

VIRGINIA ELECTRIC AND POWER COMPANY
RICHMOND, VIRGINIA 23261

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VIRGINIA ELECTRIC AND POWER COMPANY (DOMINION)
SURRY POWER STATION UNITS 1 AND 2
SURRY INDEPENDENT SPENT FUEL STORAGE INSTALLATION
REVISION TO SURRY POWER STATION EMERGENCY PLAN

Pursuant to 10 CFR 50.54(q) and 10 CFR 72.44(f), attached is a revision to the Surry Power Station Emergency Plan. This revision does not implement actions that decrease the effectiveness of our Emergency Plan. The Emergency Plan continues to meet the standards of 10 CFR 50.47(b). Please update your manual by performing the actions described in Attachment 1, Tabulation of Changes.

Your attention is also directed to Attachment 2, Surry Emergency Plan Revision 47 Summary. This information is provided to facilitate your review of the enclosed Emergency Plan revision.

No commitments are made by this letter. If you have any questions or require additional information, please contact Mr. David Sommers at (804) 273-2823.

Very truly yours,



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Attachments

AX45

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**ATTACHMENT 1
TABULATION OF CHANGES**

**VIRGINIA ELECTRIC AND POWER COMPANY (DOMINION)
REVISION TO SURRY EMERGENCY PLAN**

Enclosed is a recent revision to the Surry Power Station Emergency Plan. Please take the following actions in order to keep your manual updated with the most recent revision.

REMOVE AND DESTROY	EFFECTIVE DATE	INSERT	EFFECTIVE DATE
SPS Emergency Plan, Rev. 46	1/13/2003	SPS Emergency Plan, Rev. 47	1/7/2004

Emergency Plan Privacy and Proprietary Material has been removed. Reference Generic Letter No. 81-27.

ATTACHMENT 2
SURRY EMERGENCY PLAN REVISION 47 SUMMARY

- 1 Added Hurricane Warning in effect for Surry County as additional indication and deleted reference to duration of 12 hours prior to when winds expected to arrive. (Table 4.1, Initiating Conditions: Notification of Unusual Event #19, and Appendix 10.8, Emergency Classification / Initiating Conditions #19)
- 2 Deleted formal classroom or classroom with respect to training, written with regard to test, replaced Nuclear Power Station General Employee Training with Nuclear Employee Training, and updated passing percentage from 70% to 80%. These revisions update descriptions to reflect current practices, e.g., computer-based training and testing. (Sections 6.3.3.1, Respiratory Protection, 6.3.3.2, Protective Clothing, 8.3.4, Cognitive Evaluations, and 8.3.5, Task Performance Evaluations)
- 3 Added reference to visual indicator in areas where noise levels might exceed the volume of the loudspeakers to description of public address and intercom system. (Section 7.2.1.1, Public Address and Intercom System)
- 4 Updated titles where appropriate, i.e., Vice President – Nuclear Operations changed to Senior Vice President – Nuclear Operations, Shift Supervisor changed to Shift Manager, and Assistant Shift Supervisor changed to Unit Supervisor. (Sections 5.0, Organizational Control of Emergencies, 5.2, Onsite Emergency Organization, 6.1, Activation of the Emergency Plan, 7.1.2, Operational Support Center, and 8.1, Responsibilities for Maintaining Emergency Preparedness, Table 5.1, Minimum Shift Manning Requirements, Figures 5.1, Station Emergency Organization Prior to Augmentation, and 5.2, Station Emergency Organization Following Augmentation, and Appendix 10.11, Notification of Unusual Events #13 & #21, Alerts #18 & #28, Site Area Emergencies #15 & #23, and General Emergencies #10 & #11).
- 5 Added percentage fuel damage represented by High Range Letdown Radiation Monitor classification thresholds for clarification/information in Appendix 10.8, Emergency Classification / Initiating Conditions Notification of Unusual Event #6 and Alert #8.

6 Miscellaneous administrative revisions:

- Figure 7.2, Surry Power Station, Monitoring Location Listing: Updated reference to source document: VPAP-2103S, Rev. 4, Attachment 8, Environmental Sampling Locations, updated to refer to Rev 5. There were no changes to the information in this figure.
- References to the Joint Public Information Center (JPIC) updated to reference the Joint Information Center (JIC) per Corporate Emergency Response Plan Revision 10. (Section 1.1, Acronyms and Abbreviations, Section 5.3.1.5, Release of Information to News Media, Section 7, Table of Contents, Section 7.0, Emergency Facilities and Equipment, Section 7.1.6, Joint [Public] Information Center and Local Media Center, Table 7.1, ERF Communications, and Figure 7.3, Communications Links)
- Updated Appendix 10.5, EPIP Emergency Plan Cross Reference, to reflect replacement of EIPs 4.22, Post Accident Sampling of Containment Air, 4.23, Post Accident Sampling of Reactor Coolant, and 4.25, Liquid Effluent Sampling During an Emergency, with new EPIP-4.35, Chemistry Sampling.



Dominion

Emergency Plan

Title: Surry Power Station Emergency Plan

Revision Number:

47

Effective Date:

JANUARY 7, 2004

Revision Summary:

Revision 47 updates this entire document. Revised material includes, but is not limited to:

- Clarification of emergency action level condition addressing projection of hurricane force winds onsite and its associated indications and addition of note identifying percentage fuel failure associated with classification thresholds.
- Clarification of plant public address system description to reflect compensatory measures in high-noise areas.
- Clarification of terms describing training to reflect current practices.
- Update list of implementing procedures and titles to reflect organizational changes.

Approvals on File

SURRY POWER STATION
EMERGENCY PLAN

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EMERGENCY PLAN

SECTION 1
DEFINITIONS

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1.0 Definitions

- 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 Radiological Emergency Response Plan (COVRERP) - Annex to Volume II of the Commonwealth of Virginia Emergency Operations Plan - Peacetime Disasters.
- 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 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.
- Exclusion Area - The company-owned area within 1650 feet of Surry Unit 1 containment.
- Exercise - A test of the response capabilities of the emergency organization that permits the evaluation of training and response to a given situation. Exercises are conducted in accordance with pre-planned scenarios with defined objectives.
- Interim - A temporary or provisional emergency response position or facility which is augmented or transferred as resources become available.
- 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 Emergency Operations Facility (LEOF) - A near site facility where the Recovery Manager controls overall emergency response efforts.

- 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 Exclusion Area, but beyond Protected Area.
- Offsite - Beyond the Exclusion Area.
- 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 Team, the First Aid Team, and the Search and Rescue Team.
- Primary Sector - The 22½° 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.
- 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

AE	-	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
CEOF	-	Central Emergency Operations Facility
CERC	-	Corporate Emergency Response Center
CERP	-	Corporate Emergency Response Plan
CERT	-	Corporate Emergency Response Team
CFR	-	Code of Federal Regulations
CH	-	Charging System
cm	-	Centimeter
COVRERP	-	Commonwealth of Virginia Radiological Emergency Response 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
DEM	-	Department of Emergency Management (State)
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 <i>exempli gratia</i>]
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
ERFCS	-	Emergency Response Facility Computer System
ERGs	-	Emergency Response Guidelines
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
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 <i>id est</i>]
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 (formerly the Joint Public Information Center, JPIC)
KI	-	Potassium Iodide
Kr	-	Krypton
LAN	-	Local Area Network
LCO	-	License Condition of Operation
LEOF	-	Local Emergency Operations Facility
LFA	-	Lead Federal Agency
LMC	-	Local Media Center
LOCA	-	Loss of Coolant Accident
LW	-	Liquid Waste
MCL	-	Management Counterpart Link
MCV/MCVH	-	Medical College of Virginia/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
NPSEPT	-	Nuclear Power Station Emergency Preparedness Training
NRC	-	Nuclear Regulatory Commission
NSSS	-	Nuclear Steam Supply System
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
PBX	-	Private Branch exchange (Communications 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
RTM	- Response Technical Manual
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
SNSOC	- Station Nuclear Safety & Operating Committee
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
VG	- Vents - Gaseous
VPAP	- Virginia Power Administrative Procedure
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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2.0 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 is designed for a core power output of 2546 MWt, which results in a gross electrical output of approximately 852 MWe. 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

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, which includes activation of both station and corporate emergency response teams. 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.

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 Station Nuclear Safety and Operating Committee (SNSOC) 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 a six 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 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:

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

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

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

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

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

Tables 4.1 - 4.4 list initiating conditions for each emergency classification. Appendix 10.8 provides the specific plant parameters for the classification of events. In Attachment 1 to EPIP-1.01, "Emergency Manager Controlling Procedure", these conditions are grouped by event category for easy reference and identification. For each condition, specific indications available from instruments and unit operating response are defined in EPIP-1.01 to confirm that the proper thresholds have been met for declaring a given classification.

INITIATING CONDITIONS: NOTIFICATION OF UNUSUAL EVENT - TABLE 4.1

NOTE: The alpha-numeric designator, [A.N], preceding each condition below, indicates the Emergency Action Level designator used in EPIP-1.01, Attachment 1.

1. [A.1] Inability to reach required unit operating condition within T.S. time limits
2. [A.4] Failure of a safety or relief valve to close after pressure reduction
3. [A.7] Loss of plant communications capability
4. [A.10] Unplanned loss of most or all safety system annunciators for greater than 15 minutes
5. [B.3] Leak rate or leakage requiring plant shutdown IAW T.S.
6. [C.3] Fuel clad damage indication
7. [C.12] Spent Fuel Storage Facility accident
8. [E.5] Effluent release GREATER THAN ODCM allowable limit
9. [G.3] Major Secondary line break
10. [H.3] Loss of offsite power or onsite AC power capability
11. [I.3] Fire lasting GREATER THAN 10 minutes
12. [J.4] Security threat, unauthorized attempted entry, or attempted sabotage
13. [K.3] Aircraft crash or unusual aircraft activity
14. [K.6] Onsite explosion
15. [K.9] Onsite or nearsite release of toxic or flammable liquids or gases
16. [K.13] Turbine rotating component failure with no casing penetration
17. [L.3] Earthquake detected
18. [L.5] Tornado within Protected area or Switchyard
19. [L.8] Hurricane force winds projected onsite
20. [L.11] Flood or low water level
21. [M.4] Station conditions which warrant increased awareness of state and/or local authorities

INITIATING CONDITIONS: ALERT - TABLE 4.2

1. [A.3] Loss of cooling function needed for Cold Shutdown and Refueling Condition
2. [A.6] Trip following ATWT that takes the reactor subcritical
3. [A.9] Unplanned loss of safety system annunciators with compensatory indicators unavailable or a transient in progress
4. [A.12] Evacuation of Main Control Room required
5. [B.2] RCS leak rate limit - EXCEEDED
6. [B.5] Excessive Primary to Secondary leakage with loss of offsite power
7. [B.6] Gross Primary to Secondary leakage
8. [C.2] Severe Fuel Clad Damage
9. [C.10] Fuel damage accident with release of radioactivity to containment or fuel buildings
10. [C.11] Loss of cask/fuel containment barriers or accidental criticality
11. [D.3] High Containment radiation, pressure and temperature
12. [E.3] High radiation or airborne contamination levels indicate a severe degradation in control of radioactive material
13. [E.4] Effluent release GREATER THAN 10 times ODCM allowable limit.
14. [G.2] Major Secondary line break with Primary to Secondary leakage GREATER THAN 10 gpm
15. [H.2] Loss of all offsite and onsite AC power
16. [H.5] Loss of all onsite DC power
17. [I.2] Fire potentially affecting station safety systems
18. [J.3] Ongoing Security compromise or bomb potentially affecting station safety systems
19. [K.2] Aircraft crash on the facility
20. [K.5] Explosion damage to facility.
21. [K.8] Entry of toxic or flammable gases or liquids into plant facility
22. [K.11] Missile damage to safety related equipment or structures
23. [K.12] Turbine failure with penetration
24. [L.2] Earthquake GREATER THAN OBE levels
25. [L.4] Tornado striking facility
26. [L.7] Hurricane winds near design basis level experienced or projected
27. [L.10] Flood or low water level near design levels
28. [M.3] Station conditions which have the potential to degrade or are actually degrading the level of safety of the station

INITIATING CONDITIONS: SITE AREA EMERGENCY - TABLE 4.3

1. [A.2] Loss of Function needed for unit HSD condition
2. [A.5] Failure of the reactor to trip (ATWT)
3. [A.8] Inability to monitor a significant transient in progress
4. [A.11] Evacuation of Main Control Room with control NOT established within 15 minutes
5. [B.1] RCS leak rate exceeds makeup capacity
6. [B.4] Steam generator tube rupture with loss of offsite power
7. [C.1] Core damage with possible loss of coolable geometry
8. [C.9] Major fuel damage accident with radioactive release to containment or fuel buildings
9. [D.2] High Containment radiation, pressure and temperature
10. [E.2] Release imminent or in progress and site boundary doses projected to exceed 100 mrem TEDE or 500 mrem Thyroid CDE
11. [G.1] Major Secondary line break with Primary to Secondary leakage GREATER THAN 50 gpm and fuel damage indicated
12. [H.1] Loss of offsite and onsite AC power for more than 15 minutes
13. [H.4] Loss of all onsite DC power for GREATER THAN 15 minutes
14. [I.1] Fire resulting in degradation of safety systems
15. [J.2] Imminent loss of physical Station control
16. [K.1] Aircraft damage to vital plant systems
17. [K.4] Severe explosive damage
18. [K.7] Entry of toxic or flammable gases or liquids into plant vital areas other than the Control Room
19. [K.10] Severe missile damage to safety systems
20. [L.1] Earthquake GREATER THAN DBE levels
21. [L.6] Sustained winds in excess of design levels experienced or projected
22. [L.9] Flood or low water level above design levels
23. [M.2] Station conditions which may warrant notification of the public near the site

INITIATING CONDITIONS: GENERAL EMERGENCY - TABLE 4.4

1. [B.7] Loss of 2 of 3 fission product barriers with potential loss of 3rd barrier
2. [B.8] Fuel failure with steam generator tube rupture
3. [C.4] Probable large radioactivity release initiated by LOCA with ECCS failure leading to core degradation
4. [C.5] Probable large radioactivity release initiated by loss of heat sink leading to core degradation
5. [C.6] Probable large radioactivity release initiated by failure of protection system to bring reactor subcritical and causing core degradation
6. [C.7] Probable large radioactivity release initiated by loss of AC and all feedwater
7. [C.8] Probable large radioactivity release initiated by LOCA with loss of ECCS and containment cooling
8. [D.1] Extremely high Containment radiation, pressure and temperature
9. [E.1] Release imminent or in progress and site boundary doses projected to exceed 1.0 Rem TEDE or 5.0 Rem Thyroid CDE
10. [J.1] Loss of Station physical control
11. [M.1] Any major internal or external event which singly or in combination cause massive damage to station facilities or may warrant evacuation of the public

4.3 State and Local Government Classification System

The Commonwealth of Virginia Radiological Emergency Response Plan (COVRERP) 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 COVRERP 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.

COVRERP's 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 Commonwealth of Virginia Department of Emergency Management 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 Commonwealth of Virginia Department of Emergency Management. (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 Local Emergency Operations Facility (LEOF) is activated simultaneously with, but independent of, the TSC. The LEOF is staffed by station and corporate personnel, including the Recovery Manager, who directs the activities of this facility. Once the LEOF is staffed, the Recovery Manager becomes the liaison between the inplant emergency response effort headed by the Station Emergency Manager and the Corporate Emergency Response Team (CERT). Responsibilities of the Recovery Manager, once the LEOF 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. Specific information relating to the staffing and reporting structure of the LEOF organization is provided in the Corporate Emergency Response Plan (CERP). The Recovery Manager reports to the Corporate Response Manager who directs the activities of the CERT at the Corporate Emergency Response Center (CERC). The CERC will be activated at an Alert or higher emergency classification. The Corporate Response Manager is a senior level company executive who is responsible to the President of the Company for the total execution of the company's emergency response effort. He has the ultimate authority to commit company resources and set policy as part of managing the long term recovery effort. More detailed information on the composition of the CERT and their responsibilities is provided in the CERP.

5.1 Normal Station Organization

The Site Vice President is ultimately responsible for the operation of the Station. The minimum staff required to conduct Station operation is maintained at the station at all times. For purposes of the Emergency Plan, the 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 Onsite Emergency 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 Team 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), take initial mitigative actions in accordance with emergency operating procedures, make notifications to off-site authorities, and initiate a callout of supplementary emergency response personnel as required. The EIPs are used procedurally to control these actions.

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 Recovery 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. Upon activation of the Local Emergency Operations Facility (LEOF), the Recovery Manager will be responsible for notifying the State and local agencies of the emergency status. In addition, the Recovery Manager will be responsible 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 Commonwealth of Virginia Department of Emergency Management (DEM), and the NRC. Upon activation of the LEOF, the LEOF staff becomes responsible for notification of State and local governments. The minimum information to be conveyed is specified in the EPIPs.

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 EIPs 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 Station Nuclear Safety and Operating 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 LEOF.

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 Team, First Aid Team, and the Search and Rescue Team. Additional duties include evaluating onsite radiological conditions, ensuring that appropriate monitoring and sampling are performed, verifying 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 Team, 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, provide station security, and activate the LEOF. 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.

Once the LEOF is activated, the Dose Assessment Team Leader will report results of offsite releases and dose projections to date to the RAC in the LEOF. 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 LEOF. The Dose Assessment Team will then provide support to the RAD regarding onsite response and interface with the LEOF.

5.2.1.18 Offsite Monitoring Teams

These Teams will report to the Dose Assessment Team in the TSC or the LEOF, once activated. These Teams will provide offsite monitoring and sample collection as directed by the Dose Assessment Team.

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 Team, 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 Team, 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 Team

The Fire Team members arriving at the Station to augment the on-shift Fire Team 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 Team will combat fires in accordance with the Station Fire Protection Program. The on-shift Fire Team 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 LEOF Emergency Position and Team Descriptions

The LEOF Emergency Organization, when fully implemented, will consist of the positions and teams as described in the Corporate Emergency Response Plan. Guidance for selection of emergency responders is provided in administrative procedures.

5.3 Augmentation of Onsite Emergency 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, by letters of agreement, in Appendix 10.1 of this Plan.

