.2.2.2 Technical Support Manager

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

5.2.2.3 Resource Manager

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

5.2.2.4 Nuclear News Manager

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

5.2.2.5 Chief Technical Spokesperson

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

5.2.2.6 Executive Liaison

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

5.2.2.7 Emergency Plan Advisor

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

5.2.2.8 Operations Support Coordinator

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

5.2.2.9 Operations Support Team

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

5.2.2.10 Radiological Assessment Coordinator

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

5.2.2.11 Accident Assessment Team

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

5.2.2.12 Resource Team

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

5.2.2.13 News Team

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

5.2.2.14 Joint Information Center Support Team

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

5.3 Augmentation of Emergency Response Organization

The SEM has the authority to request assistance from any organization which he deems necessary to mitigate the conditions causing the emergency. In addition, the SEM may request offsite assistance in fire fighting, rescue services, law enforcement, and medical support prior to augmentation of the onsite emergency organization (see Figure 5.3).

The participating agencies and support services with whom emergency support services have been negotiated are listed in Appendix 10.1 of this Plan.

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

5.3.1 Notification and Response

The emergency response organization (ERO) is notified to augment in the event of an Alert, Site Area Emergency or General Emergency. The following functions may be necessary for emergency mitigation and recovery:

5.3.1.1 Environmental Monitoring

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

5.3.1.2 Logistics Support for Emergency Personnel

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

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

Technical support for recovery and subsequent re-entry would be directed by the Corporate Response Manager. Trained technical personnel are available in the areas of nuclear fuel management, water quality, air quality, Engineering, Health Physics, and Chemistry. Additional technical support would be obtained from North Anna Power Station, A/E, and NSSS vendor. Consulting services would be obtained as necessary.

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

5.3.1.4 Interface with Governmental Authorities

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

5.3.1.5 Release of Information to News Media

News releases shall be coordinated with the External Affairs Department or Public Affairs representative in the Joint Information Center. The Chief Technical Spokesperson is responsible for meeting with the news media. Releases will be coordinated with the appropriate governmental authorities. Briefings can be conducted at the Joint Information Center at the Virginia State Police Administrative Headquarters in Chesterfield, Virginia and, when activated, at the Local Media Center in the Surry Nuclear Information Center (SNIC).

5.3.2 Vendor and Supplemental Personnel Support

Support will be obtained from Stone & Webster (the A/E) and Westinghouse (the NSSS vendor) as needed for emergency and recovery operations. Experienced personnel with in-depth expertise in station design, engineering and construction will be obtained to aid in solving critical technical problems.

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

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

1) University of Virginia, Charlottesville, VA (3 hours)
2) Virginia Department of General Services, Division of Consolidated Laboratory Services, Richmond, VA (75 minutes)
3) Virginia Commonwealth University Medical Center, Richmond, VA (75 minutes)
4) Newport News Shipbuilding & Drydock, Newport News, VA (45 minutes)
5) Norfolk Naval Shipyard, Norfolk, VA (60 minutes)
6) Virginia Department of Health, Office of Radiological Health Mobile Laboratory (75 minutes)
7) College of William and Mary, Williamsburg, VA (75 minutes)

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

5.3.3 Local Services Support

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

The Virginia Commonwealth University Medical Center (VCUMC), has developed an emergency plan designed to provide medical care in the case of a radiation emergency. The MCVH/VCU Radiation

NOTE: Update of this legacy title is beyond the scope of this license amendment request.

Emergency Plan supports the company's nuclear power stations in the case of occupational and/or major accidents, including contaminated personnel. In the event of a need for their support, a call ahead to VCUMC will be made to alert them to activate their emergency plan. A copy of the MCVH/VCU Radiation Emergency Plan is maintained on file by the Nuclear Emergency Preparedness department.

Letters of Agreement in support of the Surry Emergency Plan will be renegotiated once every 2 years. Copies of current agreements are maintained on file by the Nuclear Emergency Preparedness department. Negotiation responsibility lies with the Director Nuclear Emergency Preparedness. Letters of Agreement are limited to Federal, State, local and volunteer organizations.

5.4 Coordination with Participating Government Agencies

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

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

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

The local Sheriff's departments of Surry and Isle of Wight counties also respond to this plan. They perform essentially the same functions as the State Police and coordinate their efforts with that organization.

The Company also maintains liaison and agreement with local Fire Departments and Rescue Squads that will provide assistance, if requested, by the SEM.

In the event of an emergency, the Station will be in communication with the Directors of Emergency Services in the local communities who have the capability of activating their Emergency Operations Centers.

The Station relies upon Surry and Isle of Wight Counties to provide assistance in the event an evacuation from the site requires a remote assembly point or any services the counties are capable of providing to mitigate any results of the emergency.

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

The Station will also maintain close contact with NRC Headquarters and the Region II Offices in Atlanta. This is an important function to ensure that accurate information and assessment of the emergency are available to the Federal Government. As a result of these communications the NRC can best appraise their response to the emergency. In a like manner, the U.S. Department of Energy, Oak Ridge Operations, will provide radiological assistance to the Station in the event of an emergency. The Station will provide the necessary assembly point and information of the emergency. This agency will coordinate all its efforts with the participating Federal, State and local agencies responding to the emergency.

The Station has the responsibility to provide to supporting agencies involved in the recovery of the facility or participating in controlling the emergency the necessary information to permit them to use their resources. In the case of the local communities the Company provides communication, and when needed, training. This training takes the form of participation in drills and exercises by the county and radiological training for members of local volunteer rescue squads and fire departments. Local Police are trained by State agencies. The Company will also arrange drills and exercises on a routine basis to ensure the plan is workable and to gain experience in its implementation. The total effort of all parties involved shall be directed toward minimizing the results of an emergency and working toward the recovery of the facility with the least impact on the population at large.

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

5.4.1 Commonwealth of Virginia Department of Emergency Management (DEM)

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

The State Emergency Operations Center (EOC) is located in Richmond, Virginia. There are local EOCs in each of the local communities. Additionally, the DEM will send appropriate liaison personnel to the CERC upon activation.

5.4.2 Commonwealth of Virginia Department of Health (VDH)

VDH personnel, in coordination with VDEM, provide technical advice and assistance on radiological accident assessment, protective actions, radiological exposure control, and radiological monitoring. (Reference COVEOP for more specific information.) Upon either an Alert or higher classification, VDEM will notify VDH's Office of Radiological Health which will then implement its response procedures. Accident assessment personnel, as part of the Radiological Emergency Response Team (RERT) , will operate from the VEOC. VDH also provides advice and assistance, as required, to Local Health Districts which provide primary health services to their respective areas.

5.4.3 Additional State Agency Support

Additional State organizations having possible responsibilities in a radiological emergency are listed in COVEOP Hazard-Specific Annex #1 – Radiological Emergency Response. Requests for support services from these organizations will be coordinated through the VEOC by the SEM or the CERC Resource Manager.

5.4.4 Surry County

The authority and responsibilities of Surry County presented in the Surry County Radiological Emergency Response Plan (RERP) applies to radiological emergencies within the county caused by events at the Surry Power Station. The plan:

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

Upon notification from the SEM, the County Sheriff's Office will notify the County Coordinator of Emergency Services, or their representative, who shall:

a. Check the notification from Surry Power Station
b. Initiate the key county official's alert system
c. Initiate public warning procedures, as ordered by appropriate State authority
d. Commence evacuation of people from the affected area when directed by the appropriate State authority.

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

Once initial notifications are complete, the SEM or Technical Support Manager provides periodic status reports to the County Coordinator of Emergency Services. These reports include any changes in

status or emergency classification. The County Sheriff's Office will serve as the local point for communications prior to the establishment of the County EOC.

The County Office of Emergency Services with its EOC is located in the Surry County Government Center. The Surry County Radiological Emergency Response Functional Organization is shown in the Surry County RERP.

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

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

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

5.4.6 Counties and Cities Within the Fifty Mile Ingestion Pathway Zone

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

The communities within the fifty mile EPZ are listed in Figure 5.5a and depicted in Figure 5.5b. In the event of an emergency, notification of and interaction with these entities is a function of the VEOC.

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

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

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

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

The SEM or Corporate Response Manager may request FRMAC assistance directly or through the NRC (Federal Coordinating Agency). The Company will provide designated facilities for the NRC (Federal Coordinating Agency) in the CERC. There are three commercial air terminals in close proximity (i.e., within

75 minutes driving time) to Surry Power Station: Newport News/Williamsburg International Airport in Newport News, Virginia; Richmond International Airport (RIC) in Richmond, Virginia; and Norfolk International Airport in Norfolk, Virginia. It is estimated that a FRMAC Advance Party could be expected at the site within 6 to 14 hours following the order to deploy.

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

MINIMUM SHIFT MANNING REQUIREMENTS
TABLE 5.1

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

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

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

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

NOTES:

a This coverage is provided by the Shift Manager until relieved.

b Communicator taken from the complement of reactor operators/auxiliary operators on shift.

c This coverage is provided by the Senior RP representative on site until relieved.

d Station Technical Specifications allowances for reduced staffing with both units in cold shutdown condition apply.

e The candidates for this position are limited to qualified STAs, SROs, former STAs, or former SROs.

f The on-duty Shift Technical Advisor performs the responsibilities of this position prior to augmentation.

g Mechanical and electrical maintenance personnel are normally onsite on a 16 hour per day, 7 day per week basis. This coverage may be provided by personnel who are assigned to other functions during the period that mechanical and electrical maintenance personnel are not onsite (not counted in total).

h This personnel monitoring team member is qualified to provide RP job coverage duties.

i The Fire Brigade consists of auxiliary operators on shift and other qualified personnel.

j This coverage is provided by personnel who may be assigned other functions (not counted in total).

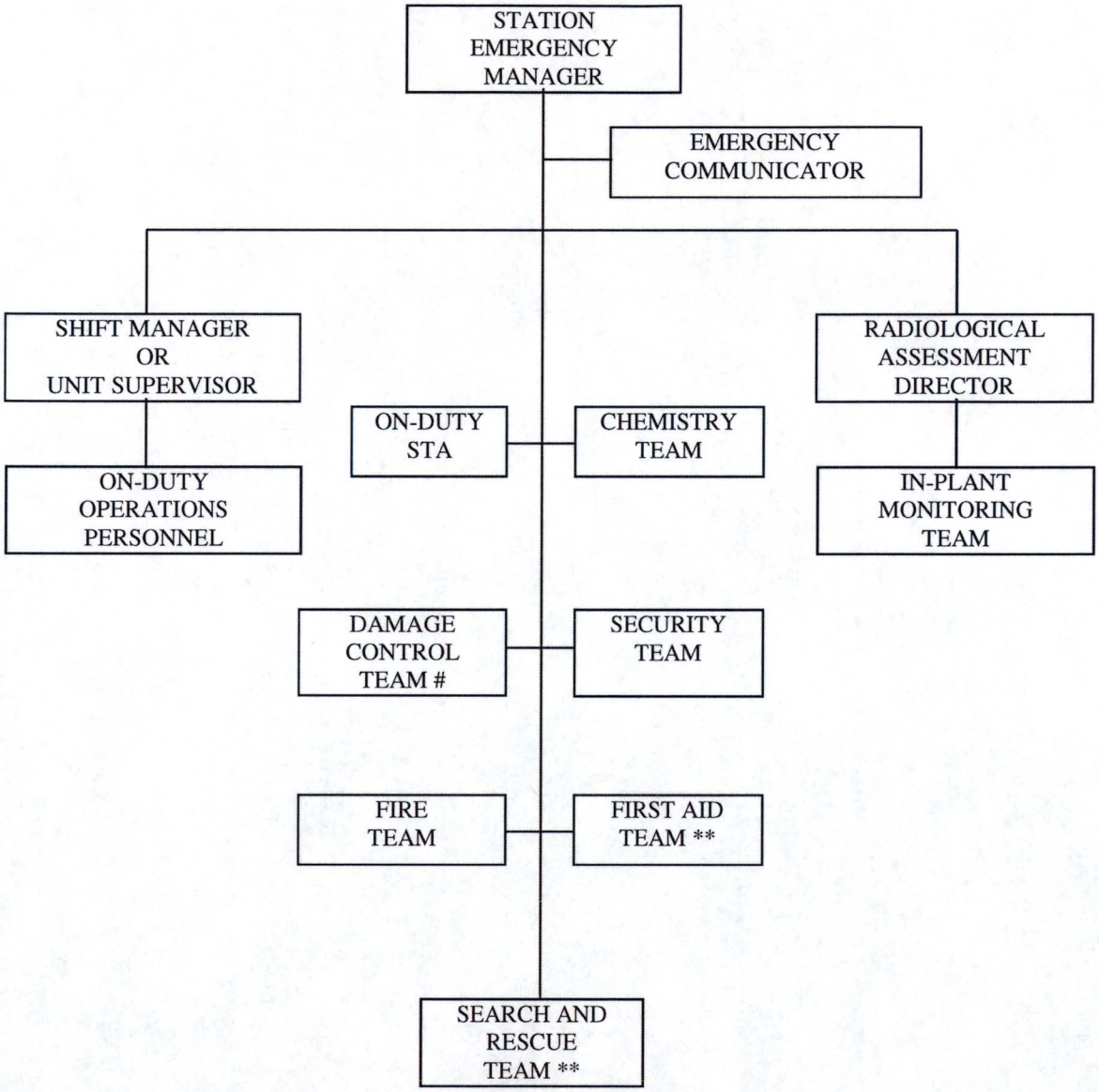
EMERGENCY AND RECOVERY CORPORATE RESPONSE REQUIRED
FOR NUCLEAR STATION EMERGENCIES
ALERT (OR HIGHER) EMERGENCY CLASSIFICATION

TABLE 5.2

Major Functional Area (Emergency Position Title)	Major Task	Available in:
Management of Corporate Emergency Response Center (Corporate Response Manager)	To coordinate the Company's response to emergency with Federal, State and local authorities	75 min.
Health Physics & Chemistry (Radiological Assessment Coordinator)	Report to Technical Support Manager to conduct radiological assessment	75 min.
Technical Support (Technical Support Manager)	Reports to the Corporate Response Manager to provide technical and evaluation support.	75 min.
Plan/Design/Construction (Resource Manager)	Reports to the Corporate Response Manager to provide engineering, technical and vendor support in areas dealing with construction or design changes.	75 min.
News Center Interface (Chief Technical Spokesperson)	Reports to the Corporate Response Manager to become the Company Spokesperson for statements to the news media.	75 min.

STATION EMERGENCY ORGANIZATION PRIOR TO AUGMENTATION *

FIGURE 5.1



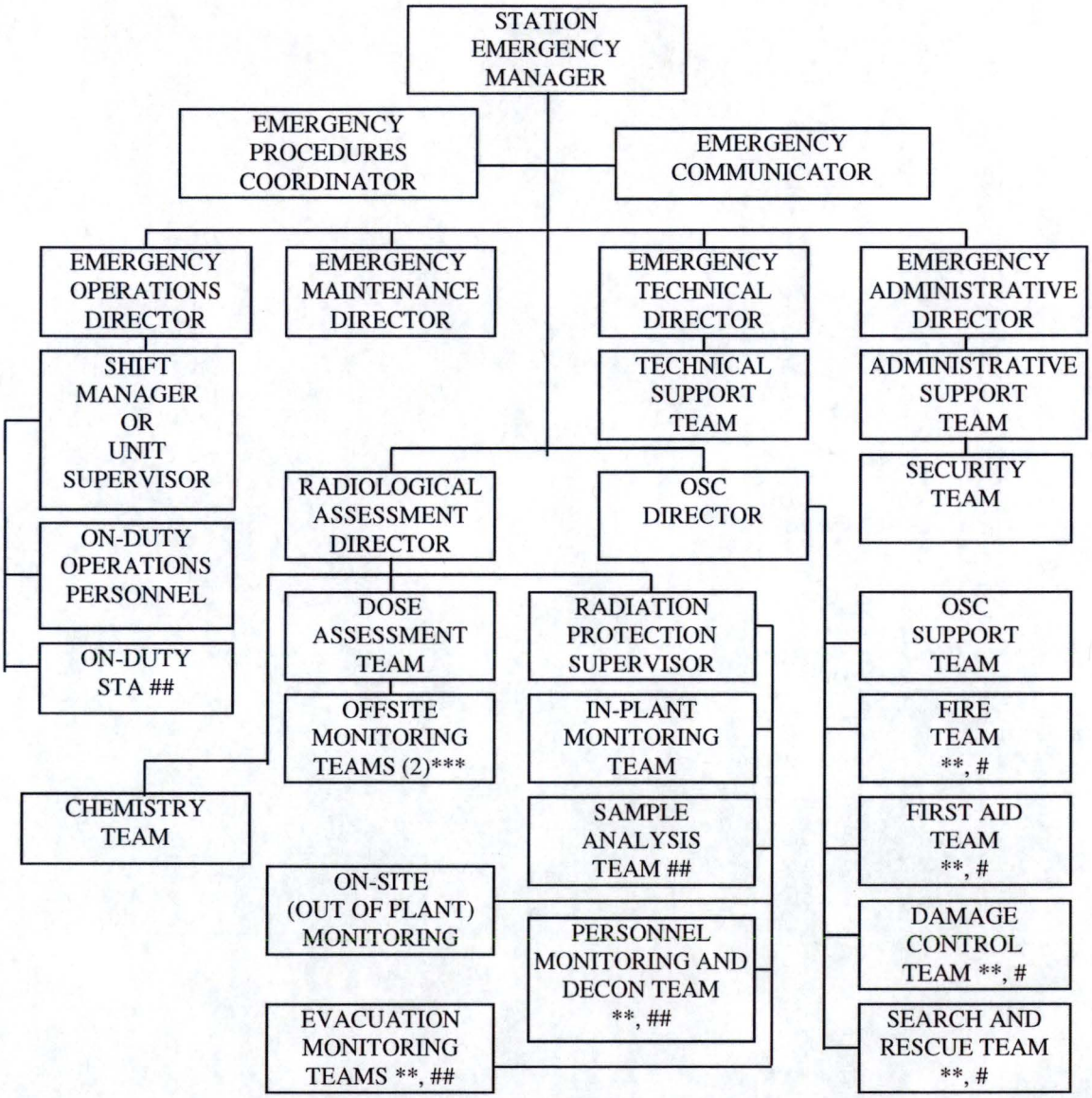
* Augmented for Alert, Site Area Emergency and General Emergency.