If conditions at the Station require an Alert or higher classification, the CERC, LEOF, TSC and OSC shall be activated. The facility activation goal for the LEOF is approximately 90 minutes, while the activation goal for the TSC and the OSC is approximately 60 minutes. The SEM would normally forward information or request additional support through the Recovery Manager located in the LEOF (See Figure 5.4). Upon completion of the notification, the Recovery Manager would notify the Corporate Response Manager and provide recommendations concerning additional manpower, equipment, services, and the overall participation of the Corporate Emergency Response Team (CERT). Additional resources shall be obtained through personnel assigned to the CERT. Those additional personnel directed to report to the site during the emergency shall report to either the SEM or Recovery Manager for assignment, as appropriate.

The Corporate Response Manager has the ultimate responsibility for directing the corporate emergency response. Corporate support would be coordinated between the SEM and the Recovery Manager at the LEOF. The Recovery Manager and his staff will serve as control point of contact between the Station, corporate emergency response in Richmond, and governmental authorities. In the event that the LEOF becomes uninhabitable, the functions of the LEOF will be transferred to the Central Emergency Operations Facility (CEOF) located in Glen Allen, Virginia.

5.3.1 CERT Notification and Response

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

5.3.1.1 Environmental Monitoring

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

5.3.1.2 Logistics Support for Emergency Personnel

CERT Administrative Services will be responsible for all administration and logistics including accommodations, corporate communications, purchasing, finance, commissary, sanitary, transportation, and security services.

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

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

5.3.1.4 Interface with Governmental Authorities

CERT management is responsible for contacting governmental agencies when coordinating mobilization of resources or requesting additional support. The LEOF, 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 in the Corporate offices and, when activated, at the Local

Media Center in the Surry Nuclear Information Center (SNIC). The process for preparing, reviewing and distributing information to the public during emergencies is detailed in the CERP.

5.3.2 Vendor and Contractor 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 Commonwealth Laboratories, Richmond, VA (75 minutes)
- 3) Medical College of Virginia, 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 Radiological Health Program 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. Procedures for obtaining offsite services are provided in Abnormal Procedures and EIPs. Responding rescue squads are trained in the handling, treatment, and transportation of injured personnel.

The Medical College of Virginia (MCV), Virginia Commonwealth University, has developed an emergency plan designed to provide medical care in the case of a radiation emergency. The MCV Radiation Emergency Plan supports the company's nuclear power stations in the case of occupational and/or major accidents, including contaminated personnel. In the event of a need for their support, a call ahead to MCV will be made to alert them to activate their emergency plan. A copy of the MCV 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. These agreements and any new agreements will be included in Appendix 10.1 upon the next plan revision. Negotiation responsibility lies with the Director Nuclear Protection Services and 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 LEOF, 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 Radiological Emergency Response Plan is also implemented and the State 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.

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 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.

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 COVREMP.

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 LEOF upon activation.

5.4.2 Commonwealth of Virginia Department of Health

Department of Health personnel, in coordination with the DEM, provide technical advice and assistance on radiological accident assessment, protective actions, radiological exposure control, and radiological monitoring. (Reference COVREMP for more specific information). Upon either an Alert or higher classification, the Department of Emergency Management will notify the Virginia State Department of Health (Radiological Health Program). The Department of Health will implement its response procedures. The local county health department is the primary health response agency, with the State Department of Health providing assistance to them, as required, with emphasis on the special requirements for those individuals who are contaminated with radioactivity. Accident assessment personnel, as part of the Radiological Emergency Response Team (RERT), will operate from the State EOC.

5.4.3 Additional State Agency Support

Additional State organizations having possible responsibilities in a radiological emergency are listed in COVREMP, Annex I-V to Volume II, Appendix 2, Organization. Requests for support services from these organizations will be coordinated through DEM by the SEM or the Recovery 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. Verify 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 Recovery 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 the DEM 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 verify 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 DEM.

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 Lead Federal Agency (LFA) 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 LFA.

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

The SEM, Recovery Manager or Corporate Response Manager may request FRMAC assistance directly or through the NRC (LFA). The Company will provide designated facilities for the NRC (LFA) in the LEOF. 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

<u>Major Functional Area</u>	<u>Major Tasks</u>	<u>Position Title</u>	<u>Additional within approximately:</u>			
			<u>Shift</u>	<u>45 Min.</u>	<u>60 Min.</u>	
Plant Operations and Assessment of Operational Aspects	Plant Operations	Shift Manager/Unit Supervisor (SRO)	2*	--	--	
		Control Room Operator (RO)	3*	--	--	
		Control Room Operator (AO)	4	--	--	
Emergency Direction and Control	Direction and Control of onsite Emergency Activities	Station Emergency Manager	1***	--		
Notification/Communication	Notify station, local, State, and Federal personnel and maintain communication	Emergency Communicator	2***	--	2	
Radiological Accident Assessment and Support of Operational Accident Assessment	Local Emergency Operations Facility (LEOF)	Recovery Manager			(Refer to Table 5.2)	
		TSC Offsite Dose Assessment	Radiological Assessment Director	1***	--	1
		LEOF Offsite Dose Assessment	Radiological Assessment Coordinator			(Refer to Table 5.2)
Offsite Surveys	Offsite Monitoring Team	Leader	--	--	2	
		Member	--	--	2	
Onsite (out of plant) Surveys	Onsite Monitoring Team	Leader	--	--	1	
		Member	--	--	1	
Inplant Surveys/Radiochemistry	Inplant Monitoring Team	Leader	1	--	1	
		Member	1	--	1	
Chemistry	Chemistry Team	Leader	--	--	1	
		Member	1	--	1	

<u>Major Functional Area</u>	<u>Major Tasks</u>	<u>Position Title</u>	<u>Additional within approximately:</u>			
			<u>Shift</u>	<u>45 Min.</u>	<u>60 Min.</u>	
Plant System Engineering, Repair and Corrective Action	Technical Support	Shift Technical Advisor (STA)	1*	--	--	
		Operational – Technical Support Team Member (Operational Advisor)	--	--	1 ⁽¹⁾	
		Core - Technical Support Team Member	--	--	1 ⁽²⁾	
		Electrical – Technical Support Team Member	--	--	1	
		Mechanical – Technical Support Team Member	--	--	1	
	Repair and Corrective Action		Mechanical Maintenance - Damage Control Team Member	1**	1	1
			Rad Waste Operator - Damage Control Team Member	1***	--	--
			Electrical Maintenance - Damage Control Team Member	1**	--	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	1***	--	2	
		Personnel Monitoring Team Leader	1***	--	2	

<u>Major Functional Area</u>	<u>Major Tasks</u>	<u>Position Title</u>	<u>Additional within approximately:</u>		
			<u>Shift</u>	<u>45 Min.</u>	<u>60 Min.</u>
Firefighting and Rescue Operations	Firefighting	Fire Team Members	5***	5*** plus local support	
First Aid and Rescue Operations	First Aid and Rescue	First Aid Team Members	2***	2*** plus local support	
Site Access Control and Personnel Accountability	Security and Personnel Accountability	Security Personnel		(Proprietary)	
			13	1	26

NOTES:

- * Station Technical Specifications allowances for reduced staffing with both units in cold shutdown condition apply.
 - ** 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.
 - *** This coverage is provided by personnel who may be assigned other functions.
- (1) The candidates for this position are limited to qualified STAs, SROs, former STAs, or former SROs. Concurrence for change to position title and resource pool used to staff position provided by NRC via letter dated July 22, 1993.
 - (2) This coverage previously required within approximately 30 minutes. Change Approved per NRC Region II letter, Subject: Surry and North Anna Proposed Emergency Plan Changes, May 18, 1990. The on-duty Shift Technical Advisor performs the responsibilities of this position prior to augmentation. Approval was based on factors outlined in the referenced letter remaining constant.

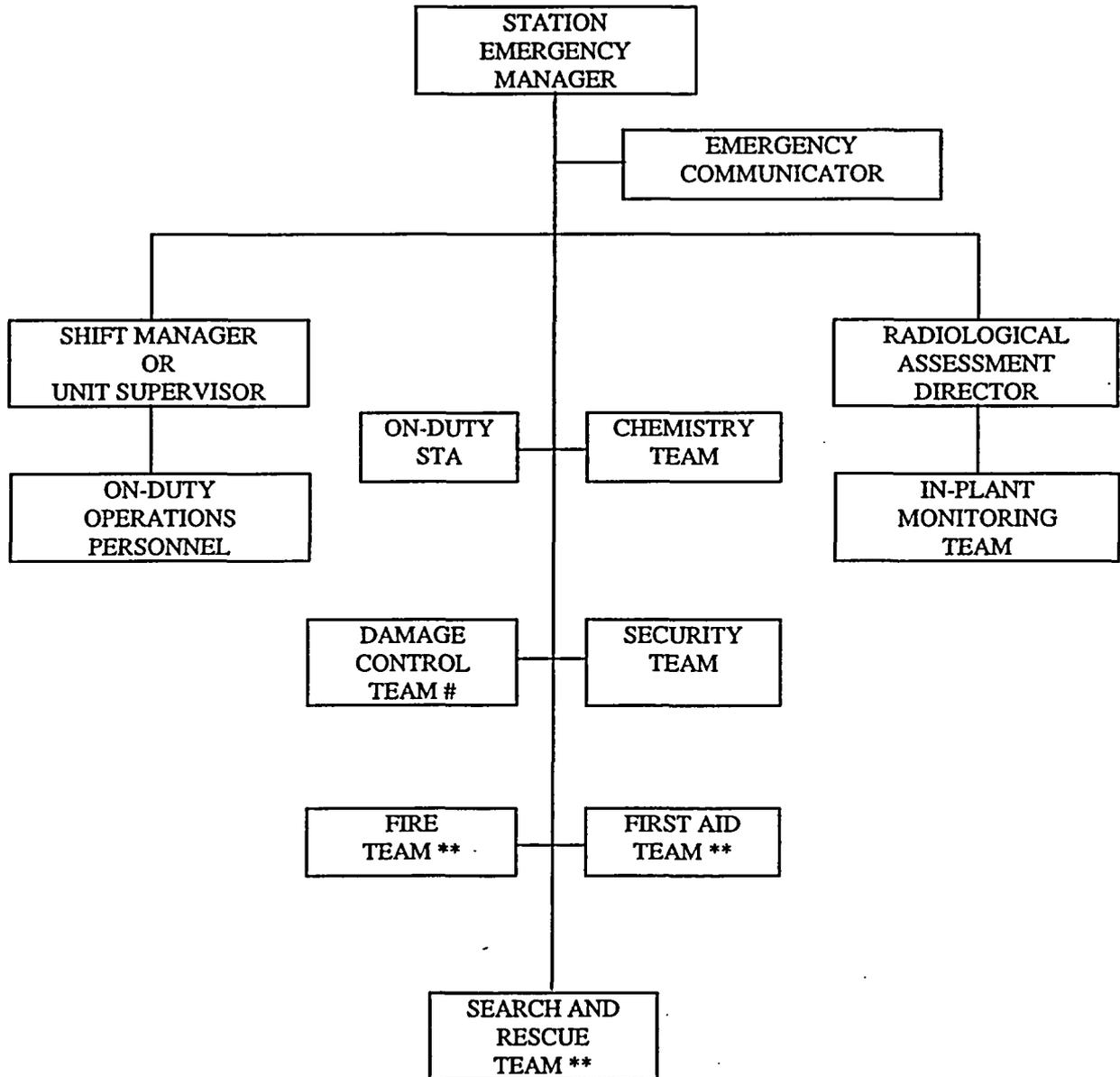
EMERGENCY AND RECOVERY CORPORATE RESPONSE REQUIRED
FOR NUCLEAR STATION EMERGENCIES
ALERT (OR HIGHER) EMERGENCY CLASSIFICATION

TABLE 5.2

<u>Major Functional Area (Emergency Position Title)</u>	<u>Major Task</u>	<u>Available in:</u>
Management of Local Emergency Operations Facility (Recovery Manager)	To coordinate the Company's response to emergency with Federal, State and local authorities	1½ hrs.
Health Physics & Chemistry (Radiological Assessment Coordinator)	Report to Recovery Manager to conduct radiological assessment	1½ hrs.
Technical Support (Technical Support Manager)	Reports to the Corporate Response Manager to provide technical and evaluation support.	1½ hrs.
Plan/Design/Construction (Plan/Design/Construction Manager)	Reports to the Corporate Response Manager to provide engineering, technical and vendor support in areas dealing with construction or design changes.	1½ hrs.
News Center Interface (Chief Technical Spokesperson)	Reports to the Corporate Response Manager to become the Company Spokesperson for statements to the news media.	1½ hrs.

STATION EMERGENCY ORGANIZATION PRIOR TO AUGMENTATION *

FIGURE 5.1



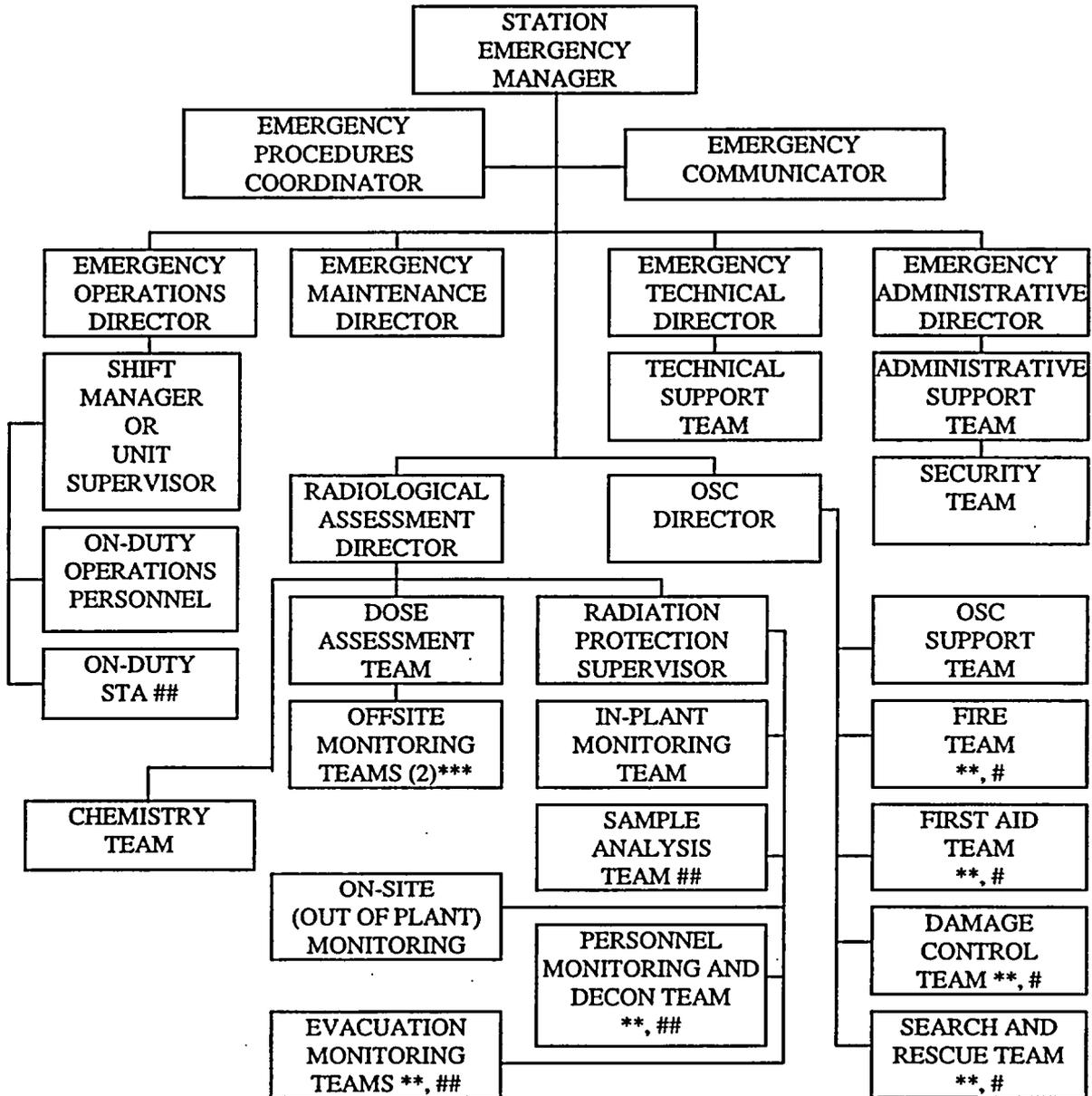
* Augmented for Alert, Site Area Emergency and General Emergency.

** 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.

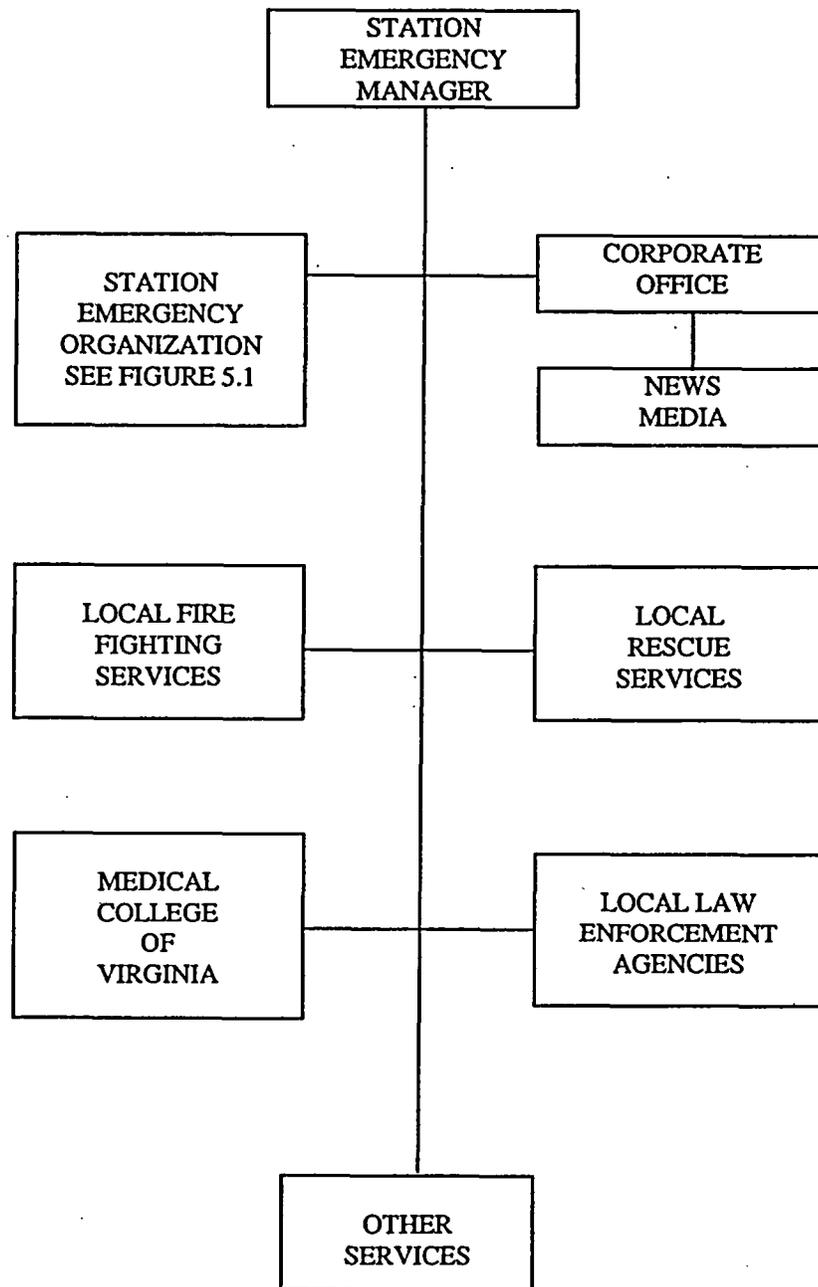
** This team will be activated only if circumstances require this function to be performed.