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

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

STATION EMERGENCY ORGANIZATION FOLLOWING AUGMENTATION *

FIGURE 5.2



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

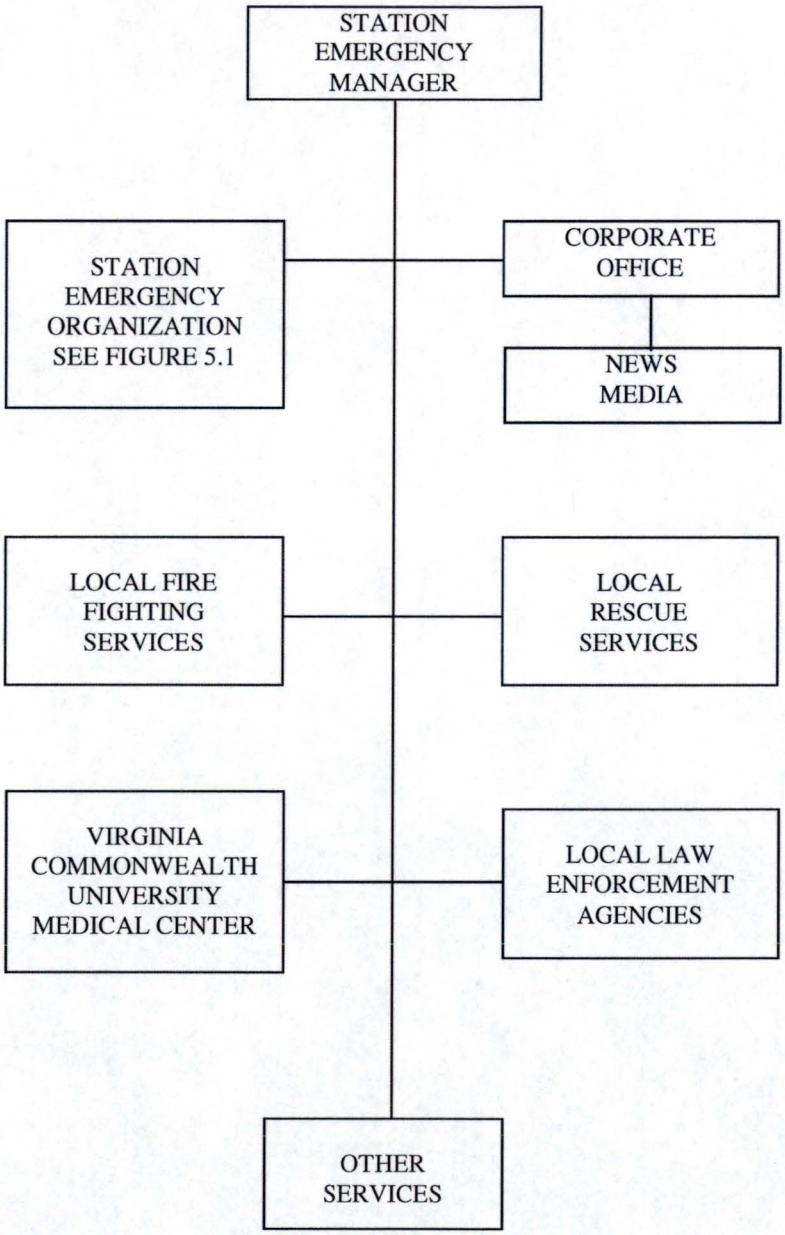
** This team will be activated only if circumstances require this function to be performed.

*** Transferred to CERC when facility activated.

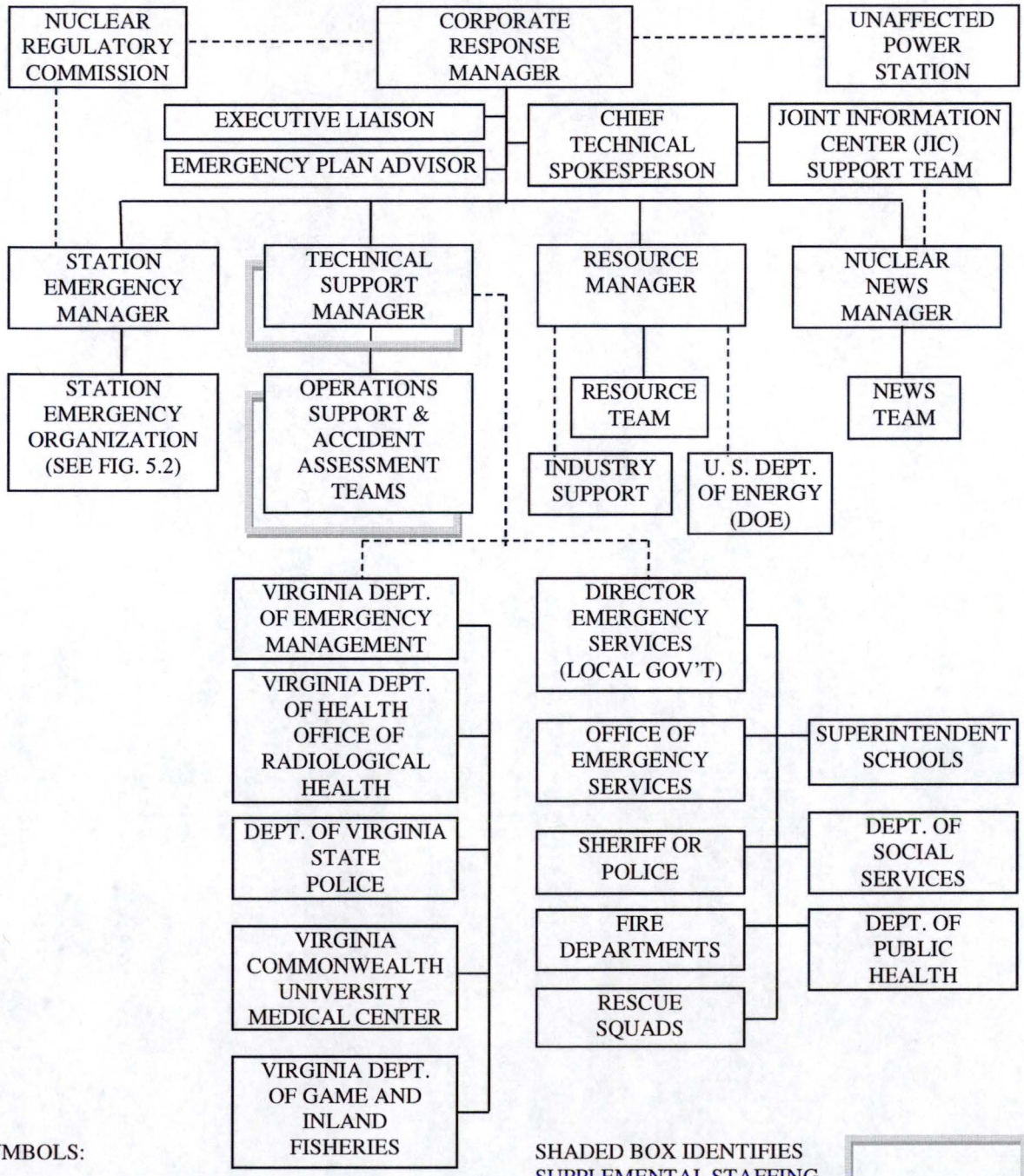
\# Normal reporting structure is shown. If the team is activated, control of the team will transfer to the SEM or appropriate Emergency Director.

\#\# These teams may consist of only one individual.

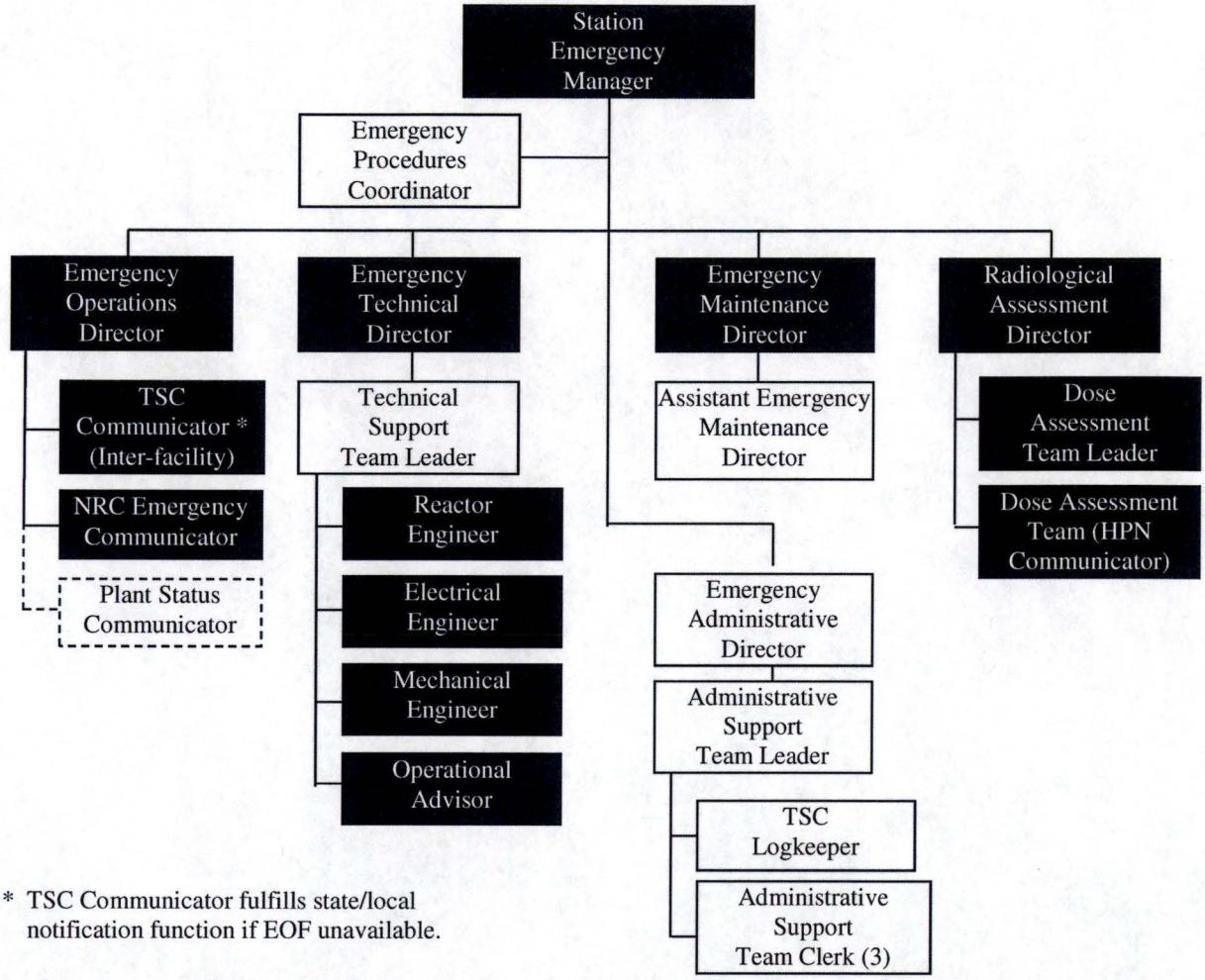
STATION TO SUPPORT GROUP INTERFACE
PRIOR TO AUGMENTATION OF THE ONSITE EMERGENCY ORGANIZATION
FIGURE 5.3



STATION TO SUPPORT GROUP INTERFACE
FOLLOWING CERC ACTIVATION
FIGURE 5.4



TECHNICAL SUPPORT CENTER ORGANIZATION
FIGURE 5.5.a



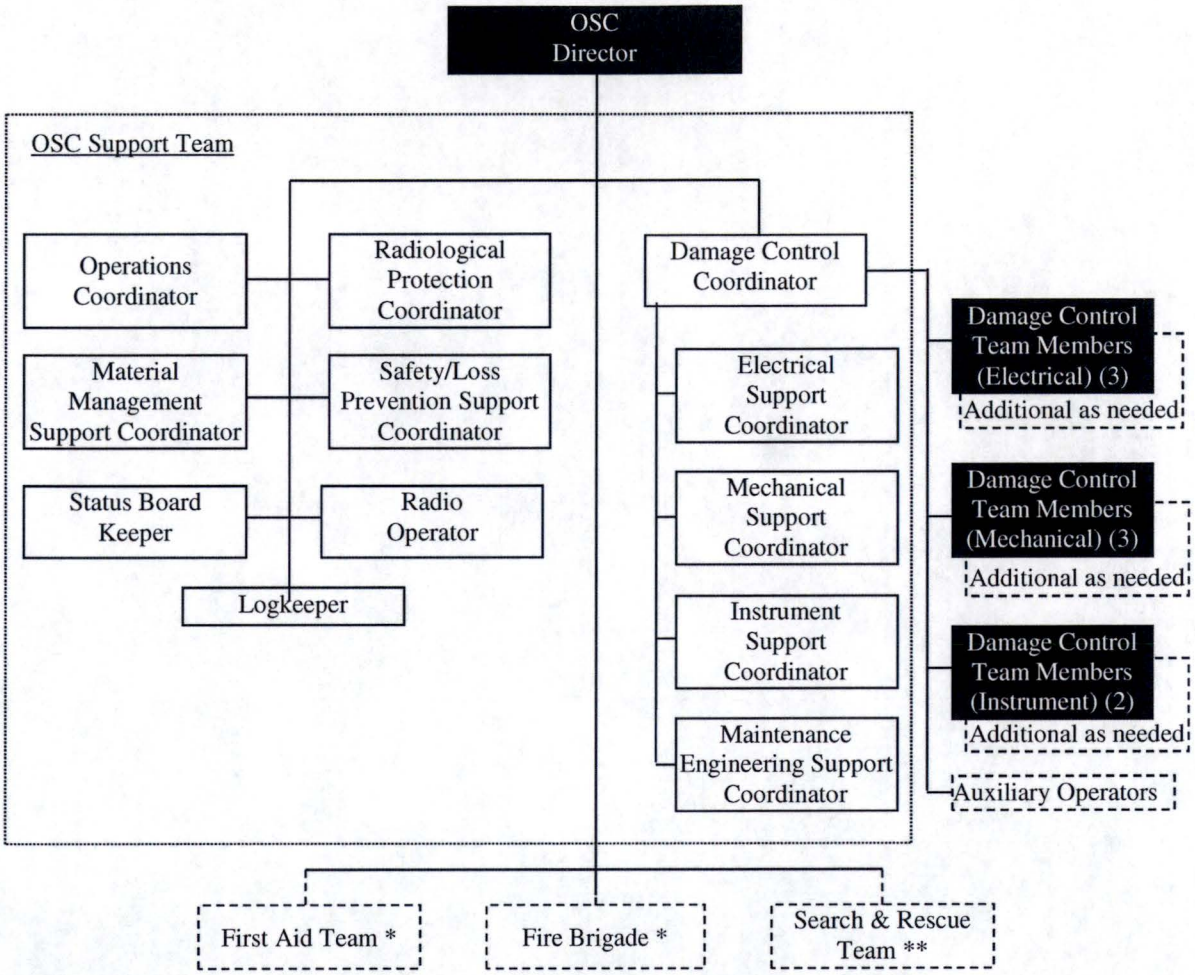
* TSC Communicator fulfills state/local notification function if EOF unavailable.

■ Indicates positions necessary for facility activation.

□ Indicates fully augmented organization positions.

⬚ Indicates position established if needed.

OPERATIONAL SUPPORT CENTER ORGANIZATION
FIGURE 5.5.b



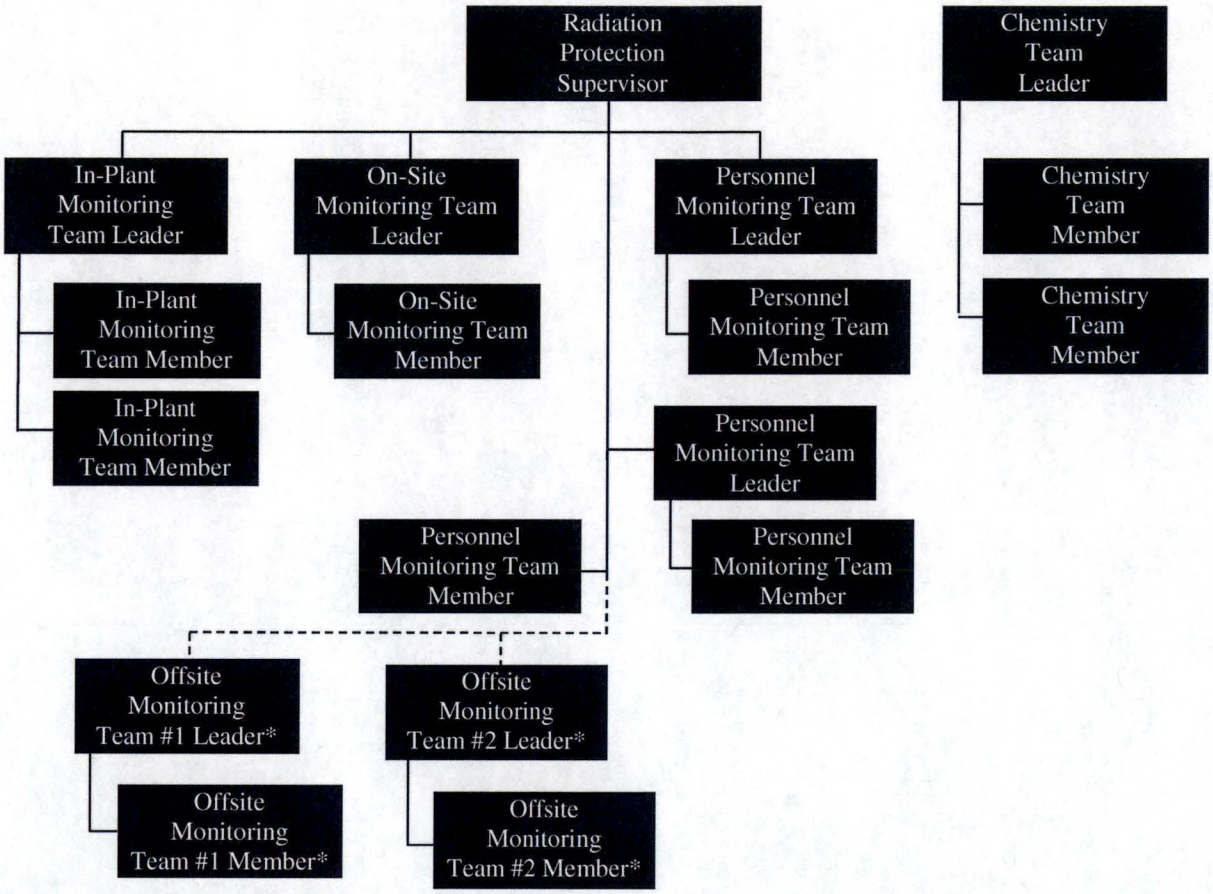
* First Aid Team and Fire Brigade functions are addressed by on-shift personnel.
Additional qualified personnel who report to the OSC may be designated for these functions.
** Search & Rescue Team formed from Fire Brigade/First Aid Team/Security staff as appropriate.

■ Indicates positions necessary for facility activation.

□ Indicates fully augmented organization positions.

⬚ Indicates team established as needed.

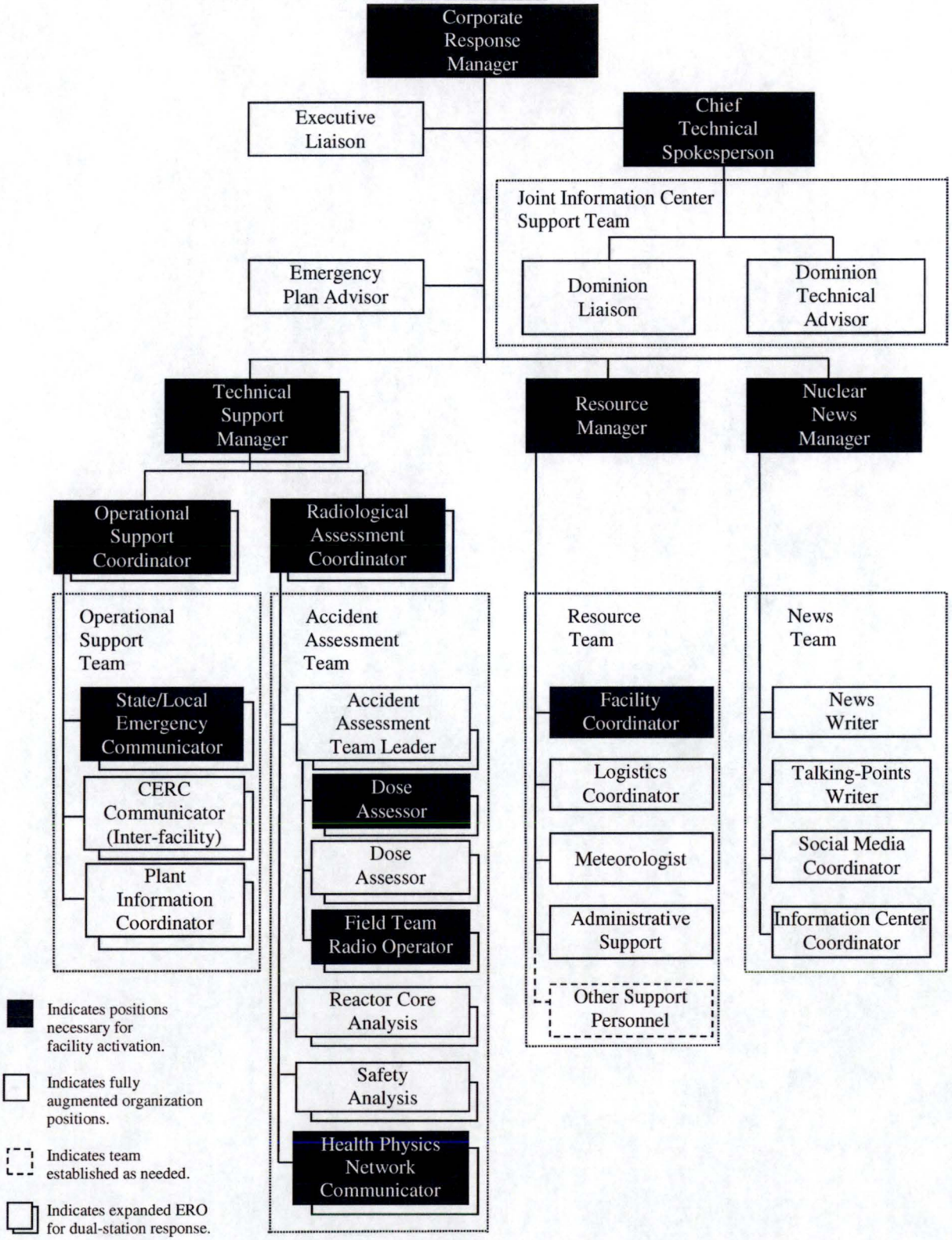
RADIATION PROTECTION ORGANIZATION
FIGURE 5.5.c



Indicates positions necessary for activation.

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

CORPORATE EMERGENCY RESPONSE CENTER ORGANIZATION
FIGURE 5.5.d



SURRY POWER STATION
CITIES AND COUNTIES WITHIN THE 50 MILE EMERGENCY PLANNING ZONE*
FIGURE 5.6.a

VIRGINIA COUNTIES

1. Surry
2. Isle of Wight
3. Southhampton
4. James City
5. York
6. Charles City
**7. Henrico
**8. Chesterfield
9. Northhampton
10. Northumberland
11. Lancaster
12. Richmond
**13. Essex
14. Middlesex
15. Mathews
16. Gloucester
**17. King & Queen
**18. King William
**19. Hanover
20. New Kent
21. Prince George
22. Dinwiddie
23. Sussex

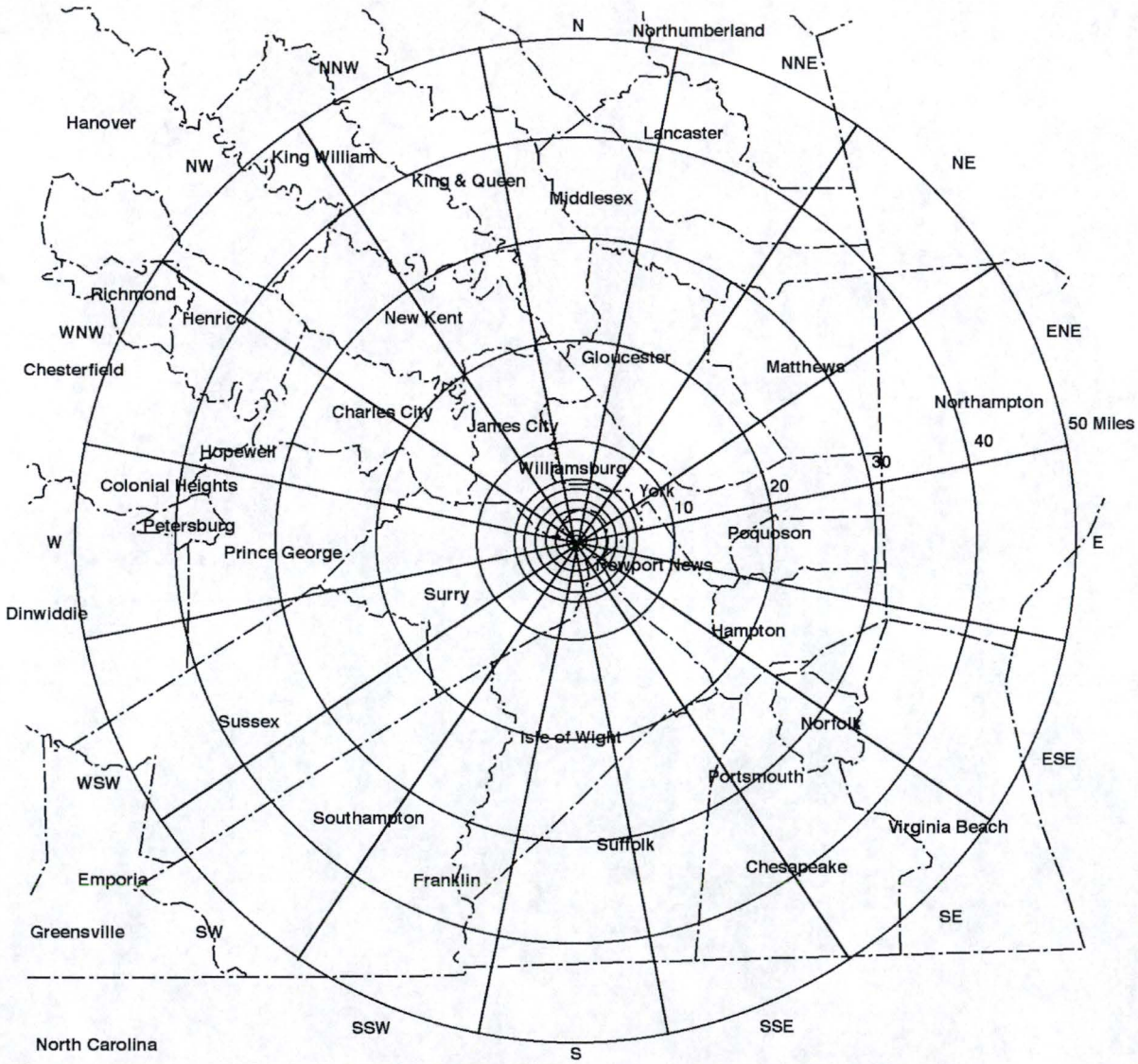
VIRGINIA CITIES

24. Suffolk
25. Williamsburg
26. Chesapeake
27. Newport News
28. Hampton
29. Portsmouth
30. Norfolk
**31. Richmond
32. Virginia Beach
33. Colonial Heights
34. Hopewell
35. Petersburg
36. Franklin
37. Poquoson

* That portion of the State of North Carolina lying within the 50 Mile Zone has been excluded (reference NRC letter, January 13, 1981, Serial Number 39).

** Within 50 miles of North Anna Power Station and Surry Power Station. Reference Figure 5.5b.

SURRY POWER STATION
FIFTY MILE EMERGENCY PLANNING ZONE
FIGURE 5.6.b



Graphics No. SB1215

SURRY POWER STATION

EMERGENCY PLAN

SECTION 6

EMERGENCY MEASURES

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6.0 Emergency Measures

Emergency measures provide pre-planned actions, methods, and criteria which guide personnel during the course of an emergency.

The initial response to any emergency condition will be the activation of the Emergency Plan. After activation, the emergency organization that is formulated by activation of the Emergency Plan performs the necessary assessment activities to classify the type of emergency. If the emergency is radiological in nature, the potential consequences of the emergency will be evaluated for the necessary offsite and onsite protective actions to guard the health and safety of the population. If additional assistance is required, offsite support will be requested as provided for in Letters of Agreement established with a variety of government agencies and volunteer organizations.

6.1 Activation of the Emergency Plan

Each full-time employee of the station is required to be familiar with the provisions of the Emergency Plan. Any employee, upon becoming aware of an emergency condition, shall immediately notify the Shift Manager on duty unless it is apparent that notification has already taken place. Upon such notification or other indication, the Shift Manager or Unit Supervisor assumes the responsibilities of the Station Emergency Manager (SEM). The SEM classifies the emergency and proceeds to take appropriate actions and make specific recommendations to offsite agencies.

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

6.2 Assessment Actions

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

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

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

6.3 Protective Actions

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

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

Dose contribution from key isotopes such as those listed in Table 6.1 are used to calculate offsite doses for comparison to protective action recommendation thresholds.

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

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

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

Warnings to the public within the 10-mile EPZ (Figure 6.5) will be the responsibility of State and local officials who will be assisted by the Virginia Department of State Police upon request. The primary method of warning the public is by the use of the Early Warning System sirens. Route alerting provides backup alert and notification capability (reference 10 CFR 50, Appendix E, paragraph IV.D.4). Other warning methods may include telephone communications, television and radio Emergency Alert System stations, public address systems, bull horns from patrol cars and personal contact. Special facilities are notified by the DEM.

It is estimated that the primary sector and the two buffer sectors (spanning 67 1/2°) can be alerted of the emergency within 15 minutes using the Early Warning System.

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

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

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

The COVEOP identifies the methods to be utilized in preventing or minimizing direct or subsequent ingestion exposure to radioactive materials deposited on the ground or other surfaces.

Upon notification of a radiological emergency within the state which may affect livestock, crops, or farmlands, the Virginia Department of Agriculture and Consumer Services will institute a program to assess the impact upon the agriculture community. Members of the department will take samples of milk from dairy cattle in the affected area for analysis and will monitor soil, crops and farm equipment for contamination.

Samples will be taken at localities where radiation levels exceed 0.05 mR/hr at one inch. The Virginia Department of Agriculture and Consumer Services will supply uncontaminated feed for dairy cattle and livestock removed from contaminated farmland. The ingestion pathway is monitored within an approximate 50-mile radius of the station.

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

Waller Mill, Harwood Mill, Bethel and Newport News Reservoirs supply water for the Williamsburg, Newport News and Hampton areas. The respective local public health departments are the primary health response agencies for monitoring water supplies, with assistance given by the Virginia Department of Health. There are no withdrawals of James River water for public or private water supplies within Surry, James City, Isle of Wight, and York counties and the cities of Williamsburg and Newport News. Most of Surry County and Isle of Wight County water supplies come from wells.

Criteria for determining an exposure value that would allow relaxation of protective actions within any or all of the 10-mile EPZ falls under the provisions of the COVEOP. Assistance will be provided as required in this regard.

6.3.2 Onsite Criteria for the Site Boundary

The area within 1650 feet of Surry Unit 1 is defined as the Site Boundary for the purposes of this Plan. Company employees, supplemental personnel, and occasional visitors at the site may be in the Site Boundary. The immediate area surrounding the units which has been enclosed by a security fence is defined as the Protected Area. The Station Emergency Manager is responsible for making the decision to evacuate the Protected Area, and will take appropriate measures in cooperation with state and local agencies for evacuation of persons in the Site Boundary and those members of the public who may be passing through the site or within Company property. The company will also commit Company personnel and appropriate equipment (search lights, power amplified loudspeakers) to clear the Site Boundary when required.

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

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

Normally, alarms will be sounded and announcements will be made to conduct personnel accountability or, if necessary, a site evacuation of non-essential workers. Those individuals within the Site Boundary will be alerted by station personnel and Security. In the event of an evacuation, radiation monitoring teams will be dispatched to the appropriate Remote Assembly Area.

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

If onsite evacuation is to occur, Security collects only the security key cards, not the dosimetry, of all personnel leaving the Protected Area. Continuous accountability of personnel in the Protected Area not evacuating the site shall be maintained throughout the emergency. Evacuees, who may use personal vehicles, proceed to either the primary or secondary remote assembly area (See Figure 6.6). Station evacuees will be surveyed for contamination following events involving a radiological release, and decontaminated, if necessary, prior to being released from the remote assembly area. Decontamination agents and supplies are available at the station which can be transported to the remote assembly areas to provide decontamination capabilities.

6.3.3 Use of Onsite Protective Equipment and Supplies

6.3.3.1 Respiratory Protection

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

6.3.3.2 Protective Clothing

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

6.3.3.3 Thyroid Blocking Agent

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

6.4 Aid to Affected Personnel

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

The station will provide and distribute self-reading and cumulative type dosimeters to all personnel involved in emergency onsite response, regardless of their affiliation with the Company, in accordance with procedures established for this purpose. The station shall have this capability on a 24-hour basis. Dose records shall be maintained and checked throughout the emergency.

6.4.1 Emergency Exposure Limits

Emergency response personnel may, because of necessity, receive once-in-a-lifetime exposure to contamination and radiation up to the 10CFR20 annual limits, not including accumulated occupational exposure. Approval from the Station Emergency Manager is necessary for planned exposures greater than the 10CFR20 annual limits. Under limited circumstances, exposure levels greater than 5 times the 10CFR20 annual limits are allowed, but only on a voluntary basis to persons fully aware of the risks involved. Selection criteria for volunteer emergency workers includes consideration of those who are in good physical health, are familiar with the consequences of emergency exposure, and are not declared

pregnant adults. It is preferable, though not mandatory, that volunteers be older than 45 years of age and not be a female capable of reproduction.

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

6.4.2 First Aid and Decontamination

The station has a First Aid Facility that contains the normal complement of first aid supplies and equipment necessary to treat those injuries not involving hospitalization or professional medical services.

At least two First Aid Team members are trained, certified, and available to respond to personnel injuries onsite.

In addition, the following Medical facilities and services are available:

1. Company nurse available on a part-time basis
2. Company Ambulance
3. Company designated physicians in the area
4. Local Rescue Squads
5. Medical College of Virginia

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

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

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

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

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

Security personnel may patrol the land area to ensure eviction of unauthorized personnel. Since the station's drinking water supply is from deep wells, there is no agricultural production in this area, and there are no milk cows in this area, contamination control methods affecting these are unnecessary. The area may be returned to a status not requiring evacuation when projected doses to the majority of non-

essential workers is expected to be less than 1 Rem TEDE, less than 5 Rem Thyroid CDE, and less than 1000 dpm/100 cm^2 Beta-Gamma contamination.

6.4.3 Medical Transportation

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

6.4.4 Medical Treatment

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

6.5 Offsite Support

In addition to the offsite agencies listed above, volunteer fire departments in the counties of Surry and Isle of Wight have agreed to assist in fighting fires. A list of services and equipment is included in the Letters of Agreement referenced in Appendix 10.1.

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

Police support for an emergency is provided by state and local governments, as detailed in the respective Emergency Plans.

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

ROE MESSAGE # _____ APPROVAL: _____
(Station Emergency Manager or Recovery Manager)

ATTENTION ALL STATIONS. This is Surry Power Station.
Standby for a(n) ☐ Drill Message ☐ Emergency Message ☐ Drill Termination Message ☐ Emergency Termination Message.
Use the Report of Emergency form to copy message. **(READ SLOWLY)**

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

In accordance with EAL ____ ____ ____ . ____ Declared at _____ (24-hr time) on _____ (date).

This is (name) _____ / Emergency Communicator.

Please acknowledge receipt of this message: **(Conduct roll-call and check boxes as each party answers.)**
☐ VA EOC ☐ Surry County ☐ Isle of Wight County ☐ James City County ☐ Williamsburg ☐ Newport News ☐ York County

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

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

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

Item 3. RELEASE OF RADIOACTIVE MATERIAL:
Routine releases ongoing due to plant operations. Additional radiological releases associated with the event:
☐ A. No radiological release. Will NOT transmit Report of Radiological Conditions to Virginia EOC.
☐ B. Radiological release in progress. Will transmit Report of Radiological Conditions to Virginia EOC.
☐ C. Radiological release now terminated. Will transmit Report of Radiological Conditions to Virginia EOC.
☐ D. Radiological release projected to occur. Will transmit Report of Radiological Conditions to Virginia EOC.

Item 4. SITE ACCESS: ☐ Available ☐ Not Available

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

Item 6. UPDATE SCHEDULE: ☐ 60 minutes (recommended) ☐ other _____; EOC Watch Officer: _____

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

Item 7. EMERGENCY RESPONSE ACTIONS UNDERWAY: ☐ Excluded from message
☐ None ☐ Station emergency personnel called in
☐ Station monitoring teams dispatched off-site ☐ Other _____

Item 8. EVACUATION OR COMPANY DISMISSAL OF SITE PERSONNEL: ☐ Excluded from message
☐ No
☐ Evacuation to **Primary** Remote Assembly Area: ☐ Planned ☐ In progress ☐ Completed ☐ Released from RAA
☐ Evacuation to **Secondary** Remote Assembly Area: ☐ Planned ☐ In progress ☐ Completed ☐ Released from RAA
☐ Company Dismissal: ☐ Planned ☐ In progress ☐ Completed
☐ Other _____

Item 9. PROGNOSIS OF SITUATION SINCE LAST REPORT: ☐ Excluded from message
☐ Stable ☐ Worsening
☐ Improving ☐ Other _____

Item 10. ASSISTANCE REQUESTED OR BEING PROVIDED: ☐ Excluded from message
☐ None
_____ (#) Fire Units from _____ _____ (#) Police Units from _____
_____ (#) Rescue Units from _____ _____ (#) Other _____

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

This is Surry Power Station out at _____ (24-hr time) on _____ (date).