*** Transferred to LEOF when facility activated.

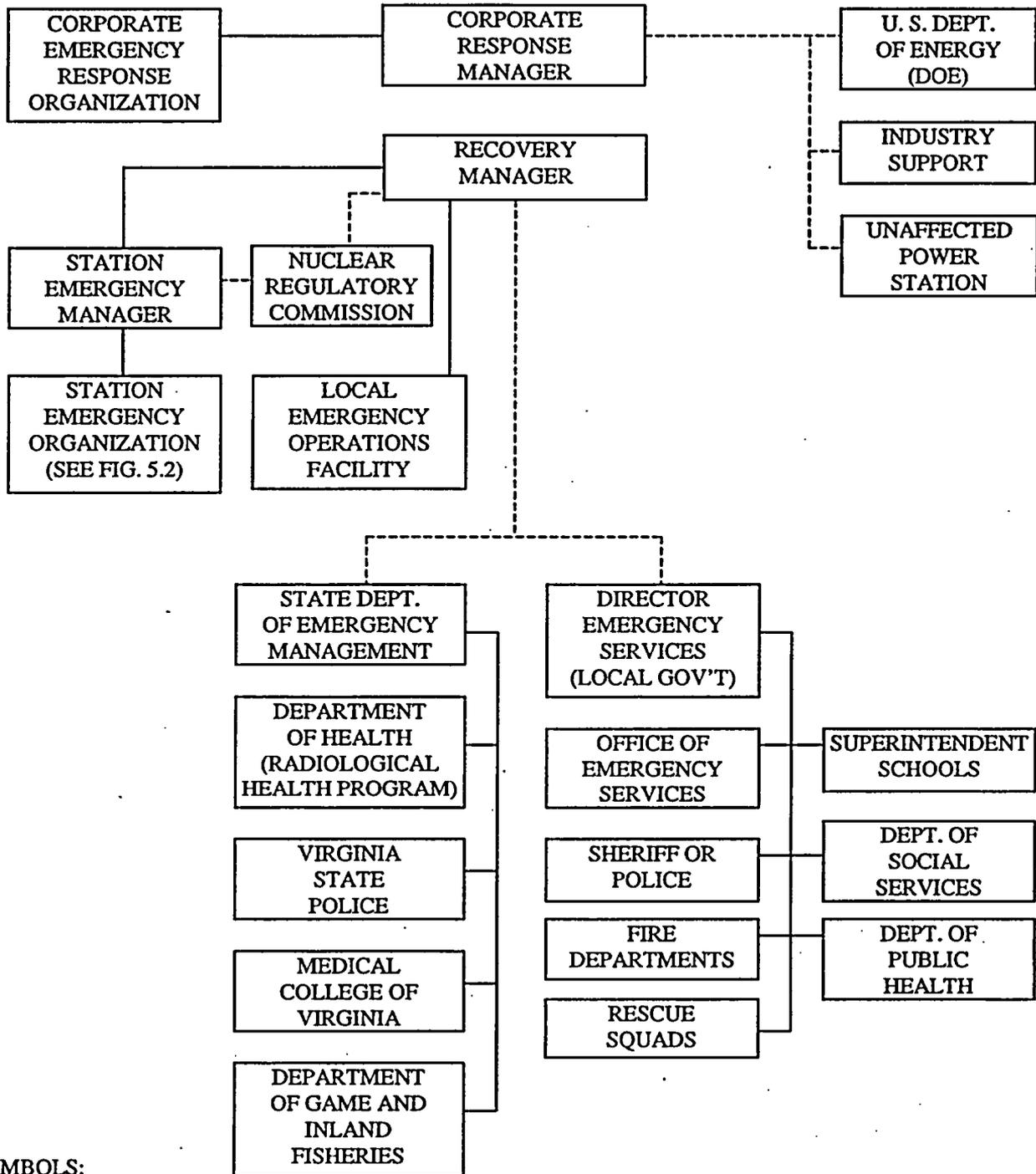
Normal reporting structure is shown. If the team is activated, control of the team will transfer to the SEM or appropriate Emergency Director.

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 LEOF ACTIVATION
FIGURE 5.4**



SYMBOLS:

MANAGEMENT CONTROL —————

COORDINATED ASSISTANCE - - - - -

SURRY POWER STATION
CITIES AND COUNTIES WITHIN THE 50 MILE EMERGENCY PLANNING ZONE*
FIGURE 5.5.a

VIRGINIA COUNTIES

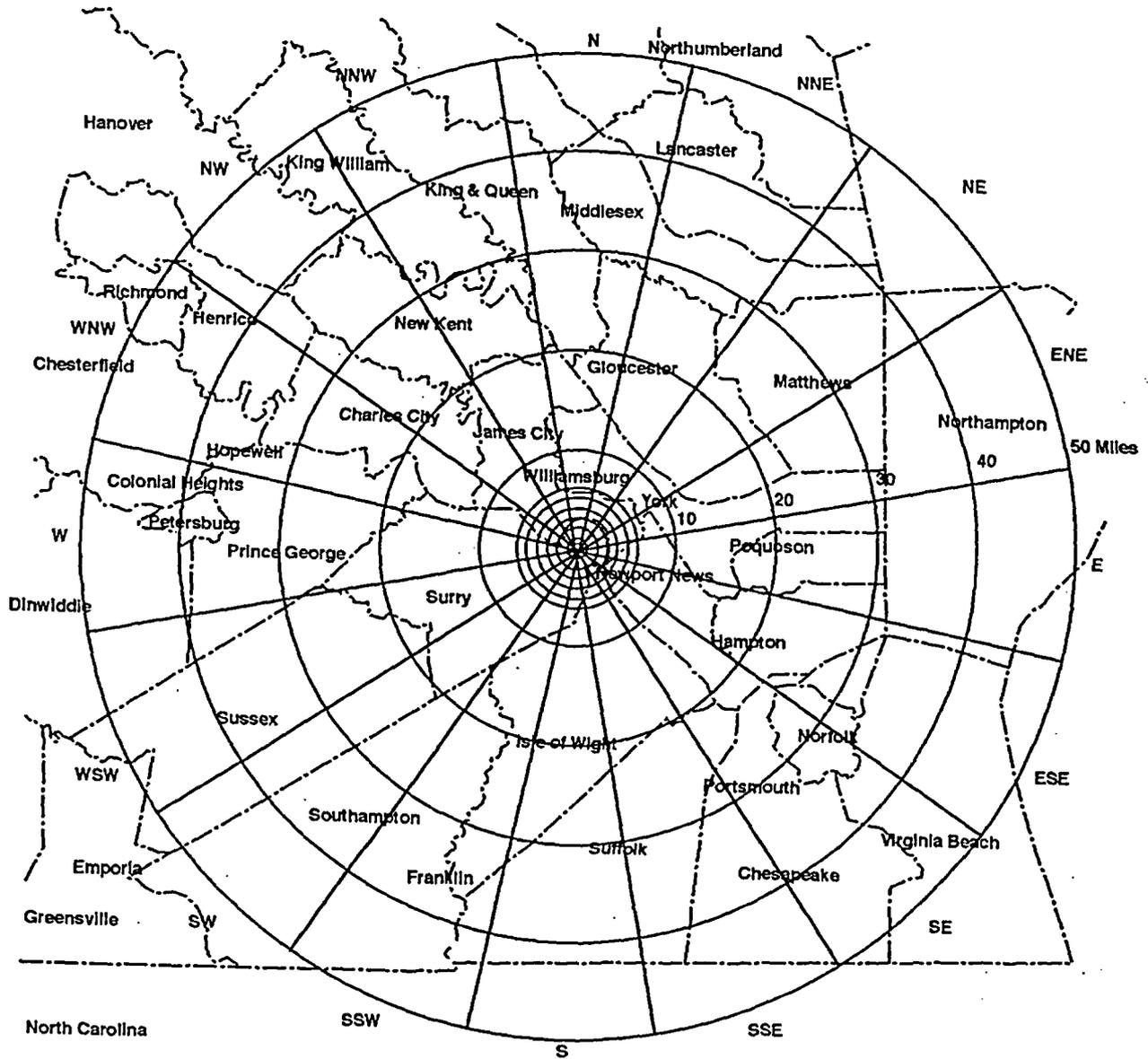
1. Surry
2. Isle of Wight
3. Southampton
4. James City
5. York
6. Charles City
- **7. Henrico
- **8. Chesterfield
9. Northhampton
10. Northumberland
11. Lancaster
12. Richmond
- **13. Essex
14. Middlesex
15. Mathews
16. Gloucester
- **17. King & Queen
- **18. King William
- **19. Hanover
20. New Kent
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 5.5.b**



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 Supervisor 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 as stated in the EIPs. Notifications will be made to state and local community officials within 15 minutes after declaration of an emergency, and to the NRC as soon as possible, but within 1 hour. Dedicated communicators will be available to maintain a continuous channel of communications with the NRC and to provide regular updates to state and local officials approximately every 60 minutes, when conditions change or as otherwise agreed. Initial information provided to the NRC and state and local governments is defined by specific report forms which are included in the EIPs. Message content was established in coordination with state and local governments, and 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.

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 EIPs are initiated to direct the activation of the required emergency response facilities and call out of designated emergency response personnel. The design of the facilities and data retrieval and monitoring capabilities provide the information needed to make timely assessments and formulate appropriate protective actions.

6.3 Protective Actions

The Recovery Manager or the SEM (if the LEOF 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 specified in EPIPs.

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 included in an EPIP in order to comply with this time requirement. These recommendations are based on Supplement 3 (Criteria for Protective Action Recommendations for Severe Accidents) to NUREG-0654/FEMA-REP-1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants." (This supplement was issued for interim use and comment on August 26, 1996.)

The initial protective action recommendation for any event classified as a General Emergency will be to evacuate in all directions out to 5 miles. Follow-up protective action recommendations that the station may make to the state will be based upon current meteorological data such as wind direction, wind speed and stability class, and dose projections.

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 6.2) will be the responsibility of State and local officials who will be assisted by the State Department of Police upon request. The primary method of warning the public is by the use of the Early Warning System sirens. 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. The existing evacuation time estimate studies will be provided to the State Department of Emergency Management following the 10-year census. At that time, the State will make the determination whether or not a new study is required for the EPZ.

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 COVRERP 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 COVRERP 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 State 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 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 State 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 COVRERP. Assistance will be provided as required in this regard.

6.3.2 Onsite Criteria for the Exclusion Area

The area within 1650 feet of Surry Unit 1 is defined as the Exclusion Area for the purposes of this Plan. Company employees, contractor personnel, and occasional visitors at the site may be in the Exclusion Area. 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 Exclusion Area 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 Exclusion Area when required.

Visitors to the Protected Area of the station are under continuous escort by personnel knowledgeable in emergency personnel accountability procedures. Contractor 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. The Central Emergency Operations Facility (CEOF) may be activated in lieu of the LEOF upon a management decision to do so or if the readiness of the LEOF is impaired. Normally, alarms will be sounded and announcements will be made to conduct personnel accountability or, if necessary, a site evacuation of non-essential workers. Those individuals within the Exclusion Area will be alerted by station personnel 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 using an EPIP established for this purpose. 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 badges, 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 6.1). 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

EPIP-5.07, Administration of Radioprotective Drugs, governs the process for approving administration of a thyroid blocking agent for a potential radioiodine inhalation situation. This process 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 Medical College of Virginia (MCV), Virginia Commonwealth University, to provide medical assistance to personnel injured or exposed to radiation and/or radioactive material. MCV has developed its own plan for responding to the emergency. MCV'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 MCV.

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 specified in the EIPs. These guidelines 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

Station Health Physics Procedures and EIPs specify levels of permissible radioactive contamination for workers and equipment. Actions are required to be taken when levels for equipment or areas exceed the limits established in the Health Physics Procedures. Any detected personnel contamination will initiate appropriate evaluation and decontamination in accordance with these procedures.

The Station has onsite contamination control procedures that provide for access control. These procedures state the criteria for permitting the return of the areas and their contents to normal use.

No food supplies are grown on the site and the water supplies come from deep wells. However, there are procedures to monitor contamination in areas designated permissible for employees to eat and drink during the emergency and recovery phases of operation.

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 as specified in Health Physics Procedures.

An EPIP has been developed to provide for the monitoring of vehicles and personnel 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 cm² 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 MCV from the station. The station can also communicate with the ambulance by use of a UHF radio, and the ambulance can communicate with MCV by way of the HEAR system. In addition arrangements have been made with local volunteer rescue squads to transport injured contaminated personnel to MCV. 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 MCV. The approximate time to transport a patient to MCV 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-Virginia 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 MCV Hospital become over-extended, MCV may coordinate further assistance with these facilities directly or through the State Department of Health.

6.5 Offsite Support

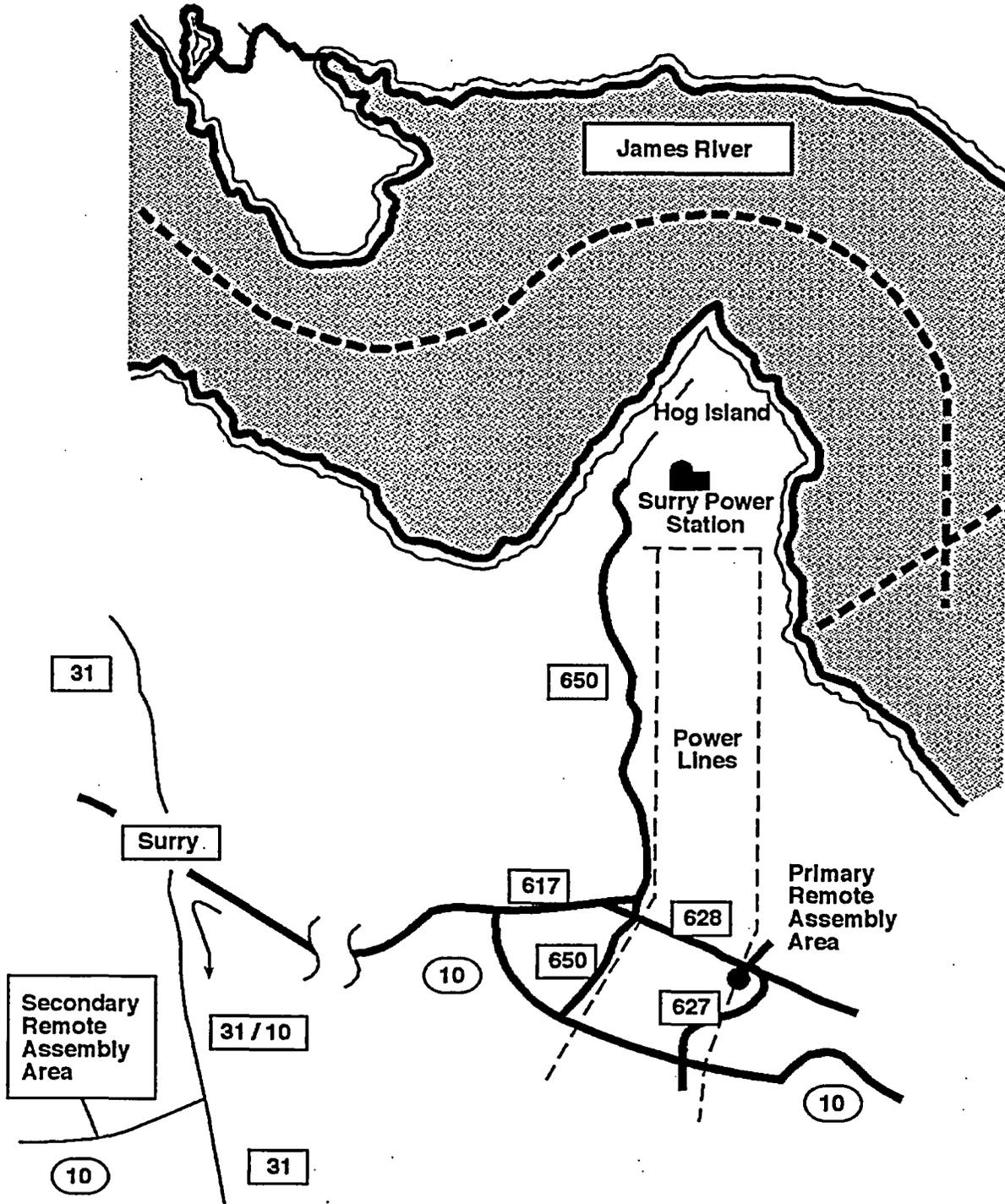
In addition to the offsite agencies listed above, volunteer fire departments in the counties of Surry and Isle of Wight have agreed to assist in fighting fires. A list of services and equipment is included in the Letters of Agreement in Appendix 10.1.

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.