Item 12. TERMINATION INFORMATION (Complete ONLY for termination message):
Event Terminated at: _____ (24-hr time) on _____ (date).
Please acknowledge receipt of this message: **(Conduct roll-call and check boxes as each party answers.)**
☐ VA EOC ☐ Surry County ☐ Isle of Wight County ☐ James City County ☐ Williamsburg ☐ Newport News ☐ York County
This is Surry Power Station out at _____ (24-hr time) on _____ (date).

SAMPLE

Figure 6.2 Protective Action Recommendation

PROTECTIVE ACTION RECOMMENDATION:

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

_____.

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

_____.

☐ BEYOND 10 MILE EPZ:

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

☐ Shelter-in-place: ____ Centerline in degrees: _____ Distance in Miles; _____ Width in feet

☐ POTASSIUM IODIDE:

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

The time is _____ (24-hr time).

This is _____ / Emergency Communicator.

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

SAMPLE

Figure 6.3

Radiological Status Form

Based on MIDAS Projection

Prepared by: _____
Reviewed by: _____
Date/Time: _____
Run Time: _____

Method (circle one): Monitor Reading Plume Correlation Wind-W (Hypothetical)

A. MIDAS PROJECTIONS

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

Distance to which 4-hour TEDE exceeds 1 rem: Miles
Distance to which 4-hour Thyroid CDE exceeds 5 rem: Miles

% of Technical Specification: % of TS for DDE % of TS for Thy CDE
(Based on Site Boundary Dose Rates)

Remarks: _____

B. RELEASE DESCRIPTION:

Site: Un

Reactor Shutdown Time:
Start of Release Time: hours since Reactor shutdown
Remaining Release Duration (h Total Release Duration (hr)

Pathway:	GROUND	PROC VNT	STEAM	VENT VNT	TOTAL
Plume Height (ft):					
Percent of Plume on Ground:					
Noble Gas Release Rate (Ci/sec):					
Radioiodine Release Rate (Ci/sec)					
Particulate Release Rate (Ci/sec):					

C. METEOROLOGICAL CONDITIONS:

Time Period:

	Lower	Upper
Wind Direction (from):		
Downwind Sector:		
Wind Speed (mph):		
Stability Class (PG A-G):		
Ambient Temp (degrees F):		
Precipitation (in./15 min.):		

SAMPLE

Figure 6.4 **RADIOLOGICAL STATUS**

Complete based on information available when prepared. Report #: _____

Prepared by: _____

A. Unit/Release Status:

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

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

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

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

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

☐ No; Other, _____ Date / Time: _____ /_____

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

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

Average Lower Wind direction is from _____ degrees (0° to 360°)

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

Average Upper Wind direction is from _____ degrees (0° to 360°)

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

Stability Class is _____; Ambient Temperature is _____ degrees F

Precipitation: ☐ None; ☐ Rain; ☐ Sleet; ☐ Snow; ☐ Other _____

C. Radiological Conditions based on available data:

☐ On-site survey results indicate _____ rem/hr at _____ (location).
Additional information will be provided when available.

☐ Off-site survey results indicate _____ rem/hr at _____ (location).
Additional information will be provided when available.

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

☐ _____

_____

D. Remarks: _____

_____

_____

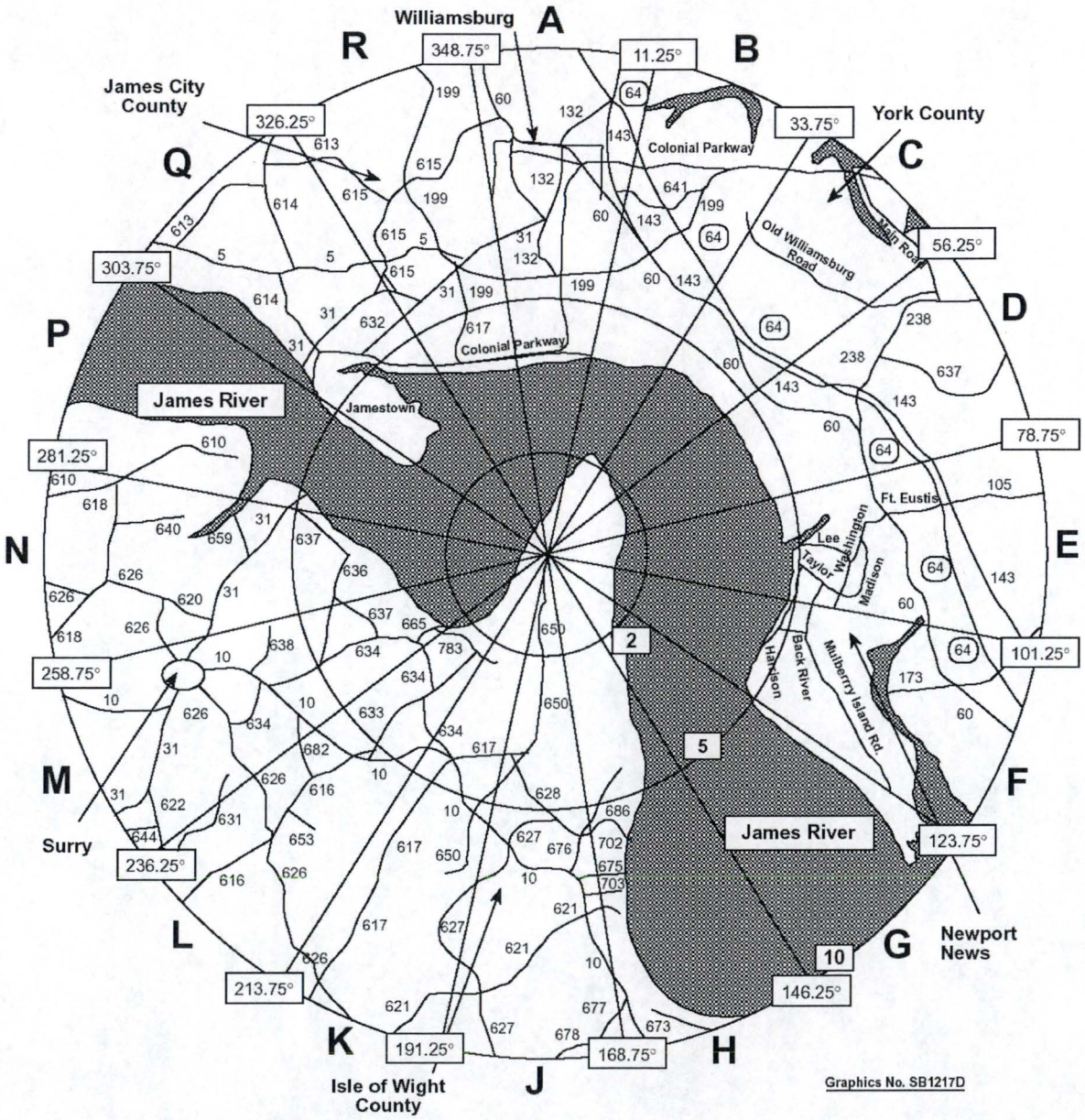
Reviewed by: _____ _____
Radiological Assessment Director or Radiological Assessment Coordinator — Date / Time

SAMPLE

SURRY POWER STATION

10 - MILE EMERGENCY PLANNING ZONE (EPZ)

FIGURE 6.5

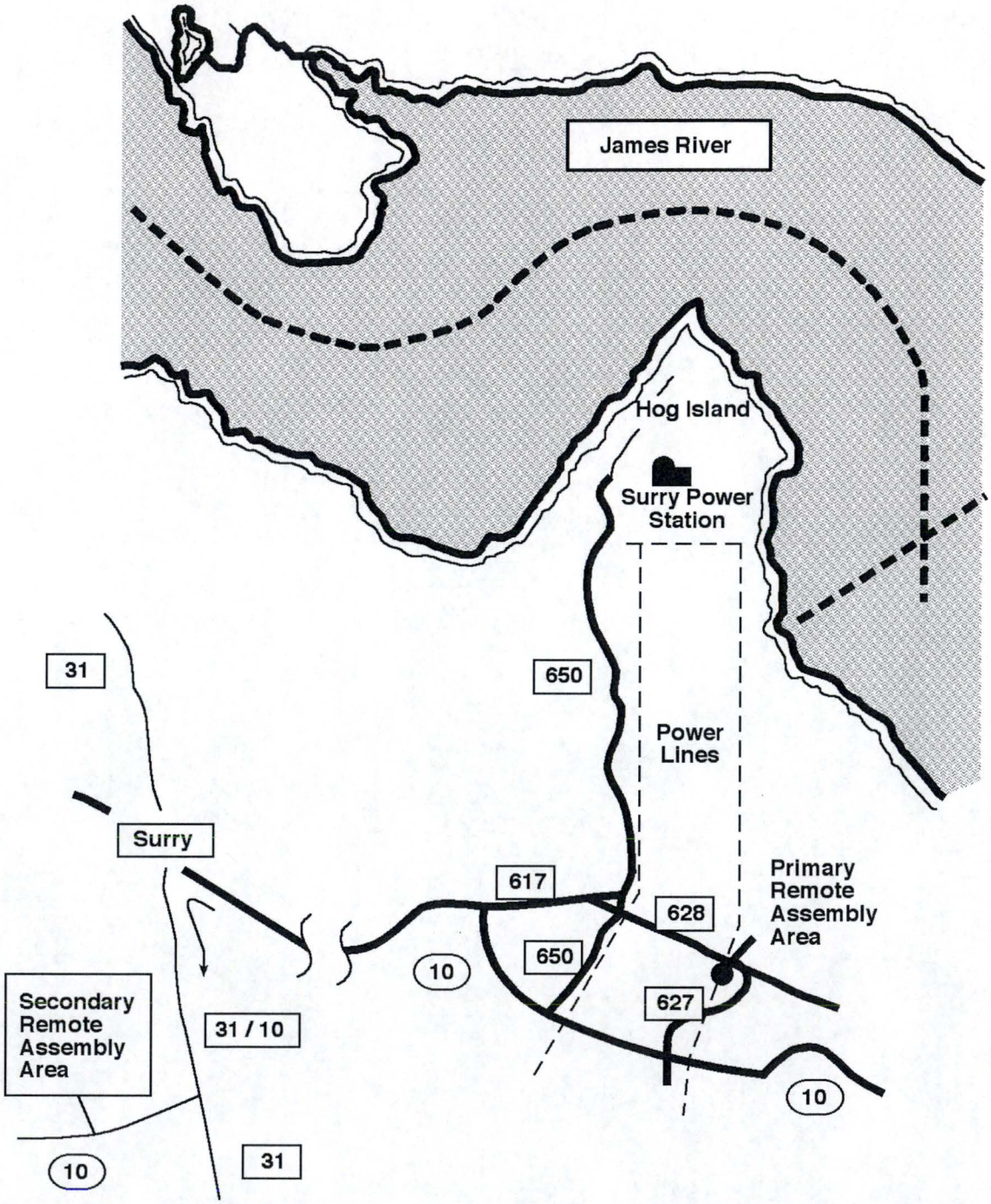


Graphics No. SB1217D

SURRY POWER STATION

REMOTE ASSEMBLY AREAS

FIGURE 6.6



Graphics No. SB1216

RADIONUCLIDES WITH SIGNIFICANT CONTRIBUTION TO DOMINANT EXPOSURE MODES[1]

TABLE 6.1

Radionuclides with Significant Contribution to Thyroid Exposure		Radionuclides with Significant Contribution to TEDE Exposure		Radionuclides with Significant Contribution to Lung Exposure (Lung only controlling when thyroid dose is reduced by iodine blocking or there is a long delay prior to release)	
Radionuclide	Half Life (days)	Radionuclide	Half Life (days)	Radionuclide	Half Life (days)
I-131	8.05	I-131	8.05	I-131	8.05
I-132	0.0958	Te-132	3.25	I-132	0.0958
I-133	0.875	Xe-133	5.28	I-133	0.875
I-134	0.0366	I-133	0.875	I-134	0.0366
I-135	0.280	Xe-135	0.384	I-135	0.280
Te-132	3.25	I-135	0.280	Cs-134	750
		Cs-134	750	Kr-88	0.117
		Kr-88	0.117	Cs-137	11,000
		Cs-137	11,000	Ru-106	365
				Te-132	3.25
				Ce-144	284

(1) Derived from NUREG 0654.

SURRY POPULATION DISTRIBUTION AND EVACUATION TIME ESTIMATES
(in hours and minutes)

TABLE 6.2

Scenario	**Region 1 2 mile EPZ**	**Region 2 5 mile EPZ**	**Region 3 10 mile EPZ**
Summer Midweek Mid-day Good Weather	1:05	2:15	4:15
Summer Midweek Mid-day Rain	1:05	2:15	4:45
Summer Weekend Mid-day Good Weather	1:00	2:10	3:50
Summer Weekend Mid-day Rain	1:00	2:10	4:05
Summer Evening Good Weather	1:00	2:05	3:15
Winter Midweek Mid-day Good Weather	1:05	2:20	3:40
Winter Midweek Mid-day Rain	1:05	2:20	4:00
Winter Midweek Mid-day Snow	1:05	3:05	4:20
Winter Weekend Mid-day Good Weather	1:00	2:10	3:10
Winter Weekend Mid-day Rain	1:00	2:15	3:50
Winter Weekend Mid-day Snow	1:00	2:55	3:50
Winter Evening Good Weather	1:00	2:15	3:05
Winter Weekend Mid-day Special Event	1:00	2:10	3:35
Winter Weekend Mid-day Road Impacted	1:05	3:05	5:10

Total Population Evacuated	**Region 1 2 mile EPZ**	**Region 2 5 mile EPZ**	**Region 3 10 mile EPZ**
	470	42,920	300,069

Information summarized above derived from KLD Engineering, P.C. Evacuation Time Estimates for the Surry Power Station and Surrounding Jurisdictions dated December 2012 (Figure 3-2, Permanent Resident Population by Sector, Figure 3-6, Transient Population by Sector and Table 3-7, Summary of Population Demand).

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

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

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

SURRY POWER STATION POPULATION DATA BY SECTOR
TABLE 6.3

Direction/Sector	Population	2-Mile Ring	5-Mile Ring	10-Mile Ring
Direction: North	Permanent Resident	0	891	15376
Sector: A	Transient	0	0	26211
Direction: North Northeast	Permanent Resident	0	855	8158
Sector: B	Transient	0	1953	27360
Direction: Northeast	Permanent Resident	0	137	2897
Sector: C	Transient	0	0	0
Direction: East Northeast	Permanent Resident	0	0	7645
Sector: D	Transient	0	0	0
Direction: East	Permanent Resident	0	4	27960
Sector: E	Transient	0	0	1770
Direction: East Southeast	Permanent Resident	0	0	35092
Sector: F	Transient	0	0	421
Direction: Southeast	Permanent Resident	0	0	0
Sector: G	Transient	0	0	0
Direction: South Southeast	Permanent Resident	0	108	390
Sector: H	Transient	0	0	0
Direction: South	Permanent Resident	37	453	1100
Sector: J	Transient	0	0	0
Direction: South Southwest	Permanent Resident	0	87	204
Sector: K	Transient	0	0	0
Direction: Southwest	Permanent Resident	0	110	597
Sector: L	Transient	0	84	0
Direction: West Southwest	Permanent Resident	0	186	923
Sector: M	Transient	0	0	0
Direction: West	Permanent Resident	0	179	583
Sector: N	Transient	0	0	0
Direction: West Northwest	Permanent Resident	0	15	580
Sector: P	Transient	0	0	291
Direction: Northwest	Permanent Resident	0	428	11326
Sector: Q	Transient	0	0	6715
Direction: North Northwest	Permanent Resident	0	333	26027
Sector: R	Transient	0	84	4453

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

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

Information summarized above derived from KLD Engineering, P.C. Evacuation Time Estimates for the Surry Power Station and Surrounding Jurisdictions dated December 2012 (Figure 3-2, Permanent Resident Population by Sector, and Figure 3-6, Transient Population by Sector).

SURRY POWER STATION

EMERGENCY PLAN

SECTION 7

EMERGENCY FACILITIES AND EQUIPMENT

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7.0 Emergency Facilities and Equipment

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

7.1 Emergency Response Facilities

7.1.1 Control Room

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

7.1.2 Operational Support Center

The Operational Support Center (OSC), located in the Work Control Center, is the designated reporting location for the pool of workers who compose Damage Control Teams, the Fire Brigade, the First Aid Team, and the Search and Rescue Team. Station Operations personnel not required for Control Room operation may also assemble at the OSC unless already performing an emergency function outside the Control Room (or otherwise instructed by the Shift Manager/SEM). In the event that the primary facility is unavailable; an Alternate OSC has been designated in the Maintenance Building.

7.1.3 Technical Support Center

The TSC is located adjacent to Unit 1 Control Room, and its alternate location is the Control Room. Emergency response personnel will assemble at the primary TSC unless otherwise instructed by the SEM. The primary location contains controlled copies of selected manuals, procedures, drawings, and other documents as designated by Nuclear Records Department directives. Information about plant conditions is available via real time data displays from the Plant Computer System (PCS). Dedicated phone line communications have also been established with the Control Room to keep TSC personnel knowledgeable on current operating evolutions and to provide consultation and recommendations to the Control Room staff.

The construction of the facility walls and design of the ventilation system are such that the whole body and thyroid doses received by occupants of the TSC are below General Design Criteria limits. Radiation monitoring equipment for making airborne particulate and direct radiation measurements is installed in the TSC. The TSC houses the Plant Computer System Data Communications Processors. Inputs from plant sensors are processed by these units and the information is transmitted to facilities

including the Control Room and CERC for display on video terminals. Refer to Section 7.3.4, Plant Process Parameter Monitoring, for a description of the PCS.

7.1.4 Corporate Emergency Response Center

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

7.1.5 Joint Information Center and Local Media Center

Official company statements to the media will be made from Joint Information Center (JIC) by the Chief Technical Spokesperson. The JIC is located at the Virginia State Police Administrative Headquarters in Chesterfield, Virginia. These company statements are prepared at the CERC.

A Local Media Center (LMC) may be activated as an adjunct to the JIC. The LMC for Surry Power Station is located on Route 650 on company property. The facility is designated as the Surry Nuclear Information Center in normal operation. There are dedicated rooms for Dominion, NRC, FEMA, State, and media representatives as well as an auditorium that will accommodate 200 people.

Provisions have been made to accommodate TV cameras, copying machines, typewriters, and other equipment needed for press conferences. Should the LMC become uninhabitable, small groups of the media, no more than 20, can be accommodated in the CERC with the approval of the Corporate Response Manager.

7.1.6 Alternate Facility When Under Threat or Experiencing Hostile Action

The Surry County Administration Building functions as a staging area for augmentation of emergency response staff if the site is under threat of or experiencing hostile action. This location has the capability to communicate with the CERC, control room, and plant security. The CERC has the capability to perform offsite notifications. The staff at the staging area, working with CERC organization, provides capability for engineering assessment activities, including damage control team planning and preparation.