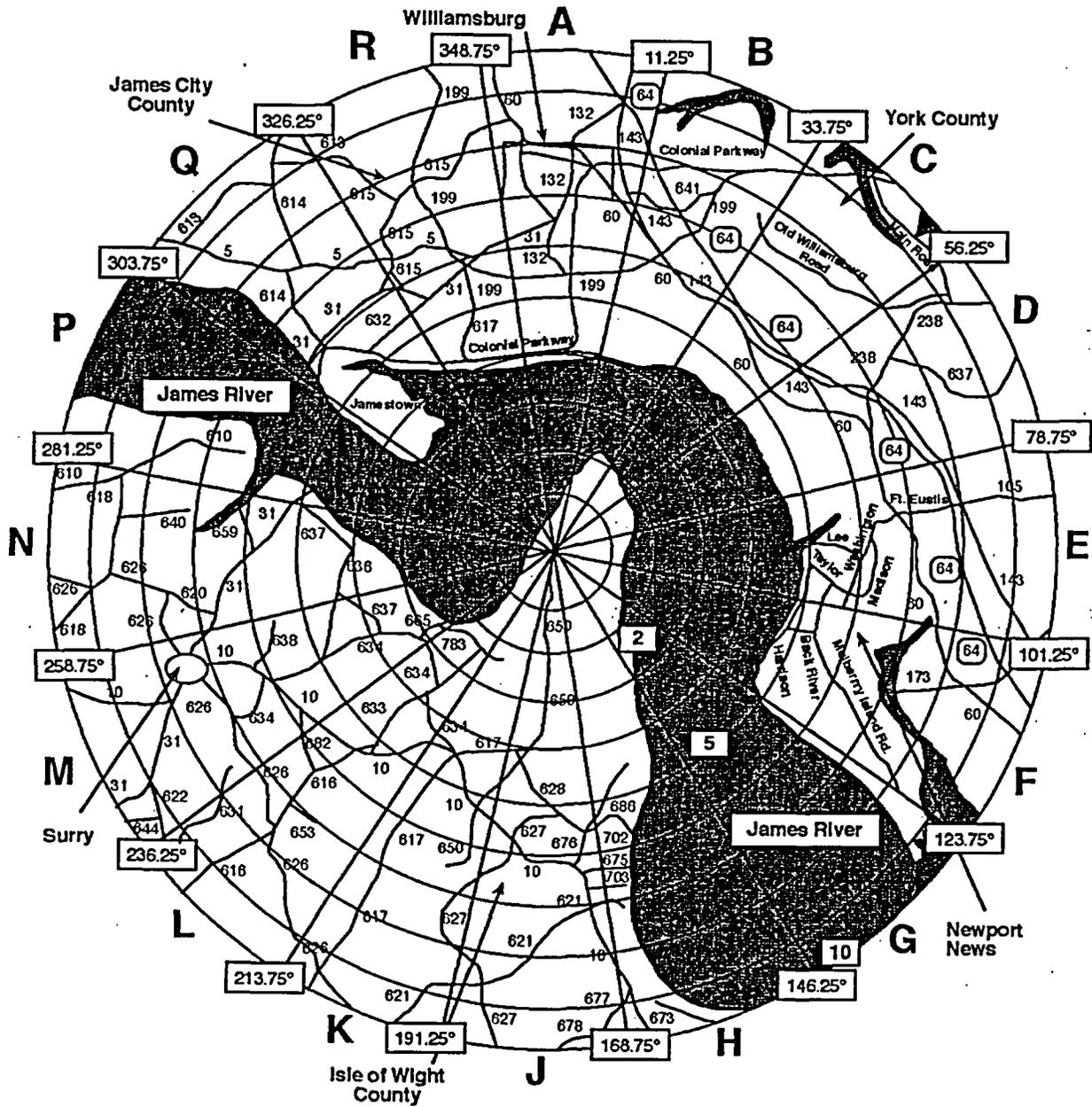
SURRY POWER STATION
REMOTE ASSEMBLY AREAS

FIGURE 6.1



SURRY POWER STATION
10 - MILE EMERGENCY PLANNING ZONE (EPZ)

FIGURE 6.2



Graphic No. 581217

RADIONUCLIDES WITH SIGNIFICANT CONTRIBUTION TO DOMINANT EXPOSURE MODES⁽¹⁾
TABLE 6.1

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

(1) Derived from NUREG 0654.

SURRY POPULATION DISTRIBUTION AND EVACUATION TIME ESTIMATES
TABLE 6.2

	Total Population Evacuated	Evacuation Time Estimate (in minutes)	
		Normal Conditions	Adverse Conditions
10-mile radius – North of James River	172565	491	572
10-mile radius – South of James River	3533	61	61
5-mile radius	62370	568	622
2-mile radius	1354	49	55
Quadrant I	135943	534	568
Quadrant II	104939	650	770
Quadrant III	3533	61	61
Quadrant IV	65293	190	241

Information summarized above derived from Innovative Emergency Management® Evacuation Time Estimates for the Surry Power Station and Surrounding Jurisdictions dated November 28, 2001 (Table 13, Summary of Results of Evacuation Time Estimates).

Total population evacuated represents the total population loaded onto the network during the 8 simulations listed and evacuation time estimates were calculated based on when approximately 90% of that population has exited the 10-mile radius.

The four quadrants represent 90° arcs of the area surrounding the station. The total population for each quadrant was determined by adding the population of the protective action zones included within each 90° arc. The protective action zones are irregular-shaped areas are bounded by prominent physical features which facilitate selection and notification of protective actions for the public.

SURRY POWER STATION POPULATION DATA BY SECTOR
TABLE 6.3

Direction/Sector	Population	2-Mile Ring	5-Mile Ring	10-Mile Ring
Direction: North Sector: A	Permanent Resident	0	597	14251
	Transient	0	129	0
Direction: North Northeast Sector: B	Permanent Resident	0	1164	9082
	Transient	0	1363	0
Direction: Northeast Sector: C	Permanent Resident	3	268	1853
	Transient	0	0	0
Direction: East Northeast Sector: D	Permanent Resident	3	0	5418
	Transient	0	0	0
Direction: East Sector: E	Permanent Resident	0	0	24582
	Transient	0	0	0
Direction: East Southeast Sector: F	Permanent Resident	0	98	26260
	Transient	0	0	0
Direction: Southeast Sector: G	Permanent Resident	0	19	939
	Transient	0	0	0
Direction: South Southeast Sector: H	Permanent Resident	5	162	348
	Transient	963	17	13
Direction: South Sector: J	Permanent Resident	8	262	1088
	Transient	14	0	28
Direction: South Southwest Sector: K	Permanent Resident	1	146	211
	Transient	0	19	6
Direction: Southwest Sector: L	Permanent Resident	0	162	380
	Transient	0	152	44
Direction: West Southwest Sector: M	Permanent Resident	0	190	767
	Transient	0	48	322
Direction: West Sector: N	Permanent Resident	0	169	545
	Transient	0	27	7
Direction: West Northwest Sector: P	Permanent Resident	0	66	138
	Transient	0	76	11
Direction: Northwest Sector: Q	Permanent Resident	0	147	6459
	Transient	0	1704	3303
Direction: North Northwest Sector: R	Permanent Resident	0	561	12579
	Transient	0	26	0

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

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

Information summarized above derived from Innovative Emergency Management® Evacuation Time Estimates for the Surry Power Station and Surrounding Jurisdictions dated November 28, 2001 (Table 1, Permanent Resident Population Distribution Based on 2000 Census Data by Sector and Ring, and Table 5, Transient Population by Sector and Ring). Special facility population included within transient population counts.

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), the Local Emergency Operations Facility (LEOF), the Corporate Emergency Response Center (CERC) and the Central Emergency Operations Facility (CEOF), and the Joint Information Center (JIC) and the Local Media Center (LMC). These facilities were designed to meet the intent of the guidance in NUREG-0696 and the clarification in NUREG-0737 Supplement 1. 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 Maintenance Building, is the designated reporting location for the pool of workers who compose Damage Control Teams, the Fire Team, 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). A separate area has been designated for use as an Alternate OSC in the event that the primary facility is unavailable.

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 Emergency Response Facility Computer System (ERFCS). 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 ERFCS Data Communications Processors (redundant units).

Inputs from plant sensors are processed by these units and the information is transmitted to facilities including the Control Room, LEOF, CERC, and CEOF for display on video terminals.

7.1.4 Local Emergency Operations Facility

The station's LEOF is adjacent to the Surry Training Facility. 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 via an independent I/O unit of the ERFCS which drives the terminals in the LEOF. The ERFCS provides information, through a data link, to the MIDAS computer which is used primarily by the Radiological Assessment Coordinator to estimate offsite doses.

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

7.1.5 Corporate Emergency Response Center and Central Emergency Operations Facility

Space is designated for the Corporate Emergency Response Center (CERC) and the Central Emergency Operations Facility (CEOF) at the Innsbrook Technical Center in Glen Allen, Virginia. The facility will be manned by members of the Corporate Emergency Response Team as defined in the Corporate Emergency Response Plan. The CERC has access to plant data from the ERFCS via an independent I/O processor.

7.1.6 Joint Information Center and Local Media Center

The Joint Information Center (JIC) is located on the ground floor of the Innsbrook Technical Center in Glen Allen, Virginia. It is a branch of the CERC. The facility will be manned by members of the Corporate Emergency Response Team as defined in the Corporate Emergency Response Plan. Official company statements to the media will be made from this facility, by the Chief Technical Spokesman.

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 LEOF with the approval of the Recovery Manager.

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. The EIPs and the State and local emergency response plans define the responsibilities of designated personnel for use of the communication systems.

7.2.1 Communications Systems Within the Station

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

7.2.1.1 Public Address and Intercom System

A five channel public address and intercom system (Gai-Tronics System) is installed in the station. The system power is supplied from a power supply which will maintain the system in an operational condition in the event of a normal station service power failure. Zones are provided within 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. In the event of an emergency, the system is used to alert station personnel of any emergency situation and to direct emergency response actions required of on-site personnel.

7.2.1.2 Radio Communications System (Onsite)

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

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 Microwave System (OPX)

A microwave system is provided for communication between the Station and the General Office Phone Network and the Systems Operator's Office in Richmond, Virginia. The system provides Automatic Ringdown Phone (ARD) communication from station emergency response facilities to the State Department of Emergency Management (DEM), to the counties of Surry and James City, and to the CERC. It also supports ARD communications between the LEOF and the TSC. In addition, the microwave system provides the communication link to the Early Warning System (EWS) transmitter located at Surry. The system is battery operated at all locations to provide continuous 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 LEOF.
- Health Physics Network (HPN): Provides for communications regarding radiological and meteorological conditions, assessments, trends, and protective measures. HPN lines are located in the TSC and LEOF.
- Reactor Safety Counterpart Link (RSCL): Allows for internal NRC discussions regarding plant and equipment conditions. RSCL lines are located in the TSC and LEOF.
- Protective Measures Counterpart Link (PMCL): Allows for the conduct of internal NRC discussions on radiological releases, meteorological conditions, and protective measures. PMCL lines are located in the TSC and LEOF.
- Emergency Response Data System (ERDS): Allows for transmittal of reactor parametric data from the site to the NRC. ERDS data is transmitted from the ERFCS computer, via modem, to the NRC Operations Center.
- Management Counterpart Link (MCL): This system has been established for internal discussions between the NRC Executive Team Director/members and the NRC Director of Site Operations or licensee management. MCL lines are located in the TSC and LEOF.
- Local Area Network (LAN) Access: Provides access to the NRC local area network. Telephone jacks are provided in the TSC and LEOF 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 State DEM on a 24-hour per day basis. This loop can be activated at the station from the Control Room, TSC, or LEOF.

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 Commonwealth of Virginia Department of Emergency Management; 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 LEOF, the Recovery 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 Commonwealth of Virginia DEM notifies those political jurisdictions outside the 10-mile EPZ but within the 50-mile zone.

7.2.5.3 Federal Response

The SEM or Recovery 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 Recovery Manager may also contact DOE, either directly or through the NRC (LFA), and request FRMAC activation. Other Federal agencies are normally contacted by the State DEM.

7.2.5.4 Local Emergency Facilities

The SEM is responsible for ensuring communications are established from the TSC to the OSC and LEOF, 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 LEOF, 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 activation of the CERP and the rapid activation of station personnel to deal with the emergency if the station requires such action.

7.2.5.6 Communications with Local Emergency Operations Facility

In the event that the severity of the emergency requires LEOF activation, the Recovery Manager is responsible for ensuring availability and operability of communications between the LEOF 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. Active sensors provide indication and recording of seismic activity in the Control Room, while passive sensors record seismic activity by etching marks on metal plates which are later retrieved and evaluated.

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 5×10^{-8} microcuries per cc. Silver Zeolite has a low retention efficiency for Xenon and therefore, interference should be minimal. Plastic bags and bottles are available to collect water, soil, foodstuffs or other samples.

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 thermoluminescent dosimeters (TLDs) is used to obtain offsite data. The radiological monitoring instrumentation and sampling devices used by the station meet the minimum requirements of the NRC Radiological Assessment Branch Technical Position for Environmental Radiological Monitoring Programs. Two TLDs have been placed in each of the 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 provide data that is input to the ERFCS for use in Meteorological Information and Dose Assessment System (MIDAS) operations. The data is also transmitted to the Control Room and to the company's Weather Center at Innsbrook. Table 7.2 provides a listing of the parameters measured.

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

7.3.4 Plant Process Parameter Monitoring

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

In order to support the data acquisitions need of the emergency response facilities, the ERFCS has been installed. The ERFCS provides plant monitoring, data acquisition, and critical plant data in the form of real-time status displays for the purpose of making a rapid evaluation of the reactor plant's safety status. ERFCS monitors are strategically located in areas including the Control Room, TSC, LEOF, CERC and

CEO. The ERFCS 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.

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:

<u>LOCATION</u>	<u>ORGANIZATION</u>	<u>DISTANCE FROM SURRY</u> (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 Haren	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 COVRERP, Appx. 3). 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 the State DEM.

ERF COMMUNICATIONS

TABLE 7.1

Control Room

1. Automatic Ring Downs (ARDs) to the System Operator, TSC, OSC, Security Shift Supervisor, DEM, 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, LEOF, CERC, DEM, 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

Local Emergency Operations Facility (LEOF)

1. ARDs to TSC, CERC, JIC, LMC, DEM, Surry County and James City County
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. ARDs to LEOF and JIC

Corporate Emergency Response Center (CERC)

1. OPX Phones
2. ARDs to LEOF and TSC
3. Instaphone monitor

METEOROLOGICAL MONITORING SYSTEM PARAMETERS ⁽¹⁾
TABLE 7.2

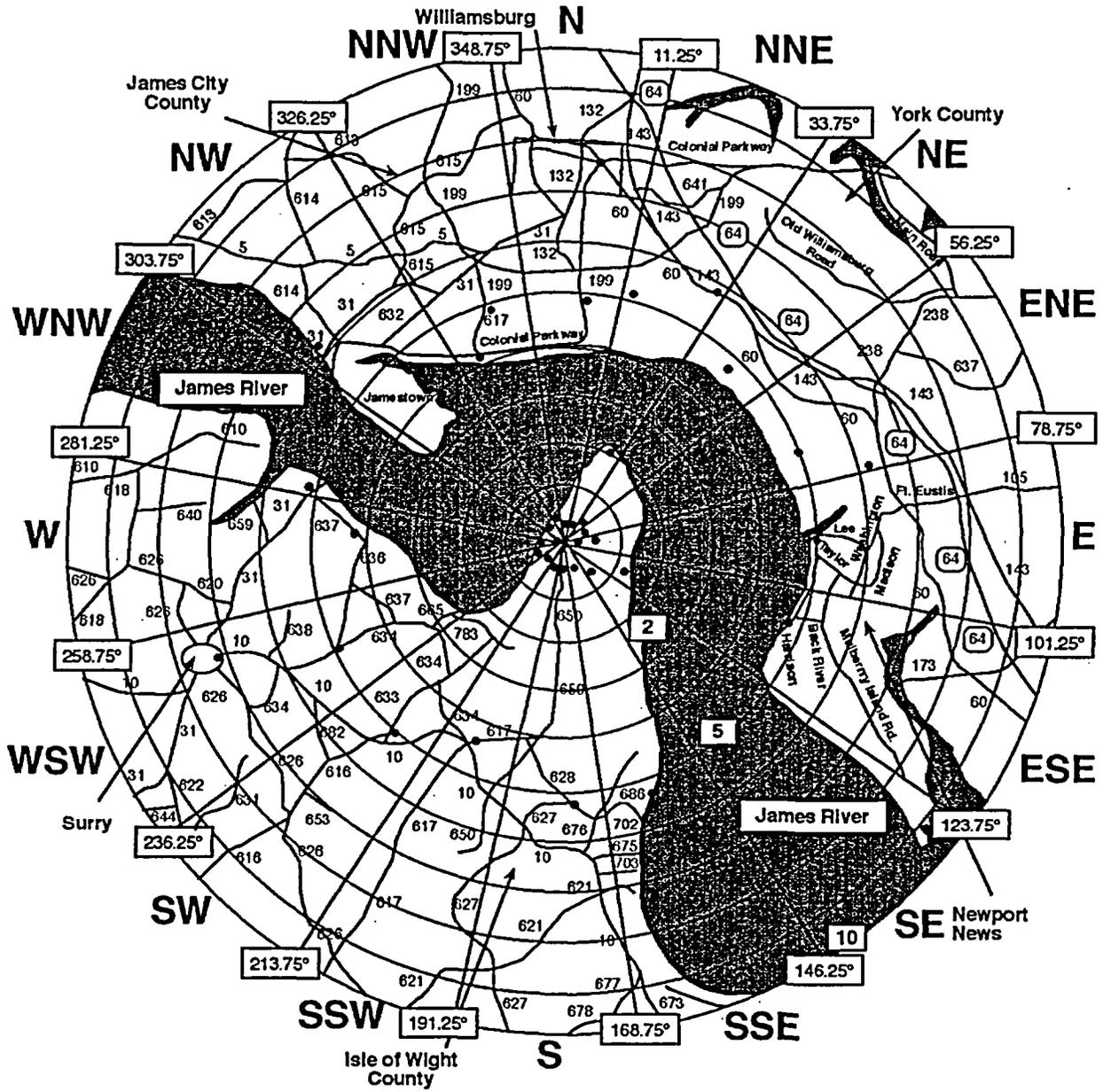
<u>Measurement</u>	<u>Primary Tower</u>			<u>Backup Tower</u>	<u>Control Rm.</u>
	<u>150.0 feet</u>	<u>34.0 feet</u>	<u>Ground</u>	<u>30.3 feet</u>	<u>Readout</u>
Wind Speed	x	x		x	x
Wind Direction	x	x		x	x
Sigma-theta	x	x		x	x ⁽²⁾
	<u>147.4 feet</u>	<u>31.5 feet</u>			
Temperature		x			x
Differential					
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 UFSAR, Rev. 29, 2/98.