7.1.7 Near-Site Location For Offsite Agency Coordination

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

7.2 Communications Systems

The station communications system is designed to provide redundant means to communicate with all essential areas of the station associated with Surry Units 1 and 2 and to essential locations remote from the station during normal operation and under accident conditions. Communication systems vital to Units 1

and 2 operation and safety are designed so that failure of one component would not impair the reliability of the total communications system. This is accomplished within the station by use of diverse systems and designated personnel.

7.2.1 Communications Systems Within the Station

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

7.2.1.1 Public Address and Intercom System

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

7.2.1.2 Radio Communications System (Onsite)

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

7.2.1.3 Private Branch Telephone Exchange (PBX)

The PBX system provides switched local and trunked telephone service. The PBX switching equipment is physically located within the Protected Area and is connected to a commercial telephone exchange in Smithfield, Virginia.

7.2.1.4 Sound Powered Telephone System

A sound powered telephone communications system is installed which serves Surry Units 1 and 2. This system is a multiple channel system connecting selected operating areas of the plant. Headsets consisting of an earphone and microphone are connected to a two wire channel for direct communication between persons in different areas. Operation of this system is not dependent on the availability of the electrical power system. During an emergency, the system would provide an alternate means of relaying messages.

7.2.2 Offsite Communications Systems

Those systems provided for communication between the Station and offsite are described below and depicted in Figures 7.3 and 7.4.

NOTE: Correction of EWS transmitter location is beyond the scope of this license amendment request.

7.2.2.1 Commercial Telephone

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

7.2.2.2 Synchronous Optical Network (SONET) Ring

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

7.2.2.3 Radio Communications System (Offsite)

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

7.2.2.4 Dedicated NRC Communications

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

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

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

- Local Area Network (LAN) Access: Provides access to the NRC local area network. Telephone jacks are provided in the TSC and CERC for NRC LAN access.

7.2.2.5 Instaphone Loop

An Instaphone Loop permits simultaneous telephone-speaker communications from the station to the counties of Surry, Isle of Wight, James City and York; cities of Williamsburg and Newport News, and the VEOC on a 24-hour per day basis. This loop can be activated at the station from the Control Room, TSC, or CERC.

7.2.3 Communication System Reliability

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

7.2.4 Emergency Response Facility Communications

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

7.2.5 Communications Responsibilities

7.2.5.1 Station Emergency Manager

The SEM has the responsibility for communicating with the VEOC; Surry, Isle of Wight, York and James City counties; and the cities of Williamsburg and Newport News. All of these agencies/jurisdictions provide 24-hour dispatcher coverage. Upon activation of the CERC, the Technical Support Manager is responsible for notifying State and local governments of emergency status.

7.2.5.2 State and Local Entities Contiguous to the 10-Mile EPZ

While the licensee is responsible for notifying political entities within the 10-mile EPZ, the VEOC notifies those political jurisdictions outside the 10-mile EPZ but within the 50-mile zone.

7.2.5.3 Federal Response

The SEM or Technical Support Manager is responsible for communications with Federal emergency response organizations. Initial NRC notification is made to the NRC Headquarters Operations Center in accordance with approved procedures designed for this purpose. The Technical Support Manager may also contact DOE, either directly or through the NRC (Federal Coordinating Agency), and request FRMAC activation. Other Federal agencies are normally contacted by VDEM.

7.2.5.4 Local Emergency Facilities

The SEM is responsible for ensuring communications are established from the TSC to the OSC and CERC, as appropriate. Communications shall also be maintained by field monitoring teams using two-way radios or alternative methods such as cellular telephones. This information will be provided to the TSC and/or CERC, depending on that facility responsible for team command and control at the time.

7.2.5.5 Emergency Personnel

The SEM shall implement EPIP-1.01, Emergency Manager Controlling Procedure, which will ensure the rapid activation of emergency response organization to deal with the emergency if the station requires such action.

7.2.5.6 Communications with Corporate Emergency Response Center

In the event that the severity of the emergency requires CERC activation, the Resource Manager is responsible for ensuring availability and operability of communications between the CERC and the TSC.

7.3 Assessment Facilities Available Onsite

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

7.3.1 Seismic Monitoring

The Seismic Monitoring System is designed to detect the occurrence of an earthquake at the Surry site, to alert the Control Room via panel indications and annunciation, and to provide records of the intensity, duration, and frequency of the earthquake.

7.3.2 Radiological Monitoring

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

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

In addition to the fixed radiation monitoring equipment, portable radiation monitoring equipment would be used to perform dose assessments. The equipment consists of low and high range instruments to measure gamma, alpha, beta, and neutron radiation. This equipment is maintained by the Radiological Protection Department and is used on a routine basis. Portable gamma detection instruments are also dedicated for emergency kit use (See Appendix 10.7). The kits are set aside solely for emergency use and are inventoried and checked for calibration and operability on a quarterly basis.

Portable equipment is also available to take low or high volume air samples. Battery operated air samplers can be used to collect low volume samples either onsite or offsite. Silver Zeolite cartridges would

be used for sampling radioiodine with a minimum detectable activity capability of $5X10^{-8}$ microcuries per cc. Silver Zeolite has a low retention efficiency for Xenon and therefore, interference should be minimal. Plastic bags and bottles are available to collect water, soil, foodstuffs or other samples.

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

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

Surry maintains fixed laboratory equipment to support sampling analysis and monitoring. The equipment includes Multichannel Analyzers and whole body counters; arrangements are maintained for reading TLDs.

7.3.3 Meteorological Monitoring

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

The meteorological equipment was originally designed to meet the criteria of Regulatory Guide 1.23, "On Site Meteorological Programs", dated February 1972. Subsequent modifications have referenced later guidance where applicable.

7.3.4 Plant Process Parameter Monitoring

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

The Plant Computer System (PCS) was installed in order to support the data acquisitions need of the emergency response facilities. The PCS will provide plant monitoring, data acquisition, and critical plant data in the form of real-time status displays for the purpose of making a rapid evaluation of the reactor plant's safety status. PCS monitors are strategically located in areas including the Control Room, TSC, and CERC. The PCS includes the Safety Parameter Display System (SPDS), Emergency Response Guidelines

(ERGs), process and instrument displays, and pressure-temperature plant displays. Monitor displays are continuously updated by the computer system as they collect and process parametric data from the various plant sensors. The PCS will process inputs from plant sensors and distribute information to the Control Room and TSC. Secure links on the station LAN and corporate Wide Area Network (WAN) will provide data to designated LAN/WAN-connected PCs, which have the appropriate software and security level for access, including the CERC.

7.3.5 Fire Detection

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

7.3.6 Post Accident Sampling

A contingency plan, controlled by normal Chemistry procedures, has been developed for obtaining and analyzing highly radioactive samples of reactor coolant, containment sump, and containment atmosphere. (Reference NRC Letter, Subject: Surry Units 1 and 2 - Issuance of Amendments Re: Elimination of Post-Accident Sampling System Requirements, dated December 18, 2001, Serial No. 01-761)

7.4 Facilities and Equipment for Offsite Monitoring

The facilities and equipment located at the North Anna Power Station may be utilized, as applicable, during emergency conditions at the Surry Station. Such equipment may include meteorological and/or seismic data, respiratory protection equipment, portable radiation detection instrumentation and count room facilities. Seismic data may be obtained from the National Earthquake Information Service.

Meteorological data can be obtained from the following:

LOCATION	ORGANIZATION	DISTANCE FROM SURRY (MILES)
Chesterfield	Dominion	55
Yorktown	Dominion	13
Wakefield	National Weather Service	21
Newport News/ Williamsburg Int'l Airport	Federal Aviation Administration	11
Norfolk Naval Air Station	US Navy	32
Fort Eustis	US Army	06
Langley Air Force Base	US Air Force	22
Milford Haven	US Coast Guard	35
South Island	US Coast Guard	40

7.5 Damage Control Equipment and Supplies

The station maintains an adequate supply of damage control equipment and supplies, and could rely on additional equipment and supplies from the North Anna Power Station. The station maintains a normal supply of mechanical tools and equipment which are used in the day to day maintenance of the station. The Warehouse maintains an inventory of supplies required for the normal operation of the station. These supplies are in various tool cribs in the station and at the Warehouse. Other equipment and supplies

include full face respirators with proper filters or canisters, SCBA respirators, air supplied respirators, protective clothing, radioactive waste containers, ion-exchange resin (liquid waste processing), portable radios, pagers, various communication devices, portable lighting equipment, and Company-owned vehicles. Where appropriate, calibration and inventory are conducted in accordance with station procedures. Equipment and supplies will be transferred to the OSC as needed.

7.6 Early Warning System

Prompt alerting and notification of the population within the 10-Mile EPZ is accomplished using the Early Warning System (EWS). The EWS consists of sirens installed and maintained by the Company, route alerting utilizing State and local emergency vehicles, institutional alerting initiated by State and local governments, the Emergency Alert System (EAS), and personal notifications. The Federal Emergency Management Agency (FEMA) has determined that the alert and notification system installed around the Surry Power Station satisfies the requirements of NUREG-0654/FEMA-REP-1, Revision 1, and FEMA-REP-10.

The purposes of the system are: 1) to allow initial notification to the residents of 10-Mile EPZ within 15 minutes of the time that State and local officials are notified that a situation exists requiring urgent actions, 2) to ensure that essentially 100% of population within 5 miles from the site can be alerted within this time, and 3) to ensure that essentially 100% of the population from 5 to 10 miles from the site can be alerted within 45 minutes from this time.

The State and local governments bear the ultimate responsibility for warning the public. Should it be necessary, State and local authorities will alert the public within the 10-Mile EPZ using alternative methods (reference COVEOP Hazard-Specific Annex #1 – Radiological Emergency Response). Members of the public within the 10-Mile EPZ shall be informed of what actions to take following activation of the EWS sirens. Upon hearing the sirens, they have been instructed to turn on their radios or television sets to EAS stations to receive further instructions. Surry and James City counties and the State have 24 hour capability to activate the EWS sirens. Messages sent out over the EAS are initiated by VDEM.

ERF COMMUNICATIONS

TABLE 7.1

Control Room

1. Automatic Ring Downs (ARDs) to the System Operator, TSC, OSC, Security Shift Supervisor, VEOC, Control Room Annex, Emergency Switchgear Room, and Condensate Polishing Building
2. Instaphone
3. Station PBX phones
4. OPX phones
5. Radio System
6. NRC Emergency Notification System (ENS)
7. Commercial Phone
8. Public Address Intercom and Sound Powered Phone System
9. Emergency Response Data System (ERDS)

Technical Support Center

1. ARDs to the Control Room, OSC, CERC, VEOC, Primary Remote Assembly Area, Security Shift Supervisor and Radiation Protection Supervisor.
2. Instaphone
3. Station PBX Phones
4. OPX Phones
5. Commercial Phones
6. NRC Emergency Notification System (ENS)
7. Public Address Intercom
8. Radio System
9. NRC Health Physics Network (HPN)
10. NRC Reactor Safety Counterpart Link (RSCL)
11. NRC Protective Measures Counterpart Link (PMCL)
12. NRC Emergency Response Data System (ERDS)
13. NRC Management Counterpart Link (MCL)
14. NRC Local Area Network (LAN) Access

ERF COMMUNICATIONS

TABLE 7.1

Operational Support Center (OSC)

1. Public Address Intercom
2. ARDs to Control Room and TSC
3. Radio System
4. Station PBX phone

Corporate Emergency Response Center (CERC

1. ARDs to TSC, LMC, and VEOC
2. Instaphone
3. Commercial Phones
4. Radio System
5. Station PBX Phones
6. OPX Phones
7. NRC Emergency Notification System (ENS)
8. NRC Health Physics Network (HPN)
9. NRC Reactor Safety Counterpart Link (RSCL)
10. NRC Protective Measures Counterpart Link (PMCL)
11. NRC Management Counterpart Link (MCL)
12. NRC Local Area Network (LAN) Access

Local Media Center (LMC)

1. Commercial Lines
2. ARD to CERC News Room

METEOROLOGICAL MONITORING SYSTEM PARAMETERS [1]
TABLE 7.2

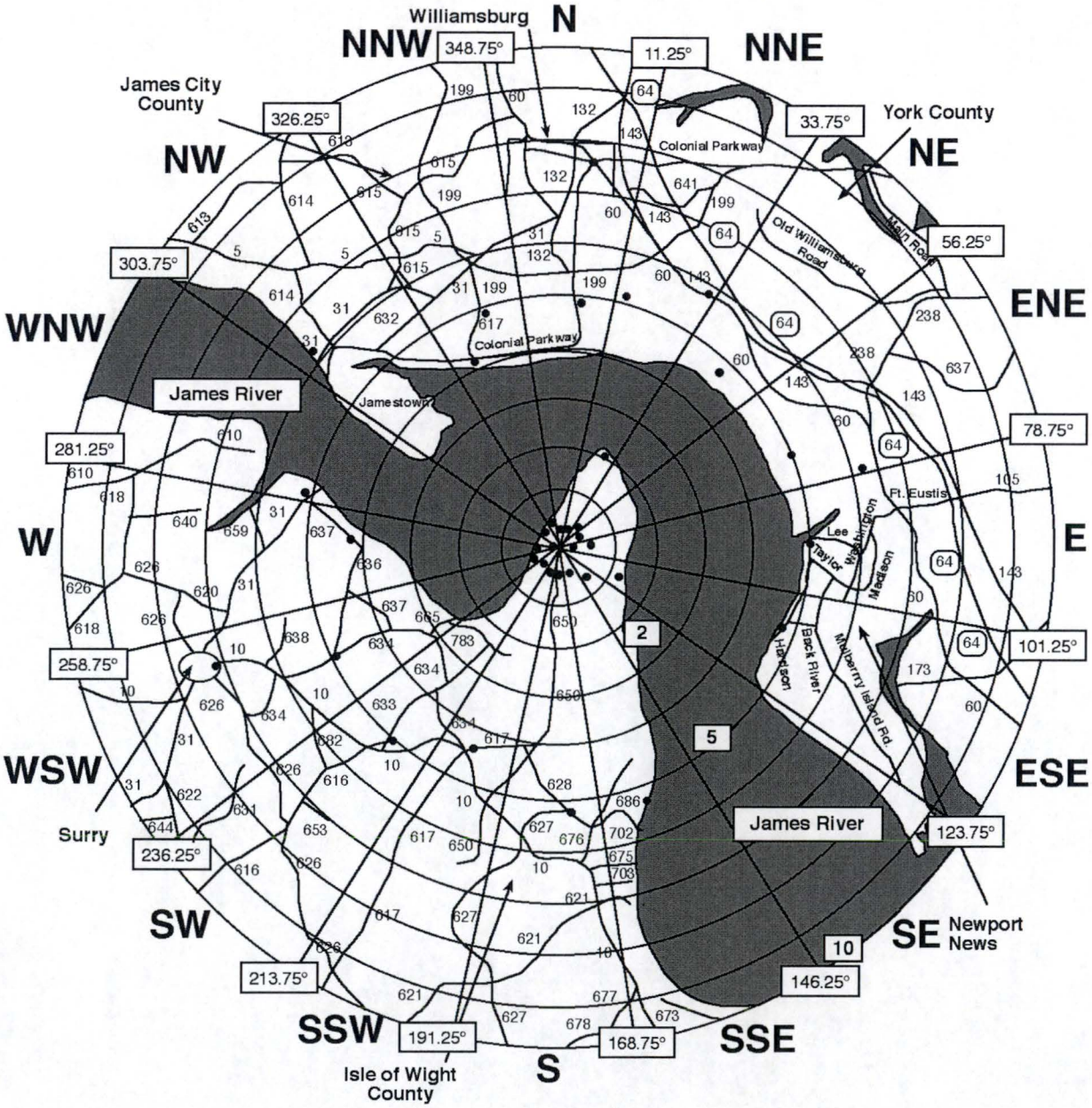
	Primary Tower			Backup Tower	Control Rm.
Measurement	151.2 feet	34.7 feet	Ground	30.3 feet	Readout
Wind Speed	x	x		x	x
Wind Direction	x	x		x	x
Sigma-theta	x	x		x	x[2]
	149.4 feet	35.4 feet			
Temperature		x			x
Differential Temperature	x	x			x
Dew Point Temperature		x			
Precipitation			x		

(1) All data available via dial-up link at Meteorological Operations in Richmond.

(2) Signal from Backup Tower only.

Reference Document: SPS DWG 11448-FY-5C Rev 8, 7/23/2012.

SURRY POWER STATION
ENVIRONMENTAL MONITORING LOCATIONS MAP
FIGURE 7.1



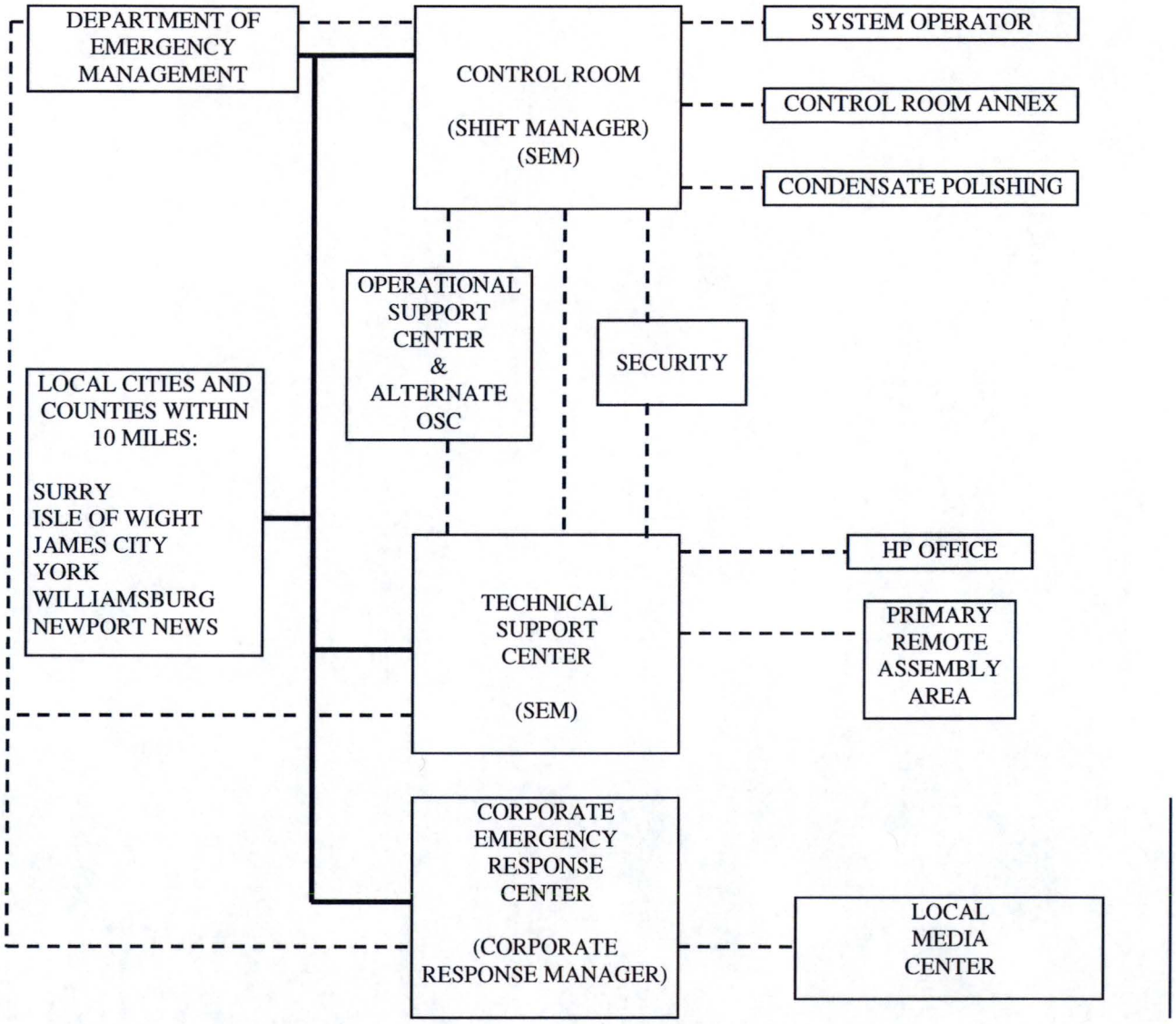
Graphics No. SB1217A

SURRY POWER STATION
ENVIRONMENTAL MONITORING LOCATIONS LISTING(*)
FIGURE 7.2

Sample Media	Location	Station #	Distance (miles)	Direction	Remarks
Environmental (TLDs)	Control	00	-	-	Onsite
	West North West	02	0.2	WNW	Site Boundary
	Surry Station Discharge	03	0.4	NW	Site Boundary
	North North West	04	0.2	NNW	Site Boundary
	North	05	0.3	N	Site Boundary
	North North East	06	0.3	NNE	Site Boundary
	North East	07	0.3	NE	Site Boundary
	East North East	08	0.4	ENE	Site Boundary
	East	09	0.3	E	Site Boundary
	West	10	0.1	W	Site Boundary
	West South West	11	0.4	WSW	Site Boundary
	South West	12	0.3	SW	Site Boundary
	South South West	13	0.3	SSW	Site Boundary
	South	14	0.4	S	Site Boundary
	South South East	15	0.6	SSE	Site Boundary
	South East	16	0.9	SE	Site Boundary
	Station Intake	18	1.6	ESE	Site Boundary
	Hog Island Reserve	19	2.0	NNE	Near Resident
	Bacons Castle	20	4.5	SSW	Approximately 5 miles
	Route 633	21	4.9	SW	Approximately 5 miles
	Alliance	22	5.1	WSW	Approximately 5 miles
	Surry	23	7.7	WSW	Population Center
	Route 636 and 637	24	4.0	W	Approximately 5 miles
	Scotland Wharf	25	5.0	WNW	Approximately 5 miles
	Jamestown	26	6.3	NW	Approximately 5 miles
	Colonial Parkway	27	3.8	NNW	Approximately 5 miles
	Route 617 and 618	28	4.9	NNW	Approximately 5 miles
	Kingsmill	29	4.6	N	Approximately 5 miles
	Williamsburg	30	7.8	N	Population Center
	Kingsmill North	31	5.5	NNE	Approximately 5 miles
	Budweiser	32	5.8	NNE	Population Center
	Water Plant	33	5.0	NE	Approximately 5 miles
	BASF	34	5.1	ENE	Approximately 5 miles
	Lee Hall	35	7.1	ENE	Population Center
	Goose Island	36	5.1	E	Approximately 5 miles
	Fort Eustis	37	4.9	ESE	Approximately 5 miles
	Newport News	38	19.3	SE	Population Center
	James River Bridge	39	17.1	SE	Control
	Benn's Church	40	17.0	SSE	Control
	Smithfield	41	13.4	SSE	Control
	Rushmere	42	5.3	SSE	Approximately 5 miles
	Route 628	43	5.1	S	Approximately 5 miles
Air Charcoal and Particulate	Surry Station	SS	0.3	NNE	
	Hog Island Reserve	HIR	2.0	NNE	
	Bacons Castle	BC	4.5	SSW	
	Alliance	ALL	5.1	WSW	
	Colonial Parkway	CP	3.8	NNW	
	BASF	BASF	5.1	ENE	
	Fort Eustis	FE	4.9	ESE	
	Newport News	NN	19.3	SE	Control Location

* Reference document: VPAP-2103S, Revision 19, Attachment 9, Environmental Sampling Locations.

COMMUNICATIONS LINKS
FIGURE 7.3

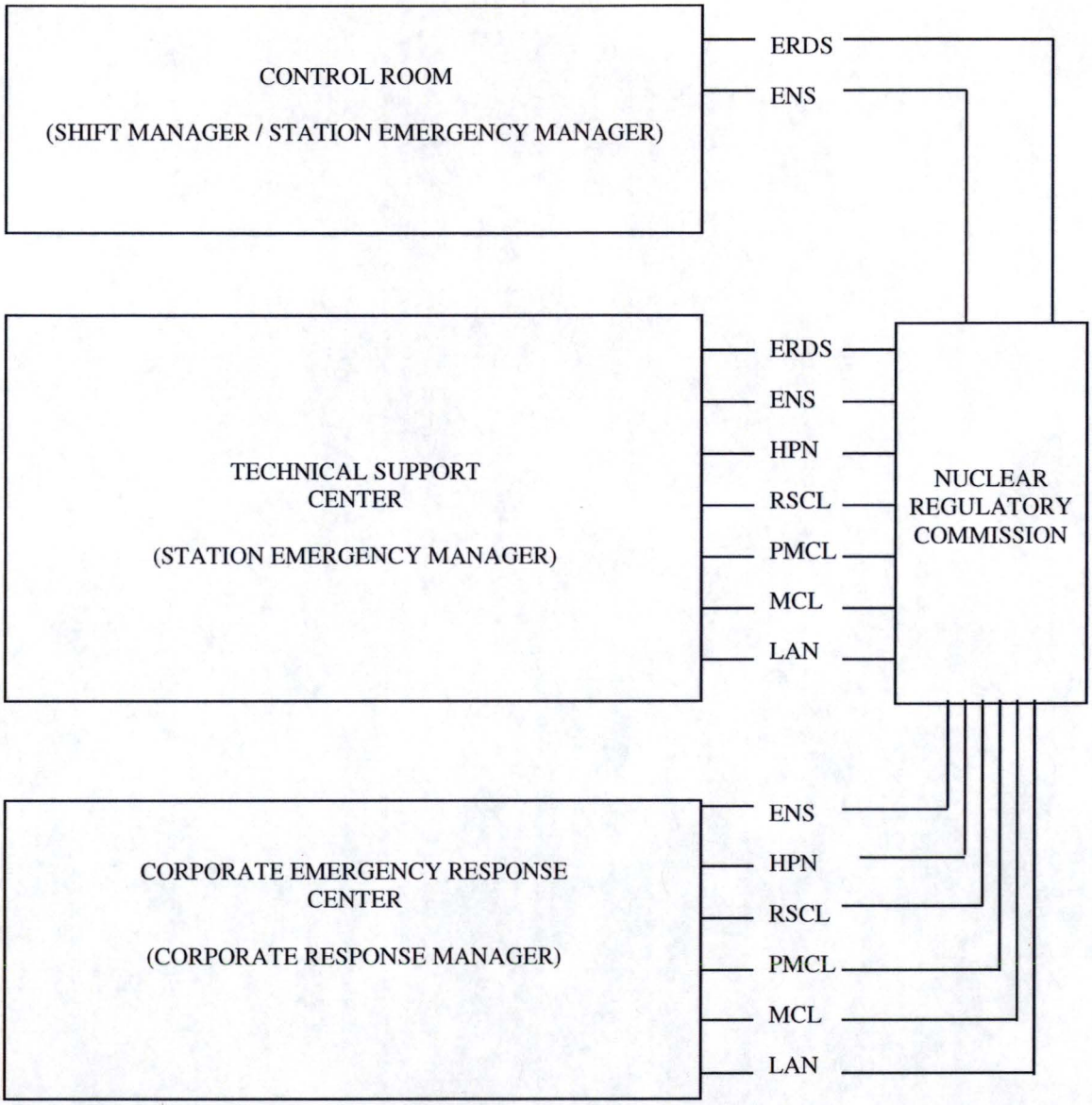


LEGEND: ARD – AUTOMATIC RINGDOWN - - - - - - - - -

INSTA-PHONE (HOT-LOOP) ———————

NOTES:
1. PUBLIC ADDRESS INTERCOM SYSTEM AVAILABLE THROUGHOUT THE STATION.
2. BASE, PORTABLE AND MOBILE RADIOS ARE USED TO COMMUNICATE BETWEEN FACILITIES, MONITORING AND DAMAGE CONTROL TEAMS, ETC.
3. PBX, OPX AND COMMERCIAL TELEPHONE LINES ARE ALSO AVAILABLE.

COMMUNICATIONS LINKS - NRC
FIGURE 7.4



LEGEND:

ERDS	-	Emergency Response Data System
ENS	-	Emergency Notification System
HPN	-	Health Physics Network
RSCL	-	Reactor Safety Counterpart Link
PMCL	-	Protective Measures Counterpart Link
MCL	-	Management Counterpart Link
LAN	-	Local Area Network

SURRY POWER STATION

EMERGENCY PLAN

SECTION 8

MAINTAINING EMERGENCY PREPAREDNESS

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8.0 Maintaining Emergency Preparedness

Dominion has instituted an emergency preparedness program to support development, maintenance and coordination of the company's emergency response capability. The Emergency Plan and associated Emergency Plan Implementing Procedures, which provide specific guidance to emergency response personnel, are revised as required and reviewed at least annually in accordance with this program.

Personnel who may be required to fill emergency response positions receive initial and annual training in their functional responsibilities. Training is also provided to various offsite groups that have agreed to support the station response to an emergency. Dedicated emergency response equipment is kept operational through testing in accordance with an established periodic surveillance program. Periodic drills and a biennial exercise are conducted for training and to identify program strengths and weaknesses. Additionally, the emergency preparedness program provides for the issuance of public information material. This material provides the public with a description of the emergency notification process and guidelines used to protect public health and safety in an emergency. Independent reviews of the emergency preparedness program are also conducted.

8.1 Responsibilities for Maintaining Emergency Preparedness

The Senior Vice President and Chief Nuclear Officer, assigned the overall authority for maintaining emergency preparedness, has delegated the responsibility for maintaining emergency preparedness to the Vice President Engineering and to the Site Vice President. The Vice President Engineering has delegated the responsibility to the Director Nuclear Regulatory Affairs. The Director Nuclear Regulatory Affairs has delegated the responsibility to the Manager Nuclear Fleet Emergency Preparedness. The Site Vice President has delegated the responsibility to the Director Safety and Licensing. The Director Safety and Licensing has delegated the responsibility to the Manager Nuclear Emergency Preparedness. The hierarchy for program maintenance is further outlined in VPAP-2601, "Maintaining Emergency Preparedness."

8.2 Maintenance of the Emergency Plan, Emergency Plan Implementing Procedures, and Emergency Personnel Notification List

Station documents that are required to ensure emergency preparedness include: (1) the Surry Emergency Plan (SEP) and (2) the Emergency Plan Implementing Procedures (EPIPs). Nuclear Emergency Preparedness personnel shall review design changes and initiate appropriate revisions to the SEP and EPIPs when appropriate.

8.2.1 Annual Review of the Emergency Plan and Emergency Plan Implementing Procedures

Nuclear Emergency Preparedness personnel shall review the SEP and its implementing procedures at least annually, certifying that they are adequate and current. Nuclear Emergency Preparedness personnel shall also review the results of independent assessments of the emergency preparedness program and critiques of exercises and drills to evaluate their impact on station emergency preparedness documents. The results of these reviews shall be reported to the Facility Safety Review Committee (FSRC) and the documentation filed by Records Management.

8.2.2 Review of the Emergency Personnel Notification List

Nuclear Emergency Preparedness personnel shall ensure a review of the Emergency Personnel Notification List is performed at least quarterly, and shall ensure that required revisions are made. Documentation of this review shall be filed by Records Management.

8.2.3 Revision of the Emergency Plan

In accordance with 10CFR50.54(q)(3), proposed revisions to the SEP shall be screened/evaluated against 10CFR50.47(b) and 10CFR50, Appendix E, to determine whether the proposed change is a reduction in effectiveness. Any such changes shall be submitted to the NRC for approval prior to implementation in accordance with the requirements of 10CFR50.54(q)(4). The FSRC shall review and approve proposed revisions to the SEP.

8.2.4 Maintenance of Emergency Plan Implementing Procedures

Proposed revisions to EPIPs shall be reviewed to verify the effectiveness of the emergency plan is maintained as required by 10CFR50.54(q)(2). The Manager NEP shall review and approve proposed revisions to EPIPs.

8.2.5 Distribution of Emergency Plans

In accordance with 10CFR50.54(q)(5) revisions to the Emergency Plan shall be submitted to the NRC within 30 days following the assigned effective date. Revisions to the SEP will also be distributed to those offsite agencies requiring copies in order to perform their emergency response functions.

8.2.6 Review of Evacuation Time Estimates

Nuclear Emergency Preparedness personnel shall ensure evacuation time estimates (ETEs) are developed within 365 days of when U.S. Census Bureau decennial data becomes available. ETEs are a factor considered in the development of off-site protective action recommendations (see Section 6.3.1) and are provided to Commonwealth and local governmental authorities for use in developing off-site protective action strategies. ETEs are reviewed against estimated EPZ permanent resident population changes at least once a year and within 365 days of the date of the previous ETE or its most recent review. Increases of ETEs greater than the limits detailed in 10 CFR 50 Appendix E require the ETE analysis be updated. The decennial ETE and its updates are submitted to NRC as required by 10 CFR 50 Appendix E.

8.3 Training of Emergency Response Organization Personnel

The effectiveness of a response to a station emergency relates directly to the level of emergency preparedness maintained by emergency response organization personnel. Emergency preparedness is maintained through an integrated program that includes general orientation for all persons badged at the station and additional detailed training for persons assigned specific emergency response functions to supplement the general orientation and normal job related training.

NOTE: Update of references to TR-SU-TPG-2400, which has been superseded, is beyond the scope of this license amendment request.

The primary objectives of this emergency preparedness training program are to:

a) Ensure emergency response personnel maintain familiarity with the Surry Emergency Plan, its implementing procedures and their functional responsibilities during an emergency

b) Inform emergency response personnel of their functional role and responsibilities during an emergency

c) Familiarize emergency response personnel with significant changes to the Surry Emergency Plan and its implementing procedures

8.3.1 Responsibilities for Maintaining Emergency Preparedness Training

To ensure that regulatory requirements and guidance for conducting emergency preparedness training are met, a training program guide has been developed (TR-SU-TPG-2400, Surry Nuclear Emergency Responder Training Program Guide). Responsibilities for ensuring adequate emergency preparedness training are provided as follows:

a. The Site Vice President is responsible for ensuring station personnel are adequately trained in accordance with TR-SU-TPG-2400.

b. Department directors, managers and supervisors are responsible for ensuring their personnel receive training. This includes designating individuals who may serve as primary, interim or alternate emergency response personnel and ensuring they successfully complete the training specified by TR-SU-TPG-2400.

c. The Manager Nuclear Emergency Preparedness is responsible for developing and scheduling training programs that meet the requirements of this plan, and for maintaining records to document the training.

d. Nuclear Emergency Preparedness personnel other than those designated to develop training programs will independently ensure that the training required by TR-SU-TPG-2400 and this plan is accomplished.

8.3.2 Nuclear Employee and Visitor Training

All persons badged to enter the Protected Area unescorted receive, as part of Nuclear Employee Training, computer-based training (CBT) and annual retraining in the following subjects:

a) Station Policies and Procedures including, in part:
   1) Reporting abnormal conditions (e.g., fire, first aid event, etc.)
   2) Fire and First Aid alarms and announcements
   3) Response to Fire and First Aid emergencies

b) Radiation Protection Training including basic principles of radiological safety

c) Emergency Preparedness Training Overview including:
   1) General scope and overview of the Emergency Plan
   2) Station Emergency Alarm and announcements
   3) Response to Station Emergency Alarm
   4) Personnel accountability
   5) Visitor control during an emergency

6) Site evacuation

7) Emergency Plan Implementing Procedures

8) Emergency Organization

9) Emergency Control Centers (Emergency Response Facilities)

As appropriate, certain station visitors receive training in some or all of the above subjects in accordance with station administrative procedures.

NOTE: Update of references to TR-SU-TPG-2400, which has been superseded, is beyond the scope of this license amendment request.

8.3.3 Emergency Response Personnel Training

Personnel designated to fill interim, primary or alternate emergency response positions will receive training in accordance with TR-SU-TPG-2400. Emergency preparedness training not conducted by the NEP staff is conducted pursuant to supporting department training program guidance. NEP will ensure that this training is consistent with the provisions of TR-SU-TPG-2400. These training programs taken collectively establish the initial training and retraining requirements for all emergency response positions. Table 8.1 provides a listing of select emergency response positions along with an overview of the training provided. Revisions to TR-SU-TPG-2400 that affect those descriptions referenced in Table 8.1 will be reflected in the next scheduled revision of this Plan. Training exemptions and equivalent qualifications for required training sessions based on an individual's knowledge of the subject matter may be approved by the training program owner.

8.3.4 Cognitive Evaluations

Cognitive evaluations may include self critiques, group discussions, and/or tests administered following completion of training. Evaluations are normally administered by the course instructor and may be scheduled at the end of a work shop, learning activity, instructional unit, or a number of related units. A minimum score of 80% is considered passing on tests. For training incorporated into regularly scheduled continuing training programs, the passing criteria for that training program applies. Individuals failing to successfully complete the required training within the required time frame will be relieved of their emergency response assignments.

8.3.5 Task Performance Evaluations

Task performance evaluations are prescribed for individuals who must perform tasks as responders which are outside of their normal day-to-day responsibilities and may be satisfied through completion of a Job Demonstration Guide (JDG), participation in an appropriate drill or Simulator Exercise, facility training activity or included in classroom learning activities as part of the training requirement. JDG evaluations are conducted by the applicable primary responder, team leader or instructor and are scored on a pass/fail basis.

8.3.6 Training Records

Nuclear Emergency Preparedness is responsible for ensuring that required emergency preparedness training records are maintained. These records are maintained by Records Management.

The required emergency preparedness training records include:

a) Program Records: Attendance sheets, master copies of Job Demonstration Guides, master copies of tests and answer keys, copies of instructor guides, training rosters and extensions.

b) Trainee Records: Completed tests and responder training records.

8.4 Training of Offsite Support Personnel

The various offsite organizations which support the station during an emergency receive training as part of their own emergency preparedness programs. For example, the State and local governments conduct training for their personnel as part of their Radiological Emergency Response Plan program. However, in order to promote effective emergency response capability, the station offers site specific emergency response training on an annual basis to local offsite emergency support organizations which have agreed to provide assistance. The organizations include the Commonwealth of Virginia Department of State Police and local county sheriff's department, volunteer fire companies, and rescue squads.