**SURRY POWER STATION
ENVIRONMENTAL MONITORING LOCATIONS MAP
FIGURE 7.1**

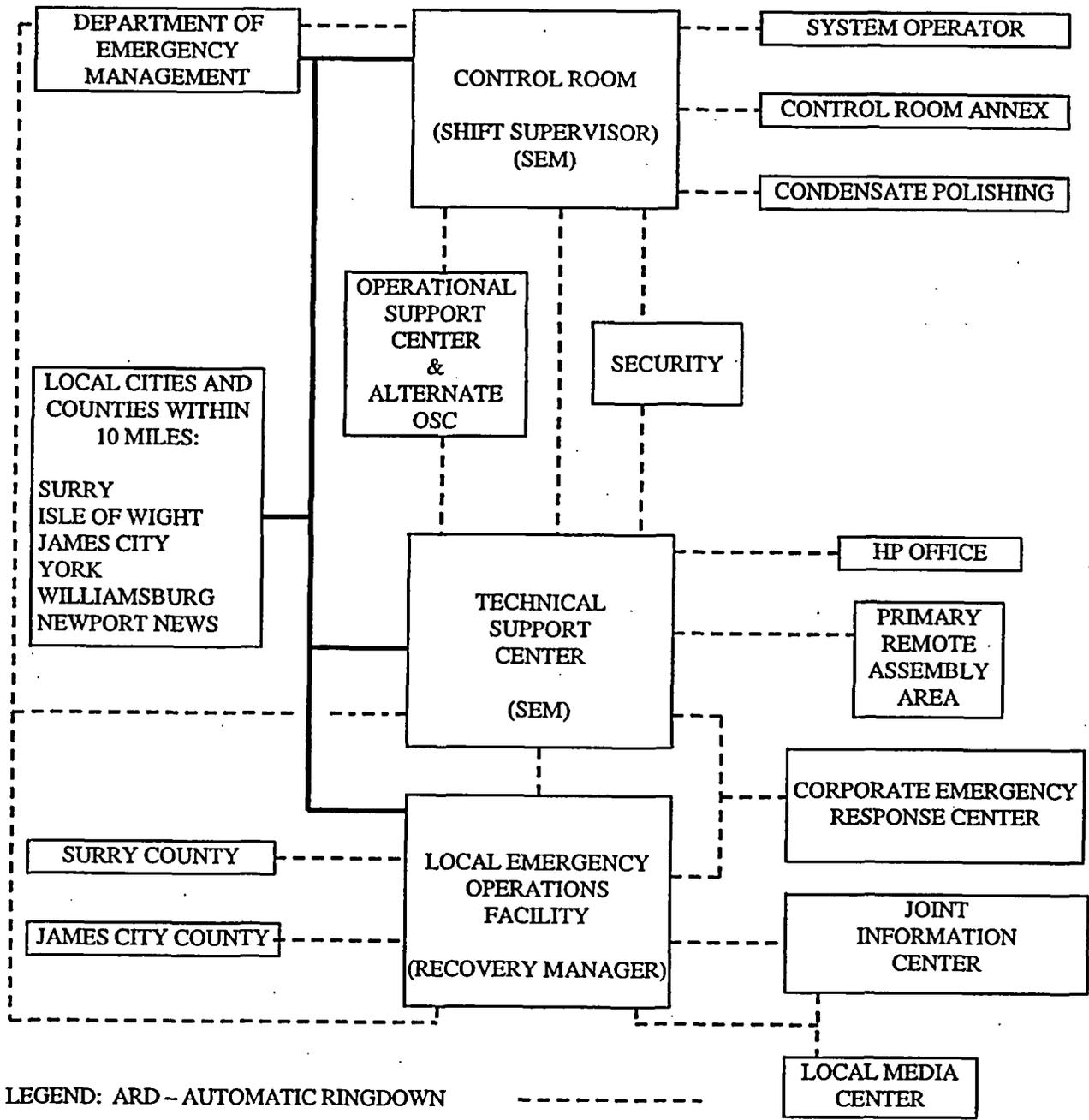


**SURRY POWER STATION
ENVIRONMENTAL MONITORING LOCATIONS LISTING^(*)
FIGURE 7.2**

<u>Sample Media</u>	<u>Location</u>	<u>Station #</u>	<u>Distance (miles)</u>	<u>Direction</u>	<u>Remarks</u>
Environmental (TLDs)	Control	00	-	-	Onsite
	West North West	02	0.17	WNW	Site Boundary
	Surry Station Discharge	03	0.6	NW	Site Boundary
	North North West	04	0.4	NNW	Site Boundary
	North	05	0.29	N	Site Boundary
	North North East	06	0.28	NNE	Site Boundary
	North East	07	0.31	NE	Site Boundary
	East North East	08	0.43	ENE	Site Boundary
	East (Exclusion)	09	0.31	E	Exclusion Area Boundary
	West	10	0.40	W	Site Boundary
	West South West	11	0.45	WSW	Site Boundary
	South West	12	0.30	SW	Site Boundary
	South South West	13	0.43	SSW	Site Boundary
	South	14	0.48	S	Site Boundary
	South South East	15	0.74	SSE	Site Boundary
	South East	16	1.00	SE	Site Boundary
	East	17	0.57	E	Site Boundary
	Station Intake	18	1.23	ESE	Site Boundary
	Hog Island Reserve	19	1.94	NNE	Near Resident
	Bacons Castle	20	4.45	SSW	Approximately 5 miles
	Route 633	21	5.0	SW	Approximately 5 miles
	Alliance	22	5.1	WSW	Approximately 5 miles
	Surry	23	8.0	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	3.7	NNW	Approximately 5 miles
	Route 617 and 618	28	4.7	NNW	Approximately 5 miles
	Kingsmill	29	4.8	N	Approximately 5 miles
	Williamsburg	30	7.8	N	Population Center
	Kingsmill North	31	5.6	NNE	Approximately 5 miles
	Budweiser	32	5.7	NNE	Population Center
	Water Plant	33	4.8	NE	Approximately 5 miles
	Dow	34	5.1	ENE	Approximately 5 miles
	Lee Hall	35	7.1	ENE	Population Center
	Goose Island	36	5.0	E	Approximately 5 miles
	Fort Eustis	37	4.8	ESE	Approximately 5 miles
	Newport News	38	16.5	ESE	Population Center
	James River Bridge	39	14.8	SSE	Control
	Benn's Church	40	14.5	S	Control
	Smithfield	41	11.5	S	Control
	Rushmere	42	5.2	SSE	Approximately 5 miles
	Route 628	43	5.0	S	Approximately 5 miles
Air Charcoal and Particulate	Surry Station	SS	0.37	NNE	
	Hog Island Reserve	HIR	2.0	NNE	
	Bacons Castle	BC	4.5	SSW	
	Alliance	ALL	5.1	WSW	
	Colonial Parkway	CP	3.7	NNW	
	BASF	BASF	5.1	ENE	
	Fort Eustis	FE	4.8	ESE	
	Newport News	NN	16.5	ESE	Control Location

* Reference document: VPAP-2103S, Revision 5, Attachment 8, Environmental Sampling Locations.

COMMUNICATIONS LINKS
FIGURE 7.3

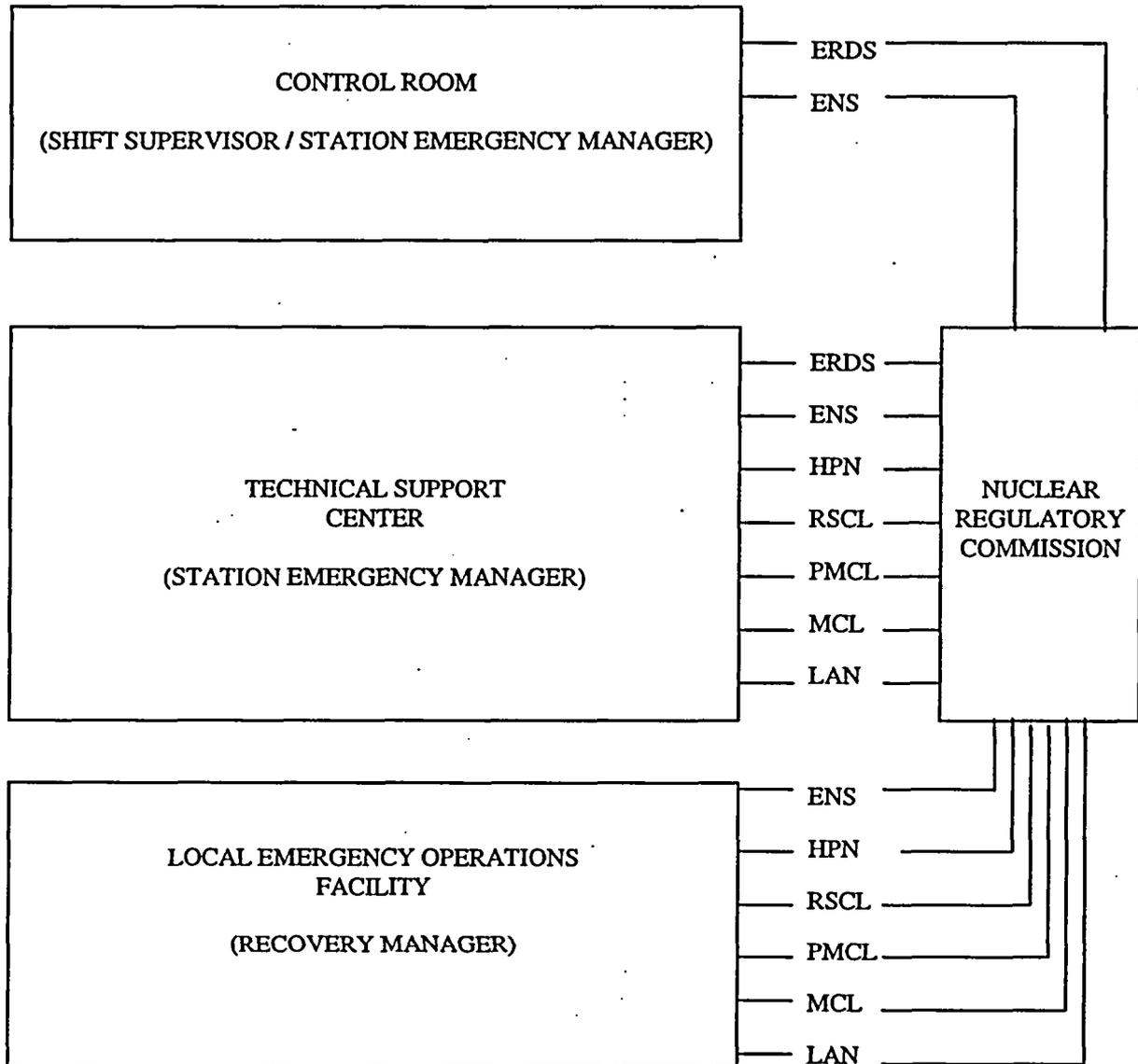


LEGEND: ARD - AUTOMATIC RINGDOWN

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 – Nuclear Operations and Chief Nuclear Officer, assigned the overall authority for maintaining emergency preparedness, has delegated the responsibility for program maintenance to the Vice President - Nuclear Support Services, and program implementation to the Senior Vice President - Nuclear Operations. The Vice President - Nuclear Support Services has delegated the responsibility for maintaining emergency preparedness to the Director Nuclear Protection Services and Emergency Preparedness. The Senior Vice President - Nuclear Operations has delegated the responsibility for station emergency preparedness to the Site Vice President. 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 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 Station Nuclear Safety and Operating Committee (SNSOC) and the documentation filed by Records Management. The SNSOC shall review proposed revisions to these documents and recommend action to the Site Vice President who is responsible for their approval. If a proposed revision is judged to decrease the effectiveness of these documents with respect to 10CFR50.47(b) or 10CFR50, Appendix E, it shall be submitted to the NRC for approval in accordance with the requirements of 10CFR50.54(q) prior to implementation. Revisions to these documents shall be dated and marks will be placed on the affected pages to indicate where changes have been made.

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 Distribution of Emergency Plans and Implementing Procedures.

In accordance with 10CFR50, Appendix E, revisions to the Emergency Plan and implementing procedures 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.

8.3 Training of Station Personnel

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

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

- a) Ensure emergency response personnel maintain familiarity with the 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 Nuclear Power Station Emergency Preparedness Training (NPSEPT) Program Guide has been developed. 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 the NPSEPT Program Guide.
- 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 the NPSEPT Program Guide.
- c. The Director Nuclear Protection Services and 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 verify that the training required by the NPSEPT Program Guide 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, initial classroom training 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.

8.3.3 Emergency Response Personnel Training

Personnel designated to fill interim, primary or alternate emergency response positions will receive training in accordance with the NPSEPT Program Guide. Emergency preparedness training not conducted by the NEP staff is conducted pursuant to supporting department training program guidance. NEP will verify that this training is consistent with the provisions of the NPSEPT Program Guide. 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 the NPSEPT Program Guide that affect those descriptions referenced in Table 8.1 will be reflected in the next scheduled revision of this Plan. Equivalency credit for required training sessions may be awarded based on an individual's knowledge of the subject matter. Such credit requires the approval of the Director Nuclear Protection Services and Emergency Preparedness and the Site Vice President.

8.3.4 Cognitive Evaluations

Cognitive evaluations may include self critiques, group discussions, and/or tests administered following completion of NPSEPT 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 NPSEPT tests. For NPSEPT 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, NPSEPT Training Rosters and NPSEPT extensions.
- b) Trainee Records: Completed tests and responder training records.

8.4 Training of Offsite Support Personnel

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

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 Communications Drills

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

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

8.5.2 Fire Drills

Fire drills shall be conducted in accordance with the requirements of the 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 decisionmaking
- 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) Verify 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. Emergency exercises will be scheduled to start at different times of the day with advance knowledge of the time to be held confidentially. At least once every 6 years, the specific exercise date should be unannounced. Additionally and at least once every 6 years, an exercise should be initiated during off-hours (between 6pm and 4am on a weekday, or during a weekend). The unannounced and/or off-hours demonstration may be conducted during or independent of the biennial exercise.

8.6.2 Emergency Exercise Content

The content of exercises shall be varied from year to year, so that all major elements of the State, local, and station plans are tested within a 6 year period.

Exercises shall include:

- a) an emergency classification of at least Site Area Emergency
- b) a mobilization of as many elements of the State, local, and station plans as is reasonably achievable without mandatory public participation; and
- c) invitation for involvement of federal emergency response agencies at least once every 5 years.

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 verify 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 facilitators; and
- i) a description of the arrangements made for and advance materials to be provided to the facilitators.

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 facilitators. These facilitators 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 facilitators. Facilitators 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 facilitators 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 facilitators and key participants. Notes of critique comments shall be recorded.

Facilitators 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 State EOC located at the station and LEOF shall be operationally checked on a monthly basis. In addition, NRC Emergency Notification System extensions and NRC Health Physics Network extensions located at the station and LEOF 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 Director Nuclear Protection Services and 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

<u>EMERGENCY RESPONSE POSITION</u>	<u>SCOPE OF TRAINING</u> (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 Team	1,13,14
First Aid Team	1,13,14
Damage Control Team	1,4,13
Search and Rescue Team	1,13,14

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, LEOF activation, 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.

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 Team 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.

SURRY POWER STATION
EMERGENCY PLAN

SECTION 9
RECOVERY

<u>Part</u>	<u>Subject</u>	<u>Page No.</u>
9.0	Recovery	9.2
9.1	Recovery Methodology	9.2
9.2	Population Exposure	9.2

9.0 Recovery

The recovery process will be managed by a special, designated organization composed of Dominion personnel. The recovery organization is described in the Corporate Emergency Response Plan and further outlined in an EPIP specifically designed for administration of the recovery process. The basic organization may be modified as required to address the needs of the given situation. The Recovery Manager assumes control and direction of the recovery operation with the authority and responsibilities set forth in the Corporate Emergency Response Plan and EPIPs.

The recovery process is implemented when the Recovery Manager and the Station Emergency Manager, with concurrence of State and Federal agencies, have determined the station to be in a stable and controlled condition. Upon the determination, the Recovery Manager shall notify the NRC Operations Center, the State Emergency Operations Center, and the Local County Emergency Operations Centers 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. 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 Station Nuclear Safety and Operating Committee (SNSOC).

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.

SURRY POWER STATION
EMERGENCY PLAN

SECTION 10
APPENDICES

<u>Part</u>	<u>Subject</u>
10.1	Agreement Letters
10.2	Radiation Emergency Plan, MCVH/VCU - Virginia 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 Matrix

AGREEMENT LETTERS

Federal Agencies: U.S. Department of Energy - Field Office, Oak Ridge
U.S. Department of Transportation - Fifth Coast Guard District

State Agencies: State Department of Emergency Management
State Department of Health
State Police - Fifth Division Chesapeake
State Department of Game and Inland Fisheries
Medical College of Virginia/Virginia Commonwealth University

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



Department of Energy

Oak Ridge Operations Office
P.O. Box 2001
Oak Ridge, Tennessee 37831--

January 18, 2002

Mr. Eugene S. Grecheck
Vice President, Nuclear Support Services
Dominion Energy
Innsbrook Technical Center
5000 Dominion Blvd.
Glen Allen, Virginia 23060

Dear Mr. Grecheck:

**U.S. DEPARTMENT OF ENERGY (DOE) RADIOLOGICAL ASSISTANCE
AVAILABILITY FOR NORTH ANNA AND SURRY POWER STATIONS**

This letter is in response to your January 10, 2002 letter requesting an updated Letter of Agreement regarding the availability of DOE Radiological Assistance. This letter supercedes all previous such letters between your organization and the DOE Oak Ridge Operations Office (ORO).

The current version of the DOE Radiological Assistance Program, Region 2, Regional Plan is dated October 1997, and should be on file at your office. This plan sets forth the procedures for obtaining radiological assistance and conditions pertaining to the scope of radiological assistance that DOE will provide in support of your facility. Prior to dispatch of radiological assistance, we will consult with the Nuclear Regulatory Commission and the appropriate state authorities to ensure that there will not be any duplication of efforts. The type and duration of radiological assistance provided will depend on the severity of the incident and will be limited to advice and emergency actions essential for the control of immediate hazards to health and safety.

If you have any questions or require additional information, please contact me at (865) 576-9740.

Sincerely,

A handwritten signature in black ink, appearing to read "Steve Johnson".

Steve Johnson
Regional Response Coordinator
U. S. DOE RAP, Region 2

U.S. Department
of Transportation

United States
Coast Guard



Commander
Fifth Coast Guard District

431 Crawford Street
Portsmouth, VA. 23704
Staff Symbol: Dm

5050
February 20, 2002

Mr. Eugene S. Grecheck
Vice President – Nuclear Support Services
Dominion Energy
5000 Dominion Boulevard
Glen Allen, VA 23060

Dear Mr. Grecheck,

In reference to your letter dated January 10, 2002, the Fifth Coast Guard District has resources available that can respond to an emergency at the Surry Power Station. Coast Guard assistance during an emergency will primarily consist of controlling vessel traffic on the James River in the vicinity of the power station, broadcasting notice to mariners regarding the emergency, and rendering other traditional humanitarian aid.

The initial emergency report and request for Coast Guard assistance should be directed to the Marine Safety Office Hampton Roads, Norfolk, Virginia, 24-hour telephone number 757-484-8192. The alternate unit to whom the report can be made is the Coast Guard Fifth District/Atlantic Area Command center, 24-hour telephone number 757-398-6231.

The commitment of the Coast Guard resources in any particular instance is always conditional upon the availability and limitations of such resources including consideration of other competing demands. Of paramount concern to me is the safety of Coast Guard personnel while assisting in these instances. Coast Guard response personnel do not have radiological monitoring capabilities.

Each of our organizational elements involved has a copy of your emergency plan. To remain current and effective, it is important that four copies of all subsequent revisions be forwarded to the above address for distribution within our organization.

Sincerely,


D. T. ORMES
By direction

Copy: MSO Hampton Roads
Group Hampton Roads
Atlantic Area (Ap)



COMMONWEALTH of VIRGINIA

Department of Emergency Management

MICHAEL M. CLINE
State Coordinator

GEORGE W. FORESMAN
Deputy Coordinator

January 17, 2002

10501 Trade Court
Richmond, Virginia 23236-3713
(804) 897-6500
(TDD) 674-2417
FAX (804) 897-6506

Mr. Eugene S. Grecheck
Vice President – Nuclear Support Services
Dominion Energy
5000 Dominion Boulevard
Glen Allen, VA 23060

Dear Mr. Grecheck:

Reference is made to your letter of January 10, 2002, regarding the need to update our Letter of Agreement in compliance with the federal criteria prescribed by NUREG 0654/FEMA-REP-1.

We have reviewed the North Anna and Surry Power Stations' emergency plans and are assured that they properly interface with the state Radiological Emergency Response Plan (RERP) as well as with the local RERPs, site-specific to either power station. Upon receiving notification of a radiological accident at a Virginia Power nuclear power station, state agencies and local governments will implement their Radiological Emergency Response Plans in accordance with state and local government procedures. Specifically, the Virginia Department of Emergency Management (VDEM) agrees to implement all or parts of the following actions in the event of a radiological emergency at either plant site:

1. Operate Virginia Emergency Operations Center (VEOC).
2. Provide VDEM on-scene coordinator(s) to the EOF.
3. Provide warning in coordination with other state and local government agencies and the nuclear facility operator.
4. Provide emergency communications.
5. Coordinate emergency response actions of federal and state agencies.
6. Notify the following federal agencies of a radiological emergency:
 - a. Federal Emergency Management Agency (FEMA) when the emergency action level at the power facility is classed as an Alert. Also provide updated information and request assistance, if required, when the emergency action level is classed as a Site Area Emergency or General Emergency.
 - b. Federal Aviation Administration air controllers at Richmond International Airport of a radiological emergency and request that aircraft be instructed to avoid affected airspace until notified otherwise.
 - c. Commander, Fifth U.S. Coast Guard District of a radiological emergency at the Surry Power Station and request establishment of traffic control of boats and ships on the James River in the vicinity of the power station.

"Working to Protect People, Property and Our Communities"

Mr. Eugene S. Grecheck
Page 2
January 16, 2002

- d. Fort Eustis in the event of an incident at the Surry Power Station that could affect the health and safety of personnel stationed at his military installation.
7. Notify CSX Transportation of a radiological emergency at the North Anna or Surry Power Station and request that rail service in the affected area be discontinued temporarily.
8. Notify the State Bureau of Radiological Health, Department of Health immediately of all classes of accidents and incidents reported by operators of nuclear facilities.
9. Notify the Virginia Department of Transportation to establish roadblocks and to temporarily terminate ferry service between James City County and Surry County, when appropriate.
10. Notify other state agencies that have emergency task assignments identified in the State RERP.
11. Notify the state of Maryland EOC of radiological accidents at the North Anna Power Station resulting in either a Site Area Emergency or General Emergency. Notify the state of North Carolina EOC of radiological accidents at the Surry Power Station resulting in either a Site Area Emergency or General Emergency.
12. Provide public information based on information furnished by the Department of Health and the nuclear facility operator.
13. Request assistance from the federal government in accordance with the Federal Radiological Emergency Response Plan (FRERP) and the Federal Response Plan (FRP).

In support of the emergency response actions stated above, we will, on an annual basis, perform the following missions:

1. Assist state agencies and political subdivisions in the development, promotion, and maintenance of plans, procedures, and preparedness programs.
2. Coordinate radiological emergency response training and conduct annual training programs.
3. Maintain a list of media representatives, including names and telephone numbers; as necessary, issue news releases respective to emergency operations involving the North Anna and Surry Power Stations.

These actions are authorized by the Governor of Virginia (Executive Order Number Nineteen (90) and are consonant with the Commonwealth of Virginia Emergency Services and Disaster Law of 1973 (Code of Virginia, Chapter 3.2, Title 44) as amended.

Sincerely,



Michael M. Cline

MMC/ASW/sb



COMMONWEALTH of VIRGINIA

Department of Health
P O BOX 2448
RICHMOND, VA 23218

TDD 1-800-828-1120

January 16, 2002

Mr. Eugene S. Grecheck
Vice President -- Nuclear Support Services
Dominion Energy
Innsbrook Technical Center
5000 Dominion Boulevard
Glen Allen, Virginia 23060

Dear Mr. Grecheck:

Thank you for your letter of January 10, 2002, regarding the Letter of Agreement for emergency response at North Anna and Surry Power Stations.

By this letter, we are renewing our commitment to respond to any radiological emergency at North Anna and Surry Power Stations. The Virginia Department of Emergency Management (VDEM) is the lead agency for the Commonwealth in providing emergency responses. The State Coordinator of Emergency Management at VDEM coordinates such responses with other state agencies and local governments under the framework of the Commonwealth of Virginia Radiological Emergency Response Plan (COVRERP). The Virginia Department of Health (VDH) is committed to providing its support to the State Coordinator of Emergency Management in the implementation of COVRERP.

Should you have any questions, please call Khizar Wasti, Ph.D., Director, Division of Health Hazards Control, VDH at (804) 786-1763.

Sincerely,

A handwritten signature in cursive script, appearing to read "Robert B. Stroube".

Robert B. Stroube, M.D., M.P.H.
Acting State Health Commissioner



Col. W. Gerald Massengill
Superintendent
(804) 674-2000

COMMONWEALTH of VIRGINIA

DEPARTMENT OF STATE POLICE

Post Office Box 1067, Chesapeake, VA 23327-1067

January 15, 2002

Mr. Eugene S. Grecheck
Vice President – Nuclear Support Services
Dominion Energy
5000 Dominion Boulevard
Glen Allen, VA 23060

Dear Mr. Grecheck:

We have reviewed the Surry Emergency Plans and we will provide all possible assistance in the event of an emergency.

We agree to provide the following support to any emergency that may occur at the Surry Power Station upon the direction of the Department of Emergency Management.

1. Assist local officials in disseminating warning.
2. Assist in evacuation in coordination with local officials.
3. Enforce access/egress provision in controlled areas, when established in coordination with local officials.
4. Provide traffic control.
5. Assist to the extent possible in radiological monitoring of vehicles and personnel at traffic control points.

Sincerely,

A handwritten signature in cursive script that reads "G. L. Daniels, Jr.".

Captain George L. Daniels, Jr.
Fifth Division Commander
(757-424-6820)

GLDjr/fs



COMMONWEALTH of VIRGINIA

Mark R. Warner
Governor

W. Tayloe Murphy, Jr.
Secretary of Natural Resources

Department of Game and Inland Fisheries

William L. Woodfin, Jr.
Director

January 17, 2002

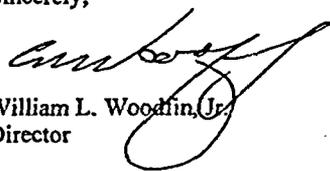
Mr. Eugene S. Grecheck
Vice President – Nuclear Support Services
Dominion Energy
500 Dominion Boulevard
Glen Allen, VA 23060

Dear Mr. Grecheck:

The Department of Game and Inland Fisheries remains in agreement with emergency response plans for the Surry and North Anna Power Stations. This agency will continue to assist you in any future emergency situations as outlined in your plan to the greatest extent possible at the time any emergency might evolve, just as we have previously agreed.

We agree to provide the support listed in appendix 1, Task Assignments, Virginia Radiological Emergency Response Plan. These services, of course, will be furnished at the Surry or North Anna Power Station as directed by Emergency Management.

Sincerely,


William L. Woodfin, Jr.
Director

WLW,Jr/jkc



Virginia Commonwealth University

Health System
MCV Hospitals and Physicians

MCV Campus

**VCU Health System
Administration**

401 North 12th Street, Suite 2-300
P.O. Box 980510
Richmond, Virginia 23298-0510

804 828-0939
Fax: 804 828-1657
TDD: 1-800-828-1120

February 19, 2002

Mr. Eugene S. Grecheck
Vice President - Nuclear Support Services
5000 Dominion Boulevard
Glen Allen, Virginia 23060

Sheldon M. Retchin, MD, MSPH
Senior Executive Vice President
and Chief Operating Officer
VCU Health System

Heleen Gutworth
Office Manager
VCU Health System
Administration

Dear Mr. Grecheck:

**LETTER OF AGREEMENT
NORTH ANNA AND SURRY POWER STATIONS**

The Medical College of Virginia Hospitals/Virginia Commonwealth University agrees to participate in the implementation of the Radiation Emergency Plans for the North Anna and Surry Power Stations and to support the plans within the limits of our organizational capabilities.

The Medical College of Virginia/Virginia Commonwealth University agrees to participate in any planning, training and drilling necessary to insure preparedness. We agree that upon verification of an emergency at either station the following services will be provided:

1. Facilities to treat up to four seriously injured and radioactively contaminated patients in the emergency department.
2. Facilities to treat up to ten non-seriously radioactively contaminated patients in the Sanger Hall morgue area.
3. Hospital transportation (stretchers) to move patients from the morgue area to the emergency department.
4. Campus Police to support traffic control and maintain security around the treatment areas.
5. Central services supplies (oxygen, defibrillators, etc.) to support treatment in the morgue area.
6. Monitoring and counting equipment for the detection and analysis of radioactivity or radiation.
7. Decontamination and other supplies necessary for the isolation and treatment of radioactively contaminated patients.

These services will be available 24 hours a day and are outlined in greater detail in the Radiation Emergency Plan. The Radiation Safety Section of the Office of Environmental Health and Safety is responsible for supplying the radiological support services necessary for the implementation of this plan.

Sincerely,

Sheldon M. Retchin, M.D., M.S.P.H.
Senior Executive Vice President and Chief Operating Officer
VCU Health System

SMR:hg



"The Countrie it selfe, I must
confesse is a very pleasant land,
rich in commodities;
and fertile in soyle. . ."
- Samuel Argall, ca. 1609

Surry County
County Administrator's Office
P. O. Box 65
45 School Street
Surry, Virginia 23883
February 7, 2002

ERNEST L. BLOUNT
Chairman, Board of Supervisors

JOSHUA B. SHEARS
Vice Chairman, Board of Supervisors

REGINALD O. HARRISON

JUDY S. LYTTLE

JOHN M. SEWARD

TERRY D. LEWIS
County Administrator

Telephone (757) 294-5271
Fax (757) 294-5204

Mr. Eugene S. Grecheck
Vice President - Nuclear Support Services
Dominion Energy
5000 Dominion Boulevard
Glen Allen, Virginia 23060

Dear Mr. Grecheck:

We have received your letter of January 10, 2002 indicating a need to revise our agreement with you for your Surry Emergency Plan.

This letter is to inform you that we are willing to participate in the Emergency Plan by providing the following:

1. Operate the County Emergency Operations Center.
2. Coordinate the overall emergency response of all county departments and organizations.
3. Serve as the County point-of-contact with State/Federal agencies.
4. With mechanical equipment provided by Dominion Energy, give early warning to the public.
5. Coordinate radiological emergency response training.
6. Initiate the key county official alert system and notify assisting agencies and departments to evacuate the public from affected areas.

Very truly yours,

Ernest L. Blount
Chairman, Surry County Board of Supervisors

ELB/gs

"Surry is Something Special"



Commonwealth of Virginia
COUNTY OF SURRY
SHERIFF'S OFFICE
H.D. BROWN
SHERIFF
SURRY, VIRGINIA 23883

MEMBER



(757) 294-5264

January 14, 2002

Virginia Power
Nuclear Emergency Preparedness
5000 Dominion Boulevard
Glen Allen, VA 23060

ATT: Eugene S. Grecheck
Vice President - Nuclear Support Services
Domion Energy

Dear Mr. Grecheck,

In reference to your letter of January 10, 2002, the Surry County Sheriff's Office agrees to respond to any emergency at the Surry Power Station in accordance with the Surry Emergency Plan.

The Sheriff's Office is capable of providing the following services:

1. Receive the notification of the radiological emergency and notify the County Coordinator or his designated representatives.
2. Warn key County officials and agencies assigned a radiological emergency responsibility.
3. Warn the public.
4. Evacuate the public from the area affected upon notification from the County Coordinator or Emergency Services.
5. Establish traffic control.
6. Conduct initial radiological monitoring in accordance to Appendix 6 of the Surry County RERP.
7. Enforce access/egress control provisions, when established, in coordination with the State Police.
8. Operate the Emergency Communications Center.

Respectfully,

A handwritten signature in black ink, appearing to read "H. D. Brown".

H. D. Brown
Sheriff



SURRY VOLUNTEER RESCUE SQUAD INC.

11627 Rolfe Hwy.
P.O. Box 188
Surry, Virginia 23883



January 14, 2002

Mr. Eugene S. Grecheck
Vice President – Nuclear Support Services
Dominion Energy
5000 Dominion Boulevard
Glen Allen, VA 23060

Dear Mr. Grecheck:

I have received your letter dated January 10, 2002 regarding “Letters of Agreement” supporting the Surry Power Station Emergency Plan.

This is to inform you that we are in agreement with the Surry Emergency Plan and are willing to support it should the occasion arise.

Accordingly, I hereby submit the following agreement:

We are in agreement with the Surry Power Station
Emergency Plan and will respond to it within the
capabilities of our organization, should our services be requested.

Respectfully,

Thomas A. Gwaltney, Captain
Surry Volunteer Rescue Squad

SERVICES: Emergency Medical Care and Transportation
EQUIPMENT: Three ALS Ambulances – Capacity 6 persons
One Light Duty Rescue Truck, One Rescue Boat
Twenty-eight Members
RESPONSE TIME: Fifteen Minutes



Surry Volunteer Fire Department, Inc.

*25 Bank Street • P. O. Box 260
Surry, Virginia 23883*

January 17, 2001

Mr . Eugene S. Grecheck
Vice President - Nuclear Support Services
Domonion Energy
5000 Dominion Boulevard
Glen Allen, Virginia 23060

Dear Mr. Grecheck

This letter is to inform you that we are in agreement with the Surry Power Station Emergency Plan and are willing to support it should the occasion arise

Accordingly , I hereby submit the following AGREEMENT

We are in agreement with Surry Power Station Emergency Plan and will respond to it within the capabilities of our organization should our services be requested

Services, Fire Protection and Emergency Assistance

Equipment; One (1) 1,000 Gpm Pumper, 1,450 gallons water and 50 gallons foam
One (1) 1,000 GPM Pumper, 1,000 gallons water
One (1) 750 GPM Pumper, 750 gallons water
One (1) 500 GPM Pumper, 500 gallons water
One (1) 500 GPM PUMper, 1,500 gallons water
Two (2) Brush truck, 250 GPM with 250 gallons water
One (1) equipment supply van

Personal: 27 members

Response time: 15 minutes from SVFD to Surry Power Station

Sincerely,

J. Earl Stewart
Fire Chief
Surry Vol. Fire Dept
P.O. Box 260
Surry, Va 23883



COUNTY of ISLE OF WIGHT

THE COURTHOUSE

January 15, 2002

Mr. Eugene S. Grecheck
Vice President – Nuclear Support Services
Dominion Energy
5000 Dominion Boulevard
Glen Allen, Virginia 23060

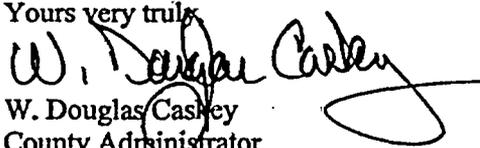
Dear Mr. Grecheck:

Please be advised that this letter serves to update our previous letter of agreement that Isle of Wight County is willing to participate in the emergency plan, if required, and we are capable of providing the following services:

- Operate the County Emergency Operations Center
- Coordinate the overall emergency responses of the County
- Serve as the County point of contact with State and Federal agencies
- Provide public information
- Coordinate radiological emergency response training
- Provide secondary fire responses
- Provide staging for radiological monitoring within the ten (10) mile radius

Please contact me if any additional information is required.

Yours very truly,


W. Douglas Caskey
County Administrator

WDC:chm

Cc: Mr. Richard O. Childress
Major Riddle Hines
Mr. Donald T. Robertson, Assistant to the County
Administrator/Director of Human Resources.

SHERIFF'S OFFICE
COUNTY OF ISLE OF WIGHT
COMMONWEALTH OF VIRGINIA

C. W. PHELPS
SHERIFF

SERVING ISLE OF WIGHT WITH PRIDE

January 14, 2002

Mr. Eugene S. Grecheck
Vice President - Nuclear Support Section
Dominion Energy
5000 Dominion Boulevard
Glen Allen, VA 23060

Dear Mr. Grecheck:

I am happy to comply with your request to update our *Letter of Agreement* with your emergency plan. We are in agreement with said plan and willing to participate in this, if required, and are capable of providing the following services:

- Receive and verify the notification of the radiological emergency.
- Warn key county officials and other agencies assigned to radiological emergency responsibility.
- Warn the public.
- Evacuate the public from affected area(s).
- Maintain traffic control.
- Conduct initial radiological monitoring.
- Access/egress control in coordination with the State Police.
- Operate the Emergency Communications Center.