The annual training shall address the following:

a) The basic scope of the Surry Power Station Emergency Plan

b) Emergency classifications

c) Notification methods

d) Basic radiation protection

e) Station access procedures

f) The individual, by title, in the station emergency response organization who will direct their activities onsite

g) Definition of their support roles

Training offered to local offsite support organizations will be coordinated with Station Safety and Loss Prevention or Station Security, as appropriate. Station Safety and Loss Prevention, Security and/or Nuclear Training may assist in the conduct of offsite training. Records of the training shall be maintained and filed by Records Management, and shall include letters of invitation (or record of telephone invitation), attendance sheets, and the curriculum outline.

8.5 Emergency Drills

As a part of maintaining emergency preparedness, periodic drills shall be conducted. The primary objectives of drills are to:

a) Ensure that facilities, equipment, and communication systems function as required

b) Demonstrate the adequacy of procedures used during an emergency response

c) Familiarize station emergency response personnel with planned emergency response actions

d) Disclose deficiencies which may require corrective action

Drills may be conducted independently, in conjunction with another drill, or as part of an exercise. The individual responsible for the drill shall ensure that all necessary documentation is maintained.

A scenario will be developed to support the conduct of each drill. The scenario should be designed to allow for open decision-making (free-play). If a drill is conducted in conjunction with another drill or as part

of an exercise, the drill scenario, objectives and narrative shall be incorporated into the overall drill/exercise package. Drill packages shall include:

a) Objectives of the drill
b) Evaluation criteria for the drill
c) Date and time period of the drill
d) Participating personnel or organizations
e) A narrative summary describing the overall integration of scenario events (e.g., simulated casualties, offsite assistance, rescue of personnel, simulated activity levels, and deployment of monitoring teams)
f) A time schedule of the real and simulated events

It is not required that all emergency response personnel assigned a particular emergency function participate in a drill covering that function. State and local governments will be allowed to participate in drills at their request. Participation by offsite organizations may be simulated.

At least once every eight-year exercise cycle, at least one drill shall be conducted involving CERC response to simultaneous events at Surry Power Station and North Anna Power Station.

Drills shall be controlled and observed by individuals qualified to conduct and evaluate the drill. Critiques will be used to document the evaluation of the drill. Deficiencies identified as a result of the drill evaluation will be presented to Station Management, and corrective actions will be coordinated through NEP.

Records of each drill will be maintained by Records Management and include the drill scenario package and the post-drill critique. Records of specific drills held in conjunction with an exercise may be integrated into the emergency exercise package (i.e., scope, objectives, critique, etc.).

The types and frequencies of drills conducted at the station are designated below.

Provisions for conducting post accident sampling drills, previously addressed herein, became obsolete upon implementation of contingency plans for obtaining and analyzing highly radioactive samples of reactor coolant, containment sump, and containment atmosphere. Although these contingency plans must be available during an accident; they do not have to be carried out in emergency plan drills or exercises. (Reference NRC Letter, Subject: Surry Units 1 and 2 - Issuance of Amendments Re: Elimination of Post-Accident Sampling System Requirements, dated December 18, 2001, Serial No. 01-761)

8.5.1 <u>Communications Drills</u>

Communications drills shall be conducted at least once per calendar year and shall include:

a) Use of emergency communications systems between the Control Room, the TSC, the CERC, the OSC, the NRC Operations Center, the Virginia EOC, the county EOCs, and the Onsite and Offsite Monitoring Teams
b) Sending, receiving, and verification of message content

8.5.2 <u>Fire Drills</u>

Fire drills shall be conducted in accordance with the requirements of the Surry Fire Protection Program.

8.5.3 Medical Emergency Drills

Medical Emergency drills shall be conducted at least once per calendar year and shall include:

a) A simulated contaminated injured individual

b) Participation by a local rescue squad

c) Transport to an offsite medical facility

d) Participation by the offsite medical facility

8.5.4 Environmental Monitoring Drills

Environmental Monitoring drills shall be conducted at least once per calendar year and shall include:

a) Collection of water, vegetation, soil, and air samples both onsite and offsite, as appropriate

b) Analysis of the above samples

c) Use of communications with the monitoring teams

d) Use of the appropriate procedures for collecting and analyzing samples and recording results

8.5.5 Radiological Monitoring Drills

Radiological Monitoring drills shall be conducted semi-annually with a maximum allowable grace period not to exceed 25%, and shall include:

a) Response to simulated elevated airborne and/or liquid activity levels, as appropriate

b) Response to simulated elevated area radiation levels

c) Analysis of the simulated radiological situation using the appropriate procedures

8.5.6 Combined Functional Drills

Combined Functional drills shall be conducted at least once during the interval between biennial exercises and involve a combination of some of the principal functional areas of onsite emergency response capabilities, such as:

a) Management and coordination of emergency response

b) Accident assessment

c) Protective action decision making

d) Plant system repair and corrective action

8.6 Emergency Exercises

An emergency exercise shall be conducted with a stated scope and objectives. The primary objectives of an emergency exercise are to:

a) Check the integrated capability of the various emergency response organizations to respond to an emergency

b) Test a major portion of the basic elements existing within the emergency response plans and organizations

c) Demonstrate the adequacy of procedures used during an emergency

d) Provide an opportunity for emergency response personnel to demonstrate their ability to perform planned emergency response actions

e) Disclose deficiencies which may require corrective action

8.6.1 Scheduling of Emergency Exercises

An emergency exercise shall be conducted at Surry Power Station at least once per biennium, normally on odd numbered years. All biennial exercises must include demonstration of response to at least the Site Area Emergency classification level.

At least once every eight-year exercise cycle, a drill or exercise should be initiated between 6:00 pm and 4:00 am. Unannounced exercises or drills are conducted on a periodic basis to the extent such exercises can be supported by affected internal and external organizations.

8.6.2 Emergency Exercise Content

Exercises are conducted on a periodic basis. The exercises allow demonstration of the key skills specific to emergency response duties in the Control Room, TSC, OSC, CERC, and Joint Information Center in order to implement the principal functional areas of emergency response. The exercises:

a) Test the adequacy of timing and content of implementing procedures and methods

b) Test emergency equipment and communications networks

c) Test the public notification system

d) Test the familiarity of emergency organization personnel with their duties

Scenarios are varied so major elements of the state, local and station plans and preparedness organizations are tested, including, at least once during the 8-year exercise cycle, the following:

a) Hostile action directed at the plant site

b) No radiological release or an unplanned minimal radiological release that does not require public protective actions

c) An initial classification of or rapid escalation to a Site Area Emergency or General Emergency

d) Implementation of strategies, procedures, and guidance developed under §50.54(hh)(2)

e) Integration of offsite resources with onsite response

8.6.3 Emergency Exercise Scenarios

Each emergency exercise shall be based on a preplanned written scenario. The overall exercise package shall address, but not be limited to:

a) Basic performance objectives of the exercise

b) Evaluation criteria used to check demonstration of performance objectives

c) Date, initiation time, and exercise duration

d) Participating organizations

e) Simulated events

f) Time schedule of the real and simulated events

g) A narrative summary describing the overall integration of scenario events such as simulated casualties, offsite assistance, rescue of personnel, use of protective equipment, simulated activity and radiation levels, and deployment of monitoring teams

h) a description of the number, locations, and duties of the exercise controllers; and

i) a description of the arrangements made for and advance materials to be provided to the controllers.

Advance knowledge of the scenario shall be minimized to ensure realistic participation by those involved.

8.6.4 Conduct of Emergency Exercises

The emergency exercise will be initiated and supervised by controllers. These controllers shall ensure that:

a) the information supplied to the participants is of sufficient detail to allow realistic analysis of the simulated events and to provide a basis for rational decision making;

b) the information is supplied on a real time basis; and

c) the exercise is not so structured as to prevent free play and independent decision making on the part of the participants.

8.6.5 Emergency Exercise Evaluation and Corrective Action

Emergency exercises shall be evaluated by qualified controllers. Controllers shall be selected based on expertise, knowledge of the areas to be evaluated, and familiarity with emergency response requirements. Observers may include personnel from federal, state, or local governments. The specific areas to be evaluated by the controllers will be defined in the form of pre-printed critique sheets.

Critiques will be held as soon as practicable after the exercise. Critiques should be attended by exercise controllers and key participants. Notes of critique comments shall be recorded.

Controllers shall complete critique sheets documenting their observations. Critique sheets shall be submitted in accordance with the schedule established for the exercise.

Within 60 days of the exercise, a Post-Exercise Critique Report shall be issued. Identified corrective actions will then be assigned for implementation.

8.6.6 Records of Emergency Exercises

The exercise scenario package and Post-Exercise Critique are filed by Records Management.

8.7 Testing and Maintenance of Emergency Equipment

Emergency equipment shall be periodically tested to identify and correct deficiencies in accordance with administrative procedures. For inventory purposes, an item-by-item count is not required if a mechanism is in place to assure the container has not been compromised since the previous satisfactory check. Inventories and tests shall be documented and forwarded to Records Management.

The testing shall include:

a) The contents of the emergency kits dedicated for emergency use shall be inventoried quarterly and following each use. The Manager Radiological Protection shall ensure these tests are conducted and documented.

b) Dedicated emergency survey instrumentation shall be inventoried and operationally checked quarterly and following each use. They shall be calibrated in accordance with manufacturer's recommendations. The Manager Radiological Protection shall ensure these tests are conducted and documented.

c) Self-contained breathing apparatus shall be inspected and operationally checked monthly and following use during an emergency. The Manager Radiological Protection shall ensure these tests are conducted and documented.

d) State and local ring down loop (Insta-phone) extensions and the ringdown phone to the Virginia EOC located at the station and CERC shall be operationally checked on a monthly basis. In addition, NRC Emergency Notification System extensions and NRC Health Physics Network extensions located at the station and CERC shall be operationally checked monthly. Nuclear Emergency Preparedness personnel shall ensure these tests are conducted and documented.

8.8 Informing the Public

Information describing the emergency notification process as well as actions that should be taken in the event of an emergency shall be provided to the public on an annual basis. Information provided to the public shall include:

a) Educational information on radiation
b) Contact points for additional information
c) Special needs of the handicapped
d) Initial actions following Early Warning System activation
e) Protective actions, such as sheltering or evacuation
f) Evacuation routes

The company will coordinate its efforts with State and local authorities to ensure the public is informed by using the best means available. These means may include:

a) Information in telephone books
b) Utility bill inserts
c) Newspaper ads
d) Postings in public areas
e) Information in calendars distributed to residents

The information will be distributed to ensure coverage within the 10 mile emergency planning zone.

The company shall also establish a telephone system for dealing with rumors. The telephone numbers will be announced over the Emergency Alert System and individuals within the 10 mile emergency planning zone will be invited to call collect.

The Manager Nuclear Fleet Emergency Preparedness shall ensure that a program to acquaint the news media with the following information is offered on an annual basis:

a) Emergency plans
b) Information concerning radiation
c) Points of contact for release of public information in an emergency.

8.9 Independent Review of the Emergency Preparedness Program

An independent review of the emergency preparedness program shall be conducted either:

a) at intervals not to exceed 12 months or

b) as necessary, based on an assessment against performance indicators, and as soon as reasonably practicable after a change occurs in personnel, procedures, equipment, or facilities that potentially could affect emergency preparedness, but no longer than 12 months after the change. In any case, all elements of the emergency preparedness program shall be reviewed every 24 months.

This review shall be conducted in accordance with 10 CFR 50.54 (t). This review shall include:

a) The Surry Emergency Plan and Implementing Procedures

b) Emergency Plan training

c) Emergency drills

d) Emergency exercises

e) Emergency equipment

f) Interfaces with State and local governments

g) Required records and documentation

This review shall be conducted by an internal company organization or outside consultant which has no direct responsibility for emergency preparedness.

The results of the review and recommendations for improvements shall be documented and reported to company management. The results regarding adequacy of interface between Dominion and State and local governments shall be made available to the cognizant offsite authority. Recommendations for improvement shall be evaluated and, when appropriate, assigned for corrective action.

The following records shall be filed by Records Management and maintained for 5 years:

a) The review results and recommended improvements

b) The answers to the recommended improvements

c) A description of the corrective actions taken

TABLE 8.1

EMERGENCY PREPAREDNESS TRAINING

EMERGENCY RESPONSE POSITION	SCOPE OF TRAINING (See Footnotes)
Station Emergency Manager	1,2,7,13,15
Shift Technical Advisor	1,2,13,15
Emergency Communicator	1,3,13
Emergency Procedures Coordinator	1,2,13
Emergency Operations Director	1,2,13,15
Emergency Maintenance Director	1,4,6,13
Emergency Technical Director	1,6,13,15
Emergency Administrative Director	1,6,7,13
Radiological Assessment Director	1,9,10,11,13,15
Radiation Protection Supervisor	1,10,11,13
Operational Support Center Director	1,4,5,13
OSC Support Team	1,4,5,13
Technical Support Team	1,6,13,15
Chemistry Team	1,12,13
Administrative Support Team	
- Team Leader	1,6,8,13
- Clerical Personnel	1,6,13
- Loss Prevention/Safety Personnel	1,13,14
Security Team	1,8,13
Dose Assessment Team	1,9,13
Sample Analysis and Monitoring Teams	1,11,13
Fire Brigade	1,13,14
First Aid Team	1,13,14
Damage Control Team	1,4,13
Search and Rescue Team	1,13,14
Corporate Response Manager and Technical Support Manager	1, 13, 16, 17
Nuclear News Manager and News Team	1, 13, 17, 18
Chief Technical Spokesperson and JIC Support Team	1, 13, 17, 18
Executive Liaison	1, 13, 16, 17
Operations Support Coordinator and Operations Support Team	1, 13, 15, 17
Radiological Assessment Coordinator	1, 9, 10, 13, 15, 17
Accident Assessment Team dose assessors	1, 9, 13, 17
HPN Communicator	1, 3, 13, 17
State & Local Emergency Communicator (CERC)	1, 3, 13, 17
CERC positions not listed above	1, 13, 17
Information Center Coordinators	1, 13, 19

SCOPE OF TRAINING FOOTNOTES:

1. Training provided to all emergency response personnel emphasizes an overview of: Emergency organization, emergency classification system, personnel accountability, emergency exposure limits, emergency response facilities, security access control and site evacuation process, and exposure control techniques. Station badged responders will receive this training as part of Nuclear Employee Training.

2. Training provided emphasizes: Assessing emergencies, classifying emergencies, notification systems, contaminated injured personnel actions, site evacuation, emergency radiation exposure authorization, offsite support group capabilities, and recovery.

3. Training provided emphasizes: Notifications and reports to offsite authorities and communication systems as appropriate for individual position assignments.

4. Training provided emphasizes: Emergency Plan and Damage Control Team organization, communication systems, and planning and coordination of damage control tasks.

5. Training provided emphasizes: Activation and administration of the Operational Support Center.

6. Training provided emphasizes: The activation and administration of the Technical Support Center.

7. Training provided emphasizes: Site evacuation procedures.

8. Training provided emphasizes: Notification of station personnel, personnel accountability/evacuation, and station access control during an emergency. The Security Department is responsible for the conduct of this training and ensuring that documentation is properly maintained for Security Department personnel.

9. Training provided emphasizes: Dose assessment.

10. Training provided emphasizes: Control of emergency Health Physics organization, emergency exposure evaluation and protective measures.

NOTE: Replacement of reference to Emergency Response Facility Computer System with Plant Computer System is beyond the scope of this license amendment request.

11. Training provided emphasizes: Respiratory protection, personnel decontamination, inplant monitoring, offsite monitoring, monitoring of emergency centers and remote assembly areas, contaminated injuries, and radio communications as appropriate for individual position assignments.

12. Training provided emphasizes: Chemistry sampling and high level activity sample analysis under emergency conditions.

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

14. Training provided emphasizes: Emergency organizational interfaces, search and rescue procedures, and communications systems. Fire Brigade members shall also receive Fire Brigade training as required by the Surry Power Station Fire Protection Program. First Aid Team members shall also receive training as required by station administrative procedures which meet the requirements of the Accident Prevention Manual.

15. Training provided emphasizes: Use of the Emergency Response Facility Computer System appropriate for individual position assignments.

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

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

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

19. Training provided emphasizes: Activation and administration of the Local Media Center appropriate for individual position assignments.

SURRY POWER STATION

EMERGENCY PLAN

SECTION 9

RECOVERY

Part	Subject	Page No.
9.0	Recovery	9.2
9.1	Recovery Methodology	9.2
9.2	Population Exposure	9.3
Figure 9.1	Example Recovery Organization	9.4

9.0 Recovery

The recovery process will be managed by a special, designated organization composed of Dominion personnel. The recovery organization is described in Figure 9.1. The basic organization may be modified as required to address the needs of the given situation. The Technical Support Manager assumes control and direction of the recovery operation with the authority and responsibilities for implementating and administering the recovery plan and organization. Responsibilities of the recovery organization include defining recovery objectives, developing a plan to accomplish these objectives, establishing controls and anticipating potential complications, monitoring the recovery effort and adjusting the plan accordingly, and evaluating accomplishments against the designated objectives.

The recovery process is implemented when the Corporate Response Manger, Technical Support Manager and the Station Emergency Manager, with concurrence of State and Federal agencies, have determined the station to be in a stable and controlled condition. Upon the determination, the NRC Operations Center, the Virginia Emergency Operations Center, and the local Emergency Operations Centers will be notified that the emergency has been terminated and any required recovery has commenced.

9.1 Recovery Methodology

The recovery organization will develop plans and procedures designed to address both immediate and long-term actions. The necessity to maintain protective measures implemented during the emergency will be evaluated and, if deemed appropriate, the recovery organization will recommend relaxation of the protective measures.

The following conditions shall be considered appropriate for the recommendation to relax protection measures:

a. Station parameters of operation no longer indicate a potential or actual emergency exists.
b. The release of radioactivity from the Station is controllable, no longer exceeds permissible levels and does not present a credible danger to the public.
c. The Station is capable of sustaining itself in a long term shutdown condition.

Because it is not possible to foresee all of the consequences of an event, specific recovery procedures may need to be written to address specialized requirements. Normal practices will be followed to the furthest extent possible with regard to maintenance, repair, modification, decontamination, and radiation exposure control activities. Where possible, existing station procedures will be utilized in the areas of operations, maintenance and radiological controls. Any special recovery procedures will require the same review and approval process accorded other station procedures and, as such, will require the approval of the Facility Safety Review Committee (FSRC). Recovery plan objectives and associated schedules will be periodically evaluated and modified, if necessary, to accommodate changing circumstances. Provisions to review, prioritize, coordinate and proceduralize recovery activities (e.g., repair, maintenance, modification, and decontamination) will also be addressed. The recovery organization addresses planning and coordination of the recovery effort (in cooperation with governmental officials, when required). Federal and state agencies may augment the recovery organization and participate in establishing recovery objectives.