Sincerely,



C. W. Phelps
Sheriff

CWP:ebs

Cc: Major Riddle Hines, Emergency Services Coordinator
Mr. W. Douglas Caskey, Emergency Services Director for Isle of Wight



Isle of Wight Volunteer Rescue Squad

POST OFFICE BOX 97
SMITHFIELD, VIRGINIA 23431

January 28, 2002

Mr. Eugene S. Grecheck
Vice President-Nuclear Support Services
Dominion Energy
5000 Dominion Boulevard
Glen Allen, VA 23060

Dear Mr. Grecheck:

Pursuant to your letter dated January 10, 2002, regarding a need to update our agreement with your emergency plan.

This letter is to inform you that our organization is in agreement with Surry Emergency Plan and are willing to support it, should the need arise.

Accordingly, I hereby submit the following agreement:

We are in agreement with the Surry Power station's emergency plan and will respond to it within the capabilities of our organization, should our services be requested.

Services: Emergency medical care and transport with Advanced Life Support, 24 hours a day.

Equipment: 5 Medic units, 1 heavy duty rescue vehicle, 1 ALS non-transport response unit

Sincerely,

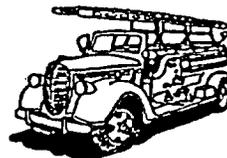
Teri Reeder
Captain

Smithfield Volunteer Fire Department, Inc.

P.O. Box 117

Smithfield, Va. 23431

Phone 357-3231



January 24, 2002

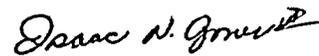
Mr. Eugene S. Grecheck
Vice President - Nuclear Support Services
Dominion Energy
5000 Dominion Boulevard
Glen Allen, Virginia 23060

Dear Mr. Grecheck:

Per Federal Regulations prescribed in NUREG-0654, Rev 1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants", please let this letter serve as our agreement to send one engine carrying 1,000 gallons of water, with a 1,000 g.p.m. pump, one officer, and three firefighters in the event of an emergency at Surry Power Station. If requested this will be followed by a second engine and additional firefighters.

These responses all depend on daytime availability of firemen, as this is a volunteer fire department.

Sincerely,


Isaac N. Jones, III
Chief

Rushmere Volunteer Fire Department
P.O. Box 361
Smithfield, Virginia 23430
Office: (757) 357-3207
Fax: (757) 357-2184
e-mail: RUSHS30@aol.com

Jeremiah Jefferson, President
Bobbie Romig, Secretary
Herman Jones, Treasurer

Keith Jones, Chief
Rudolph Jefferson, Asst'l Chief
Web-Site www.hnjr.com

January 22, 2002

Mr. Eugene S. Grecheck
Vice President – Nuclear Support Services
Dominion Energy
5000 Dominion Boulevard
Glen Allen, Virginia 23060

Dear Mr. Grecheck:

This letter is to inform you that we are in agreement with the Station Emergency Plan and will respond to it within the capabilities of our organization should our services be requested.

Services: Fire Protection and Emergency Assistance

Equipment:

One 1500 GPM Pumper/Tanker, 2000 gallon water
One 1250 GPM Pumper, 1000 gallon water
One 300 GPM Pumper/Tanker, 1200 gallon water
One 750 GPM Pumper, 300 gallon water
One Equipment Vehicle
One Support Unit

Personnel: 25 Firefighters

Sincerely,

Keith Jones
Fire Chief



City Of Newport News

Virginia 23607

Office Of The City Manager

August 20, 2002

2400 Washington Avenue
(757) 926-8411
Fax (757) 926-3503

Mr. Eugene S. Grecheck, Vice President
Dominion Energy - Nuclear Support Services
5000 Dominion Boulevard
Glen Allen, Virginia 23060

Re: Radiological Emergency Response Plan for Surry Power Station

Dear Mr. Grecheck:

The City of Newport News is aware that an operating license granted for the purpose of generating nuclear power requires the licensee to prepare and maintain a radiological emergency response plan, and the concept of contiguous jurisdictions emergency planning zones requires supportive emergency planning and preparedness by jurisdictions within those planning zones. Based upon the City's Radiological Emergency Response Plan, the City will provide the following support services in the event it is called upon to assist or respond to a radiological emergency at the Surry Power Station:

- Operate the City's Emergency Operations Center (EOC).
- Receive and verify notification of a radiological emergency.
- Coordinate the overall emergency response by the City.
- Serve as the City's point-of-contact with state and federal agencies.
- Disseminate public information to Newport News residents.
- Provide traffic control in Newport News.
- Evacuate the public from affected areas in Newport News.
- Operate the City's Mobile Communications Command Post if necessary.
- Provide staging for and conduct radiological monitoring in Newport News.
- Provide personnel to staff radiological teams in Newport News.
- Provide on-site assistance at the Surry Nuclear Power Station if requested and if available.

This letter updates and supercedes all previous radiological emergency response letter agreements.

Very truly yours,


Edgar E. Maroney
City Manager

cc: City Attorney, Fire Chief, Police Chief, Coordinator of Emergency Services
ler123

COUNTY ADMINISTRATOR
James O. McReynolds



BOARD OF SUPERVISORS

Walter C. Zaremba
District 1
Sheila S. Noll
District 2
Donald E. Wiggins
District 3
James S. Burgett
District 4
Thomas G. Shepperd, Jr.
District 5

January 17, 2002

Mr. Eugene S. Grecheck
Vice President – Nuclear Support Services
Dominion Energy
5000 Dominion Boulevard
Glen Allen, Virginia 23060

Dear Mr. Grecheck:

In response to your letter of January 10, 2002, we have an established Emergency Operation Center (EOC) in the meeting room of the Public Safety Building, located at 301 Goodwin Neck Road. We continue to update our Radiological Emergency Response Plan Standard Operating Procedures and can:

- operate the County EOC;
- serve as County point-of-contact with state and federal agencies as required;
- coordinate the overall emergency response plan of the County;
- disseminate public information as outlined by the State Department of Emergency Management in our updated Radiological Emergency Response Plan;
- receive and verify the notification of the radiological emergency;
- warn key County officials and other agencies assigned a radiological emergency responsibility;
- operate the Emergency Communications Center; and
- have available well-trained radiological response personnel and continually add to this group through general refresher courses.

If you have any questions, please contact Stephen P. Kopczynski, Fire Chief, at (757) 890-3600.

Sincerely,

James O. McReynolds
County Administrator



York County Sheriff's Office
Serving the Citizens of York County & Poquoson

"Where Independence Was Won in 1781"



Phone: 757-890-3630
Fax: 757-890-3649
e-mail: sheriff@yorkcounty.gov

J. D. DIGGS, SHERIFF

P.O. Box 99
Yorktown, Virginia 23690-0099
www.yorkcounty.gov/sheriff

January 28, 2000

Mr. Eugene S. Grecheck
Vice President - Nuclear Support Services
Dominion Energy
5000 Dominion Boulevard
GlenAllen, VA 23060

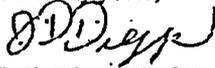
Dear Mr. Grecheck:

As you have requested in your letter dated January 10, 2002, this letter is to update our agreement with your emergency plan and our participation in the Surry Emergency plan if requested.

We will be capable of providing the following services if requested:

1. Receive and verify the notification of the radiological emergency.
2. Warn Key County officials and other agencies assigned a radiological emergency responsibility.
3. Assist in warning the public.
4. Assist in evacuating the public from the area affected.
5. Assist in traffic control.
6. Access/egress control, in coordination with the State Police.
7. Operate the Emergency Communication center.

Sincerely yours,


J. D. Diggs, Sheriff
County of York and City of Poquoson

JDD:cj



CITY OF WILLIAMSBURG

Office of the City Manager
401 Lafayette Street, Williamsburg, Virginia 23185-3617
(757) 220-6100 / Fax (757) 220-6107
citymgr@ci.williamsburg.va.us

January 15, 2002

Mr. Eugene S. Grecheck
Vice President – Nuclear Support Services
Dominion Energy
5000 Dominion Boulevard
Glen Allen, Virginia 23060

RE: Letter of Agreement
Surry Power Station

Dear Mr. Grecheck:

This is in reply to your letter dated January 10, 2002, requesting an update of our Letter of Agreement concerning the Surry Plan.

This is to inform you that we agree to participate in the Surry Emergency Plan by exchange of information with all agencies responding to an emergency at the Surry Power Station. The city will perform the following functions, as necessary:

1. Operate the City Emergency Operating Center.
2. Coordinate the overall emergency response of the city.
3. Designate a city point of contact when interfacing with other jurisdictions.
4. Issue Public Information releases.
5. Coordinate radiological emergency response training.
6. Receive and verify notification of the radiological emergency.
7. Initiate the key city official alert system.
8. Warn the public.
9. Evacuate the public from the areas affected.
10. Control traffic.
11. Coordinate with the County Office of Emergency Services.

Sincerely,

A handwritten signature in black ink, appearing to read "J. C. Tuttle".

Jackson C. Tuttle
City Manager

cc: T.K. Weiler, Fire Chief



COUNTY ADMINISTRATION

101-C MOUNTS BAY ROAD, P.O. BOX 8784, WILLIAMSBURG, VIRGINIA 23187-8784
(757) 253-6605

E-Mail: cadm@james-city.va.us
Fax: (757) 253-6833

January 23, 2002

Mr. Eugene S. Grecheck
Vice President, Nuclear Support Services
Dominion Energy
5000 Dominion Boulevard
Glen Allen, VA 23060

Dear Mr. Grecheck:

Please accept this letter as James City County's intent to comply with NUREG-0654, Rev. 1. James City County has developed a response plan to encompass any emergency that should arise at the Surry Nuclear Plant and will cooperate with the Plant, the State of Virginia, and surrounding jurisdictions should an incident occur.

James City County is prepared to carry out the following activities:

1. Operate the County Emergency Operations Center.
2. Coordinate the overall emergency response of the County.
3. Serve as the County point-of-contact with State and Federal agencies.
4. Disseminate public information.
5. Coordinate radiological emergency response training.
6. Receive and verify notification of the radiological emergency.
7. Alert key County officials and other agencies assigned a radiological emergency response responsibility.
8. Alert the public "activate sirens."
9. Evacuate the public from the area affected.
10. Traffic control
11. Conduct initial radiological monitoring
12. Access/egress control, in coordination with the Police Department.
13. Increase staff in Central Dispatch while incident is in progress.

Sincerely,

Sanford B. Wanner
County Administrator

SBW/gs
grecheck.ltr

APPENDIX 10.2
RADIATION EMERGENCY PLAN
MCVH/VCU - VIRGINIA 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
SECTION IMPLEMENTED

EMERGENCY PLAN IMPLEMENTING PROCEDURES

1.	<u>Emergency Control Procedures</u>	
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.	<u>Notification Procedures</u>	
2.01	Notification of State and Local Governments	5.4, 6.1
2.02	Notification of NRC	6.1
3.	<u>Augmentation Procedures</u>	
3.02	Activation of Technical Support Center	5.0, 5.2.1
3.03	Activation of Operational Support Center	5.0, 5.2.1
3.04	Activation of Local Emergency Operations Facility	5.0, 5.2.2
3.05	Augmentation of Emergency Response Organization	5.0, 6.1
4.	<u>Radiological Monitoring and Dose Assessment Procedures</u>	
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
4.08	Initial Offsite Release Assessment	6.2
4.09	Source Term Assessment	6.2
4.10	Determination of X/Q	6.2
4.13	Offsite Release Assessment with Environmental Data	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

EMERGENCY PLAN IMPLEMENTING PROCEDURES

EMERGENCY PLAN
SECTION IMPLEMENTED

4.17	Monitoring of Emergency Response Facilities	5.2.1.20
4.18	Monitoring of LEOF	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/LEOF Radiation Monitoring System	5.2.1.20
4.30	Use of MIDAS Class A Model	6.2
4.31	Use of MIDAS Class B Model	6.2
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.	<u>Protective Action Procedures</u>	
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	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.	<u>Recovery and Restoration Procedures</u>	
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

<u>NUREG-0654 REF. SECTION</u>	<u>SEP SECTION NO.</u>	<u>NUREG-0654 REF. SECTION</u>	<u>SEP SECTION NO.</u>
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A.1.b	5.4	F.1.b	7.2
A.1.c	Fig.5.4	F.1.c	7.2
A.1.d	5.0	F.1.d	7.2
A.1.e	5.2, 5.4	F.1.e	5.2
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A.2.b	N/A	F.2	6.4.3
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		G.1	8.8
B.1	5.1	G.2	8.8
B.2	5.0, 5.2	G.3.a	8.8, 7.1.5, CERP
B.3	5.0	G.3.b	7.1
B.4	5.2.1.1	G.4.a	5.3.1, Table 5.2
B.5	5.2.1, Tables 5.1 & 5.2	G.4.b	5.3.1
B.6	Fig. 5.4	G.4.c	8.8
B.7.a thru d	5.3.1, Table 5.2	G.5	8.8
B.8	5.3.2		
B.9	5.3.3, 5.4, APP. 10.1	H.1	7.1
		H.2	7.1
C.1.a	5.3, 5.4	H.3	N/A
C.1.b	5.4.7	H.4	5.2
C.1.c	5.4.7	H.5	7.3
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C.3	5.3	H.5.c	7.3.4
C.4	5.3	H.5.d	7.3.5
		H.6.a thru c	7.3, 7.4
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D.2	4.2	H.8	7.3.3
D.3	N/A	H.9	7.1, 7.5
D.4	N/A	H.10	7.5, 8.7
		H.11	APP. 10.7
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E.2	6.1		
E.3	6.1	I.1	4.2
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E.5	N/A	I.3.a thru b	6.2
E.6	6.3.1, 7.6	I.4	6.2
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		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

<u>NUREG-0654</u> <u>REF. SECTION</u>	<u>SEP</u> <u>SECTION NO.</u>	<u>NUREG-0654</u> <u>REF. SECTION</u>	<u>SEP</u> <u>SECTION NO.</u>
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J.10.d thru l	N/A	O.1	8.3
J.10.m	6.3.1	O.1.a	8.4
J.11	N/A	O.1.b	N/A
J.12	N/A	O.2	8.3
		O.3	6.4, Table 8.1
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K.4	N/A	O.4i	8.3
K.5.a thru b	6.4.2	O.4j	8.3
K.6.a thru c	6.4.2	O.5	8.3
K.7	6.4.2		
L.1	6.4	P.1	8.3
L.2	6.4	P.2	8.1
L.3	N/A	P.3	8.1
L.4	6.4	P.4	8.2
		P.5	8.2.3
M.1	9.1	P.6	APP. 10.1-10.3
M.2	9.0	P.7	APP. 10.5
M.3	9.0	P.8	APP. 10.6
M.4	9.2	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 EIPs 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, LEOF, CONTROL ROOM, OSC, TSC

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

EMERGENCY KITS

HP AREA, LEOF, CONTROL ROOM, OSC, TSC

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

<u>OFFSITE (3)</u>	<u>QUANTITY</u>		<u>DESCRIPTION</u>
		<u>RAA</u>	
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

<u>OFFSITE (3)</u>	<u>QUANTITY</u>		<u>DESCRIPTION</u>
		<u>RAA</u>	
--		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
2 btls		--	KI tablets

APPENDIX 10.8

EMERGENCY CLASSIFICATION/INITIATING CONDITIONS

MATRIX

INITIATING CONDITIONS: NOTIFICATION OF UNUSUAL EVENT

CONDITION/APPLICABILITY	INDICATION
<p>NOTE: The alpha-numeric designator, [A.N], preceding each condition/applicability below, indicates the Emergency Action Level designator used in EPIP-1.01, Attachment 1, for that particular item.</p>	
<p>1. [A.1] Inability to reach required unit operating condition within T.S. time limits</p> <p>ABOVE CSD CONDITION</p>	<ul style="list-style-type: none"> • Intentional reduction in power, load or temperature IAW T.S. Action Statement - HAS COMMENCED <p style="text-align: center;"><u>AND</u></p> <ul style="list-style-type: none"> • T.S. Action Statement time limit for condition change - CANNOT BE MET
<p>2. [A.4] Failure of a safety or relief valve to close after pressure reduction</p> <p>ALL CONDITIONS</p>	<ul style="list-style-type: none"> • RCS • RCS pressure - LESS THAN 2000 psig <p style="text-align: center;"><u>OR</u></p> <p>Overpressure Mitigation System – ENABLED</p> <p style="text-align: center;"><u>AND</u></p> <ul style="list-style-type: none"> • Any indication after lift or actuation that Pressurizer Safety or PORV - REMAINS OPEN <p style="text-align: center;"><u>AND</u></p> <ul style="list-style-type: none"> • Flow - NON-ISOLABLE • <u>Main Steam</u> • Excessive flow through Steam Generator Safety or PORV as indicated by rapid RCS cooldown rate GREATER THAN 50° F per hour
<p>3. [A.7] Loss of plant communications capability</p> <p>ALL CONDITIONS</p>	<ul style="list-style-type: none"> • Station PBX Phone System – FAILED <p style="text-align: center;"><u>AND</u></p> <ul style="list-style-type: none"> • Station Gai-Tronics System – FAILED <p style="text-align: center;"><u>AND</u></p> <ul style="list-style-type: none"> • Station UHF Radio System - FAILED

INITIATING CONDITIONS: NOTIFICATION OF UNUSUAL EVENT

CONDITION/APPLICABILITY	INDICATION
<p>4. [A.10] Unplanned loss of most or all safety system annunciators for greater than 15 minutes</p> <p>ABOVE CSD CONDITION</p>	<p>Unplanned loss of most (>75%) or all visual annunciator alarms on panels "A" to "K" for GREATER THAN 15 minutes</p>
<p>5. [B.3] Leak rate or leakage requiring plant shutdown IAW T.S.</p> <p>ABOVE CSD CONDITION</p>	<p>Intentional reduction in power, load or temperature IAW T.S. 3.1.C leakage limit Action Statement - HAS COMMENCED</p>
<p>6. [C.3] Fuel clad damage indication</p> <p>ABOVE CSD CONDITION</p>	<p>• Intentional reduction in power, load or temperature IAW T.S. 3.1.D reactor coolant activity limit Action Statement - HAS COMMENCED</p> <p><u>OR</u></p> <p>High Range Letdown Radiation Monitor: Either of the following indications occur within 30 minutes and remain for at least 15 minutes: 1-CH-RM-118, 2-CH-RM-218: GREATER THAN 5.8×10^3 cpm (indicating 0.1% fuel failure)</p>
<p>7. [C.12] Spent Fuel Storage Facility accident</p> <p>ALL CONDITIONS</p>	<p>• Verified Spent Fuel Storage Cask seal leakage</p> <p><u>OR</u></p> <p>Spent Fuel Storage Cask dropped or mishandled</p>