9.2 Population Exposure

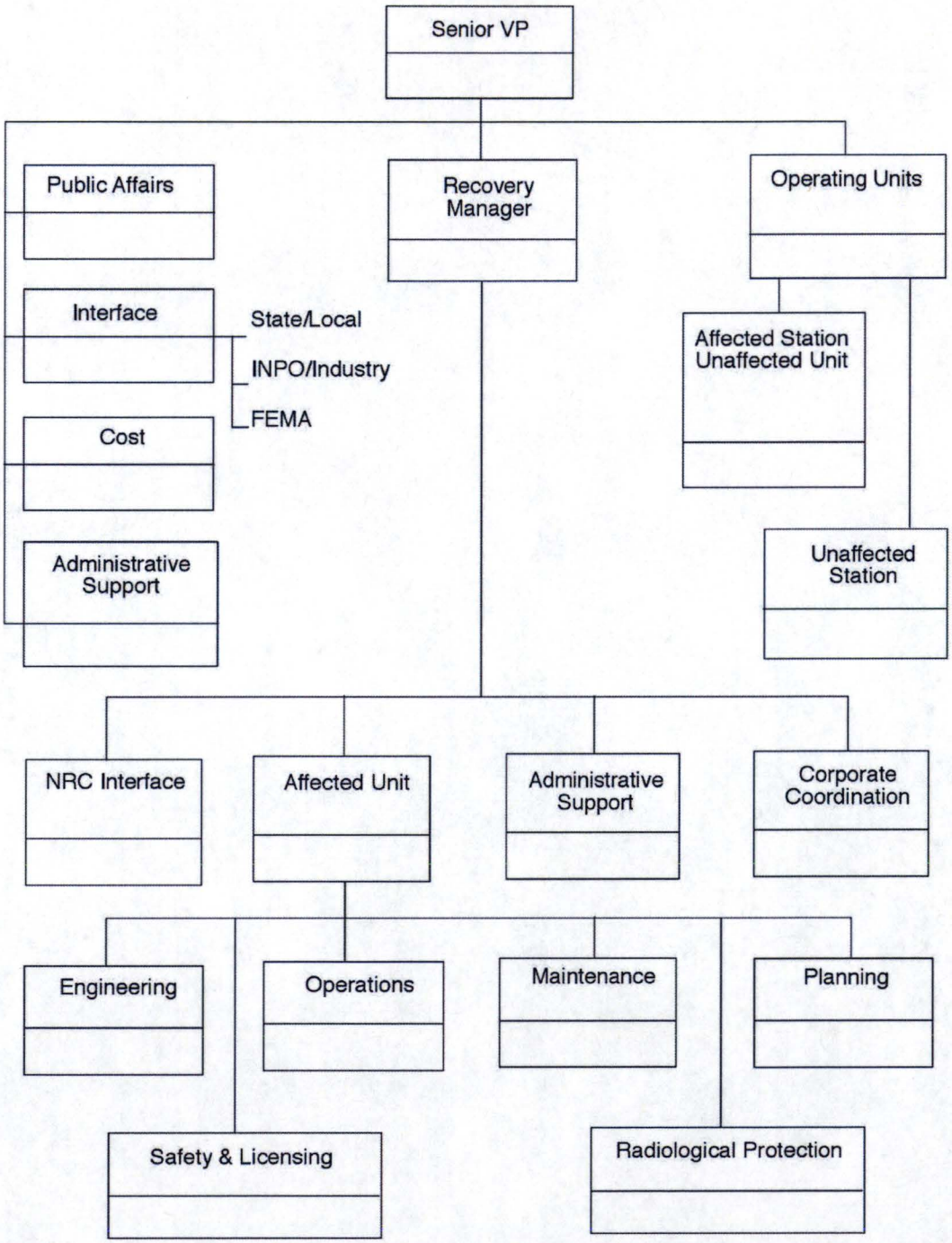
Total population doses shall be periodically estimated in the affected sectors and zones utilizing population distribution data from within the emergency planning zones.

Station personnel initially determine Total Effective Dose Equivalent (TEDE) due to external exposure from airborne material, external exposure from ground deposition, and internal exposure due to inhalation. Initial calculations are also performed for determination of Thyroid Committed Dose Equivalent (CDE) resulting from inhalation of radioiodines. The methodology used is consistent with that presented in EPA-400-R-92-001, MANUAL OF PROTECTIVE ACTION GUIDES AND PROTECTIVE ACTIONS FOR NUCLEAR INCIDENTS.

Determination of total population doses will be performed utilizing the Meteorological Information and Dose Assessment System (MIDAS) computer code or equivalent, and will include assessments of exposure received from (but not necessarily limited to) immersion, inhalation, ground shine, and ingestion of radioactive materials.

EXAMPLE RECOVERY ORGANIZATION

FIGURE 9.1



EXAMPLE RECOVERY ORGANIZATION

Graphic No: NB47

SURRY POWER STATION
EMERGENCY PLAN

SECTION 10
APPENDICES

Part	Subject
10.1	Agreement Letters
10.2	Radiation Emergency Plan, MCVH/VCU - Dominion Power
10.3	Federal Radiological Monitoring and Assessment Center (FRMAC) Operations Plan
10.4	Evacuation Time Study
10.5	EPIP Emergency Plan Cross Reference
10.6	NUREG-0654/Emergency Plan Cross Reference
10.7	Emergency Kit Contents
10.8	Emergency Classification/Initiating Conditions

AGREEMENT LETTERS

Federal Agencies: U.S. Department of Energy - Field Office, Oak Ridge

U.S. Department of Homeland Security - Fifth Coast Guard District

State Agencies: Virginia Department of Emergency Management

Virginia Department of Health

Virginia State Police - Fifth Division Chesapeake

Virginia Department of Game and Inland Fisheries

Virginia Department of Transportation

Virginia Commonwealth University Medical Center

Local Agencies: Surry - Chairman, Board of Supervisors

Surry - Sheriff

Surry - Volunteer Rescue Squad

Surry - Volunteer Fire Department

Isle of Wight - County Administrator

Isle of Wight - Sheriff

Isle of Wight - Volunteer Rescue Squad

Smithfield - Volunteer Fire Department

Rushmere Volunteer Fire Department

Newport News - City Manager

York - County Administrator

York - Sheriff

Williamsburg - City Manager

James City - County Administrator

(Maintained under separate cover by Corporate Nuclear Emergency Preparedness. Available upon request.)

APPENDIX 10.2

RADIATION EMERGENCY PLAN

MCVH/VCU - DOMINION POWER

(Maintained under separate cover by Corporate Nuclear

Emergency Preparedness. Available upon request)

APPENDIX 10.3

FEDERAL RADIOLOGICAL MONITORING AND ASSESSMENT CENTER (FRMAC)

OPERATIONS PLAN

(Maintained under separate cover by Corporate Nuclear

Emergency Preparedness. Available upon request.)

APPENDIX 10.4

EVACUATION TIME STUDY

(Maintained under separate cover by Corporate Nuclear Emergency Preparedness. Available upon request.)

APPENDIX 10.5

EPIP EMERGENCY PLAN

CROSS REFERENCE

EMERGENCY PLAN IMPLEMENTING PROCEDURES		EMERGENCY PLAN SECTION IMPLEMENTED
1.	Emergency Control Procedures	
1.01	Emergency Manager Controlling Procedure	4.2, 5.0, 6.1
1.02	Response to Notification of Unusual Event	4.2, 6.1
1.03	Response to Alert	4.2, 6.1
1.04	Response to Site Area Emergency	4.2, 6.1, 6.3
1.05	Response to General Emergency	4.2, 6.1, 6.3
1.06	Protective Action Recommendations	6.3
2.	Notification Procedures	
2.01	Notification of State and Local Governments	5.4, 6.1
2.02	Notification of NRC	6.1
3.	Augmentation Procedures	
3.02	Activation of Technical Support Center	5.0, 5.2.1
3.03	Activation of Operational Support Center	5.0, 5.2.1
3.05	Augmentation of Emergency Response Organization	5.0, 6.1
3.06	Activation of Corporate Emergency Response Center	5.0, 5.2.2
4.	Radiological Monitoring and Dose Assessment Procedures	
4.01	Radiological Assessment Director Controlling Procedure	5.2.1.9
4.02	Radiation Protection Supervisor Controlling Procedure	5.2.1.10
4.03	Dose Assessment Team Controlling Procedure	6.2
4.04	Emergency Personnel Radiation Exposure	6.4.1
4.05	Respiratory Protection	6.3.3.1
4.07	Protective Measures	6.3
4.09	Source Term Assessment	6.2
4.14	In-Plant Monitoring	5.2.1.20, 6.4.2
4.15	Onsite Monitoring	5.2.1.23, 6.4.2
4.16	Offsite Monitoring	5.2.1.18
4.17	Monitoring of Emergency Response Facilities	5.2.1.20
4.21	Evacuation and Remote Assembly Area Monitoring	5.2.1.19, 6.4.2
4.24	Gaseous Effluent Sampling During an Emergency	6.2
4.26	High Activity Sample Analysis	6.2
4.27	Exposure Control Emergency Response	6.4
4.29	TSC Radiation Monitoring System	5.2.1.20

EMERGENCY PLAN IMPLEMENTING PROCEDURES		EMERGENCY PLAN SECTION IMPLEMENTED
4.33	Health Physics Network Communications	5.2.1.17
4.34	Field Team Radio Operator Instructions	6.2
4.35	Chemistry Sampling	6.2, 7.3.6
5.	Protective Action Procedures	
5.01	Transportation of Contaminated Injured Personnel	6.4.3
5.03	Personnel Accountability	5.2.1.27, 6.3.2
5.04	Access Control	6.3.2
5.05	Site Evacuation or Company Dismissal	6.3.2
5.07	Administration of Radioprotective Drugs	6.3.3.3
5.08	Damage Control Guideline	5.2.1.5, 5.2.1.26
5.09	Security Team Leader Controlling Procedure	5.0, 5.2.1.16, 6.2
6.	Recovery and Restoration Procedures	
6.01	Re-entry/Recovery Guideline	9.1

APPENDIX 10.6

NUREG-0654/EMERGENCY PLAN

CROSS REFERENCE

NUREG-0654 CROSS REFERENCE INDEX
SURRY EMERGENCY PLAN

NUREG-0654 REF. SECTION	SEP SECTION NO.
A.1.a	5.3
A.1.b	5.4
A.1.c	Fig.5.4
A.1.d	5.0
A.1.e	5.2, 5.4
A.2.a	N/A
A.2.b	N/A
A.3	5.3, APP. 10.1
A.4	5.2, 5.3
B.1	5.1
B.2	5.0, 5.2
B.3	5.0
B.4	5.2.1.1
B.5	5.2.1, Tables 5.1 & 5.2
B.6	Fig. 5.4
B.7.a thru d	5.3.1, Table 5.2
B.8	5.3.2
B.9	5.3.3, 5.4, APP. 10.1
C.1.a	5.3, 5.4
C.1.b	5.4.7
C.1.c	5.4.7
C.2.a	N/A
C.2.b	5.3, 5.4
C.3	5.3
C.4	5.3
D.1	4.2
D.2	4.2
D.3	N/A
D.4	N/A
E.1	5.4, 6.1
E.2	6.1
E.3	6.1
E.4.a thru n	6.1
E.5	N/A
E.6	6.3.1, 7.6
E.7	6.3.1

NUREG-0654 REF. SECTION	SEP SECTION NO.
F.1.a	5.2, 5.4, 7.2
F.1.b	7.2
F.1.c	7.2
F.1.d	7.2
F.1.e	5.2
F.1.f	7.2
F.2	6.4.3
F.3	8.7
G.1	8.8
G.2	8.8
G.3.a	8.8, 7.1.4
G.3.b	7.1
G.4.a	5.3.1, Table 5.2
G.4.b	5.3.1
G.4.c	8.8
G.5	8.8
H.1	7.1
H.2	7.1
H.3	N/A
H.4	5.2
H.5	7.3
H.5.a	7.3.1, 7.3.3
H.5.b	7.3.2
H.5.c	7.3.4
H.5.d	7.3.5
H.6.a thru c	7.3, 7.4
H.7	7.3.2
H.8	7.3.3
H.9	7.1, 7.5
H.10	7.5, 8.7
H.11	APP. 10.7
H.12	7.1
I.1	4.2
I.2	7.3
I.3.a thru b	6.2
I.4	6.2
I.5	7.3.3, 7.3.4
I.6	7.3.2
I.7	7.3.2
I.8	5.2, 7.3.2
I.9	7.3.2
I.10	6.3.1
I.11	N/A

NUREG-0654 REF. SECTION	SEP SECTION NO.
J.1.a thru d	6.3.2
J.2	6.3.2
J.3	6.3.2
J.4	6.3.2
J.5	6.3.2
J.6.a thru c	6.3.3
J.7	6.1, 6.2, 6.3
J.8	6.3, APP.10.4
J.9	N/A
J.10.a	Fig 7.1, 7.2, 7.3, APP.10.4
J.10.b	APP.10.4
J.10.c	6.3.1
J.10.d thru l	N/A
J.10.m	6.3.1
J.11	N/A
J.12	N/A
K.1.a thru g	6.4
K.2	6.4
K.3.a-b	5.2, 6.4
K.4	N/A
K.5.a thru b	6.4.2
K.6.a thru c	6.4.2
K.7	6.4.2
L.1	6.4
L.2	6.4
L.3	N/A
L.4	6.4
M.1	9.1
M.2	9.0, Figure 9.1
M.3	9.0
M.4	9.2

NUREG-0654 REF. SECTION	SEP SECTION NO.
N.1.a	8.6
N.1.b	8.6
N.1.c	8.6.1
N.1.d	N/A
N.2.a	8.5.1
N.2.b	8.5.2
N.2.c	8.5.3
N.2.d	8.5.4
N.2.e.1	8.5.6
N.2.e.2	8.5.5
N.3.a thru f	8.5, 8.6
N.4	8.6.5
N.5	8.6.5
O.1	8.3
O.1.a	8.4
O.1.b	N/A
O.2	8.3
O.3	6.4, Table 8.1
O.4.a thru f	8.3
O.4g	8.4
O.4h	8.3, 8.4, APP.10.2
O.4i	8.3
O.4j	8.3
O.5	8.3
P.1	8.3
P.2	8.1
P.3	8.1
P.4	8.2
P.5	8.2.3
P.6	APP. 10.1-10.3
P.7	APP. 10.5
P.8	APP. 10.6
P.9	8.9
P.10	8.2.2

APPENDIX 10.7

EMERGENCY KIT CONTENTS

The contents of the nine (9) emergency kits established for use by emergency response personnel at Surry Power Station are specified in this appendix.

COMMUNICATIONS

No specific communications equipment is contained in any kit, but the following radios are available for emergency communication:

Portable - Health Physics Office

Mobile - Selected management and station vehicles

PROCEDURES

Selected EPIPs are positioned in various emergency response locations.

Distribution is specified by Records Management.

EMERGENCY KITS

Contents are specified on the following pages.

EMERGENCY KITS

HP AREA, CONTROL ROOM, OSC, TSC

QUANTITY				DESCRIPTION
HP AREA *		CR/OSC (1 ea.)	TSC	
1		1	--	First Aid Kit
2		2	--	Flashlight
10		10	--	D cell Batteries
24		--	--	C cell Batteries
1		1	--	Adjustable Wrench
1		1	--	Flat Head Screwdriver
1		1	--	Phillips Head Screwdriver
1		1	--	Channel locks
1		1	--	Pliers
1		1	--	Pocket knife
2		2	--	Mechanical pencils
2		2	--	China markers
1		1	--	Notebook
10		10	--	12"x20" Bag
--		10	--	36"x48" Bag
20		20	--	Ziplock bag (small)
1		1	--	Hemostats
1	1	1	--	10 Mile EPZ/Site Boundary Map
1		--	--	Safeguards roof ladder key
2pr		2pr	2pr	Coveralls
6pr		6pr	6pr	Rubber gloves
6pr		6pr	6pr	Cotton Inserts
2pr		2pr	2pr	Rubber Boots
2		2	2	Hoods (e.g., cotton)
4pr		4pr	4pr	Booties (e.g., plastic)
2		2	2	Full-face respirators
2		2	2	Iodine canister
1btl		1btl	1btl	Anti-fog
50ft		50ft	50ft	Barricade rope

EMERGENCY KITS

HP AREA, CONTROL ROOM, OSC, TSC

QUANTITY			DESCRIPTION
HP AREA *	CR/OSC (1 ea.)	TSC	
4	4	4	Radiation signs
4	4	4	Contamination signs
1	--	--	High Range Ion Chamber Survey Meter
3	--	--	Medium Range Ion Chamber Survey Meter
7	--	--	Low Range GM Survey Meter
7	--	--	Frisker with probe
6	--	--	Air sampler (with battery cables, if appropriate)
1	--	--	Battery powered air sampler
3	1	--	Air sampler head
--	--	--	TLD
--	--	--	SRD 0 - 1.5R or DAD
--	--	--	SRD charger (N/A if DADs used)
100	100	--	Smears
10	10	--	100 ml Bottle
1 bx	1 bx	--	Gelman filters
10	10	--	Silver Zeolites
1	--	--	Gas chamber

* NOTE: The HP Area Emergency Kit includes supplies (e.g., monitoring instrumentation) dedicated for use in other areas.

EMERGENCY KITS FOR OFFSITE AND REMOTE ASSEMBLY AREA (RAA) MONITORING TEAMS

QUANTITY		DESCRIPTION
OFFSITE (3)	RAA	
1	1	First Aid Kit
2	2	Flashlight
10	10	D cell batteries
1	--	Adjustable wrench
1	--	Flat head screwdriver
1	--	Phillips head screwdriver
1	--	Channel locks
1	--	Pliers
1	--	Pocket knife
2	2	Mechanical pencil
2	2	China markers
1	1	Notebook
1	--	Hand shovel
20	--	Ziplock bag (large)
10	10	12"x20" bag
--	10	36"x48" bag
20	--	Ziplock bag (small)
1	1	Hemostats
1	--	10-Mile EPZ/Site Boundary Map
1	--	Switchyard gate keys
--	1	RAA phone cabinet key
2pr	2pr	Coveralls
6pr	6pr	Rubber gloves
6pr	6pr	Cotton inserts
2pr	2pr	Rubber boots
2	2	Hoods
4pr	30pr	Booties
2	--	Full-face respirators
2	--	Iodine canister
1 btl	--	Anti-fog
--	25	Paper suit

EMERGENCY KITS FOR OFFSITE AND REMOTE ASSEMBLY AREA (RAA) MONITORING TEAMS

QUANTITY		DESCRIPTION
OFFSITE (3)	RAA	
--	50ft	Barricade rope
--	4	Radiation signs
--	4	Contamination signs
1	--	Air sampler head
100	100	Smears
10	--	100 ml bottles
1 bx	--	Gelman filters
10	--	Silver zeolite cartridges
1	--	Gas chambers
6 tablets/kit	--	KI tablets

APPENDIX 10.8

EMERGENCY CLASSIFICATION/INITIATING CONDITIONS

This information is presented in the Emergency Action Level Matrix and Emergency Action Level Technical Bases Document. These documents are subject to the same review and approval process as the Surry Emergency Plan and incorporated by reference.