INITIATING CONDITIONS: NOTIFICATION OF UNUSUAL EVENT

CONDITION/APPLICABILITY	INDICATION
<p>8. [E.5] Effluent release GREATER THAN ODCM allowable limit</p> <p>ALL CONDITIONS</p>	<p>a) Any of the following monitors indicate valid readings above the specified value for GREATER THAN one hour:</p> <ul style="list-style-type: none"> • Vent Vent Kaman, RM-VG-131, GREATER THAN $2.84 \times 10^4 \mu\text{Ci/sec}$ • Process Vent Kaman, RM-GW-130, GREATER THAN $4.59 \times 10^6 \mu\text{Ci/sec}$ • Discharge Tunnel, RM-SW-120 or -220, GREATER THAN $3.3 \times 10^4 \text{cpm}$ <p style="text-align: center;"><u>OR</u></p> <p>b) HP assessment (sample results or dose projections) indicates GREATER THAN 100% ODCM allowable limit</p> <p style="text-align: center;"><u>OR</u></p> <p>c) Surry Radwaste Facility Monitor GREATER THAN 100% ODCM allowable limit as determined by HP:</p> <ul style="list-style-type: none"> • RRM-101: Ventilation Stack Noble Gas Monitor <p style="text-align: center;"><u>OR</u></p> <ul style="list-style-type: none"> • RRM-131: Liquid Effluent Monitor
<p>9. [G.3] Major Secondary line break</p> <p>ABOVE CSD CONDITION</p>	<p>Uncontrolled loss of secondary coolant - IN PROGRESS</p>
<p>10. [H.3] Loss of offsite power or onsite AC power capability</p> <p>ALL CONDITIONS</p>	<ul style="list-style-type: none"> • Offsite power to unit specific Transfer Buses (Unit 1: D & F; Unit 2: E & F) - NOT AVAILABLE <p style="text-align: center;"><u>OR</u></p> <p>Unit Main Generator and both Emergency Diesel Generators - OUT OF SERVICE</p>

INITIATING CONDITIONS: NOTIFICATION OF UNUSUAL EVENT

CONDITION/APPLICABILITY	INDICATION
<p>11. [I.3] Fire lasting GREATER THAN 10 minutes</p> <p>ALL CONDITIONS</p>	<p>Fire in the Protected Area or Switchyard which is not under control within 10 minutes after Fire Brigade - DISPATCHED</p>
<p>12. [J.4] Security threat, unauthorized attempted entry, or attempted sabotage</p> <p>ALL CONDITIONS</p>	<p>Any of the following when determined to have potential for degrading the level of safety of the plant or ISFSI:</p> <ul style="list-style-type: none"> • Receipt of a credible site-specific threat from Security, NRC or FBI • Confirmed hostage situation • Civil disturbance • Discovery of a bomb device (other-than on or near a safety related system which represents an on-going security compromise) • Confirmed attempted intrusion (Protected Area or ISFSI) • Attempted sabotage
<p>13. [K.3] Aircraft crash or unusual aircraft activity</p> <p>ALL CONDITIONS</p>	<ul style="list-style-type: none"> • Confirmed notification of aircraft crash within the site boundary <p style="text-align: center;"><u>OR</u></p> <p>Unusual aircraft activity in the vicinity of the site as determined by the Shift Manager/Station Emergency Manager or Supervisor. Security Shift</p>
<p>14. [K.6] Onsite explosion</p> <p>ALL CONDITIONS</p>	<p>Confirmed report of unplanned explosion within Protected Area or Switchyard</p>
<p>15. [K.9] Onsite or nearsite release of toxic or flammable liquids or gases</p> <p>ALL CONDITIONS</p>	<p>Unplanned release of toxic or flammable agents which may affect safety of station personnel or equipment</p>

INITIATING CONDITIONS: NOTIFICATION OF UNUSUAL EVENT

CONDITION/APPLICABILITY	INDICATION
16. [K.13] Turbine rotating component failure with no casing penetration POWER AND STARTUP	Failure of turbine/generator rotating component resulting in unit trip
17. [L.3] Earthquake detected ALL CONDITIONS	Confirmed earthquake which activates the Event Indicator on the Strong Motion Accelerograph
18. [L.5] Tornado within Protected area or Switchyard ALL CONDITIONS	Tornado visually detected within Protected Area or Switchyard
19. [L.8] Hurricane force winds projected onsite ALL CONDITIONS	a) Either of the following National Weather Service declarations in effect for Surry County: <ul style="list-style-type: none"> • "Hurricane Warning" (tidal flooding along with hurricane force winds are possible) • "Inland High Wind Warning for Hurricane Force Winds" (hurricane force winds may be experienced but no storm surge or tidal flooding is expected) <p style="text-align: center;"><u>OR</u></p> b) Sustained hurricane force winds (GREATER THAN 73 mph) projected onsite within 12 hours
20. [L.11] Flood or low water level ALL CONDITIONS	<ul style="list-style-type: none"> • Flood in the James River GREATER THAN +12 FEET MSL (CW pump motors and entrance to the CW pump pits are at + 12 1/2 feet MSL) but LESS THAN +21 feet MSL (Alert criteria) <p style="text-align: center;"><u>OR</u></p> Water level in the Surry Power Station Intake Canal (CW-LI-101, -201) - LESS THAN +23 1/2 feet and NOT increasing

INITIATING CONDITIONS: NOTIFICATION OF UNUSUAL EVENT

CONDITION/APPLICABILITY	INDICATION
21. [M.4] Station conditions which warrant increased awareness of state and/or local authorities ALL CONDITIONS	Shift Manager/Station Emergency Manager judgement that any of the following exist: • Unit shutdown is other than a controlled shutdown <u>OR</u> Unit is in an uncontrolled condition during operation <u>OR</u> A condition exists that has the potential for escalation and, therefore, warrants notification

INITIATING CONDITIONS: ALERT

CONDITION/APPLICABILITY	INDICATION
<p>1. [A.3] Loss of cooling function needed for Cold Shutdown and Refueling Condition</p> <p>CSD & RSD</p>	<ul style="list-style-type: none"> • Secondary System cooling capability – UNAVAILABLE <p style="text-align: center;"><u>AND</u></p> <ul style="list-style-type: none"> • Loss of any of the following systems: <ul style="list-style-type: none"> • Service Water • Component Cooling • Residual Heat Removal <p style="text-align: center;"><u>AND</u></p> <ul style="list-style-type: none"> • RCS temperature greater than 140° F
<p>2. [A.6] Trip following ATWT that takes the reactor subcritical</p> <p>POWER OPS & HSD</p>	<ul style="list-style-type: none"> • Reactor trip setpoint and coincidences – EXCEEDED <p style="text-align: center;"><u>AND</u></p> <ul style="list-style-type: none"> • Automatic reactor trip from RPS - FAILED <p style="text-align: center;"><u>AND</u></p> <ul style="list-style-type: none"> • Manual reactor trip - REQUIRED <p style="text-align: center;"><u>AND</u></p> <ul style="list-style-type: none"> • Manual reactor trip from Control Room - SUCCESSFUL
<p>3. [A.9] Unplanned loss of safety system annunciators with compensatory indicators unavailable or a transient in progress</p> <p>ABOVE CSD CONDITION</p>	<ul style="list-style-type: none"> • Unplanned loss of most (>75%) or all visual annunciator alarms on panels "A" to "K" for GREATER THAN 15 minutes <p style="text-align: center;"><u>AND</u></p> <ul style="list-style-type: none"> • All computer monitoring capability (e.g., plant computer, ERFCS) - NOT AVAILABLE <p style="text-align: center;"><u>OR</u></p> <p>Significant transient - INITIATED OR IN PROGRESS (e.g., reactor trip, SI, turbine runback >25% thermal reactor power, thermal power oscillations >10%)</p>

INITIATING CONDITIONS: ALERT

CONDITION/APPLICABILITY	INDICATION
<p>4. [A.12] Evacuation of Main Control Room required</p> <p>ALL CONDITIONS</p>	<p>Evacuation of the Control Room with stable shutdown control established within 15 minutes</p>
<p>5. [B.2] RCS leak rate limit – EXCEEDED</p> <p>ABOVE CSD CONDITION</p>	<ul style="list-style-type: none"> • Primary system leak determined to be - GREATER THAN 50 gpm <p style="text-align: center;"><u>AND</u></p> <ul style="list-style-type: none"> • Pressurizer level can be – RESTORED AND MAINTAINED
<p>6. [B.5] Excessive Primary to Secondary leakage with loss of offsite power</p> <p>ABOVE CSD CONDITION</p>	<ul style="list-style-type: none"> • Intentional reduction in power, load or temperature IAW T.S. 3.1.C.6 leakage limit Action Statement - HAS COMMENCED <p style="text-align: center;"><u>AND</u></p> <ul style="list-style-type: none"> • Offsite power to unit specific Transfer Buses (Unit 1: D & F; Unit 2: E & F) - NOT AVAILABLE
<p>7. [B.6] Gross Primary to Secondary leakage</p> <p>ABOVE CSD CONDITION</p>	<ul style="list-style-type: none"> • Steam Generator tube rupture - IN PROGRESS <p style="text-align: center;"><u>AND</u></p> <ul style="list-style-type: none"> • Safety Injection - REQUIRED
<p>8. [C.2] Severe Fuel Clad Damage</p> <p>ABOVE CSD CONDITION</p>	<ul style="list-style-type: none"> • RCS specific activity GREATER THAN 300 $\mu\text{Ci}/\text{gram}$ dose equivalent I-131 <p style="text-align: center;"><u>OR</u></p> <p>High Range Letdown Radiation Monitor: Either of the following indications occur within 30 minutes and remain for at least 15 minutes: 1-CH-RM-118, 2-CH-RM-218: GREATER THAN 5.8×10^4 cpm (indicating 1% fuel failure)</p>

INITIATING CONDITIONS: ALERT

CONDITION/APPLICABILITY	INDICATION
9. [C.10] Fuel damage accident with release of radioactivity to containment or fuel buildings ALL CONDITIONS	• Verified accident involving damage to irradiated fuel <u>AND</u> • HP confirms fission product release from fuel <u>OR</u> Readings on the Ventilation Vent Kaman Monitor (RM-VG-131) - GREATER THAN 2.8×10^5 $\mu\text{Ci}/\text{sec}$
10. [C.11] Loss of cask/fuel containment barriers or accidental criticality ALL CONDITIONS	• Verified loss of all cask/fuel containment barriers <u>AND</u> • HP confirms fission product release from fuel
11. [D.3] High Containment radiation, pressure and temperature ABOVE CSD CONDITION	• Outside Containment High Range Radiation Monitor (RM-RMS-161, -261) GREATER THAN 24 mR/hr <u>OR</u> CHRRMS (Inside) Containment High Range Radiation Monitor (RM-RMS-127, -128, -227, -228) - GREATER THAN 1.54 R/hr <u>AND</u> • Containment pressure GREATER THAN 17.7 psia <u>OR</u> Containment temperature GREATER THAN 150°F

INITIATING CONDITIONS: ALERT

CONDITION/APPLICABILITY	INDICATION
12. [E.3] High radiation or airborne contamination levels indicate a severe degradation in control of radioactive material ALL CONDITIONS	a) Valid unexpected readings on any of the following monitors have increased by a factor of 1000: <ul style="list-style-type: none">• Control Room Area (RM-RMS-157)• Auxiliary Building Control Area (RM-RMS-154)• Auxiliary Building Drumming Area (RM-RMS-155)• Decontamination Building Area (RM-RMS-151)• Fuel Pit Bridge Area (RM-RMS-153)• New Fuel Storage Area (RM-RMS-152)• Laboratory Area (RM-RMS-158)• Sample Room Area (RM-RMS-156) <p style="text-align: center;"><u>OR</u></p> b) Surry Radwaste Facility reports valid unexpected readings on any of the following monitors have increased by a factor of 1000: <ul style="list-style-type: none">• Control Room (RRM-121)• Chemistry Laboratory (RRM-122)• Local Control Panel (RRM-129)• Bitumen Control Room (RRM-130)

INITIATING CONDITIONS: ALERT

CONDITION/APPLICABILITY	INDICATION
13. [E.4] Effluent release GREATER THAN 10 times ODCM allowable limit ALL CONDITIONS	a) Any of the following monitors indicate valid readings above the specified value for GREATER THAN 15 minutes: <ul style="list-style-type: none">• Vent Vent Kaman, RM-VG-131, GREATER THAN $2.84 \times 10^5 \mu\text{Ci/sec}$• Process Vent Kaman, RM-GW-130, GREATER THAN $4.59 \times 10^7 \mu\text{Ci/sec}$• Discharge Tunnel, RM-SW-120 or RM-SW-220, GREATER THAN $3.3 \times 10^5 \text{cpm}$ <p style="text-align: center;"><u>OR</u></p> b) HP assessment (sample results or dose projections) indicates GREATER THAN 10 times ODCM allowable limit
	<p style="text-align: center;"><u>OR</u></p> c) Surry Radwaste Facility Monitor GREATER THAN 10 times ODCM allowable limit as determined by HP: <ul style="list-style-type: none">• RRM-101: Ventilation Stack Noble Gas Monitor <p style="text-align: center;"><u>OR</u></p> <ul style="list-style-type: none">• RRM-131: Liquid Effluent Monitor

INITIATING CONDITIONS: ALERT

CONDITION/APPLICABILITY	INDICATION
<p>14. [G.2] Major Secondary line break with Primary to Secondary leakage GREATER THAN 10 gpm</p> <p>ABOVE CSD CONDITION</p>	<ul style="list-style-type: none"> • Uncontrolled loss of secondary coolant - IN PROGRESS <p style="text-align: center;"><u>AND</u></p> <ul style="list-style-type: none"> • Condenser Air Ejector Monitor 1-SV-RM-111, 2-SV-RM-211: GREATER THAN 1×10^7 cpm <p style="text-align: center;"><u>OR</u></p> <p>Vent Vent Kaman Monitor (RM-VG-131) GREATER THAN 2.84×10^5 μCi/sec</p> <p style="text-align: center;"><u>OR</u></p> <p>Steam Generator Blowdown Radiation Monitor on affected pathway 1-SS-RM-112 or -113, 2-SS-RM-212 or -213 GREATER THAN 1×10^7 cpm</p>
<p>15. [H.2] Loss of all offsite and onsite AC power</p> <p>ALL CONDITIONS</p>	<ul style="list-style-type: none"> • Offsite power to unit specific Transfer Buses (Unit 1: D & F; Unit 2: E & F) - NOT AVAILABLE <p style="text-align: center;"><u>AND</u></p> <ul style="list-style-type: none"> • Station Service Buses A, B, & C - DE-ENERGIZED <p style="text-align: center;"><u>AND</u></p> <ul style="list-style-type: none"> • Emergency Buses H & J - DE-ENERGIZED
<p>16. [H.5] Loss of all onsite DC power</p> <p>ALL CONDITIONS</p>	<ul style="list-style-type: none"> • All Station Battery voltmeters- ZERO (0) VOLTS <p style="text-align: center;"><u>AND</u></p> <ul style="list-style-type: none"> • No light indication available to Reserve Station Service Breakers 15D1, 15E1 and 15F1

INITIATING CONDITIONS: ALERT

CONDITION/APPLICABILITY	INDICATION
17. [I.2] Fire potentially affecting station safety systems ABOVE CSD CONDITION	Fire which has potential for causing a safety system NOT to be operable as defined by T.S.1.0.D and 3.0.2
18. [J.3] Ongoing Security compromise or bomb potentially affecting station safety systems ALL CONDITIONS	Supervisor Security Shift has notified the Shift Manager/Station Emergency Manager of a confirmed un-neutralized intrusion into the Protected Area or ISFSI <u>OR</u> Shift Manager/Station Emergency Manager notified of a verified bomb discovered on or near a safety related system
19. [K.2] Aircraft crash on the facility ALL CONDITIONS	Aircraft crash within the Protected Area or Switchyard
20. [K.5] Explosion damage to facility ALL CONDITIONS	Unplanned explosion resulting in damage to plant structure or equipment that affects plant operations
21. [K.8] Entry of toxic or flammable gases or liquids into plant facility ALL CONDITIONS	Uncontrolled release of toxic or flammable agent which causes: • Evacuation of personnel from plant areas
22. [K.11] Missile damage to safety related equipment or structures ABOVE CSD CONDITION	Notification of missile impact causing damage to safety related equipment or structures
23. [K.12] Turbine failure with penetration POWER	Failure of turbine/generator rotating equipment resulting in casing penetration

INITIATING CONDITIONS: ALERT

CONDITION/APPLICABILITY	INDICATION
<p>24. [L.2] Earthquake GREATER THAN OBE levels</p> <p>ALL CONDITIONS</p>	<ul style="list-style-type: none"> • Confirmed earthquake which activates Event Indicator on the Strong Motion Accelerograph <p style="text-align: center;"><u>AND</u></p> <ul style="list-style-type: none"> • Safety related equipment is rendered inoperable by earthquake <p style="text-align: center;"><u>OR</u></p> <p>AP-37.00, SEISMIC EVENT, calculations indicate horizontal motion of 0.07g or GREATER</p>
<p>25. [L.4] Tornado striking facility</p> <p>ALL CONDITIONS</p>	<p>Tornado visually detected striking structures within the Protected Area or Switchyard</p>
<p>26. [L.7] Hurricane winds near design basis level experienced or projected</p> <p>ALL CONDITIONS</p>	<p>Hurricane winds 120 mph OR GREATER experienced or projected</p>
<p>27. [L.10] Flood or low water level near design levels</p> <p>ALL CONDITIONS</p>	<ul style="list-style-type: none"> • Flood in the James River - GREATER THAN +21 feet MSL (Emergency Service Water Pump House entrance is at +21 1/6 feet) but LESS THAN +27 feet MSL (Site Area Emergency criteria) <p style="text-align: center;"><u>OR</u></p> <p>Water level in the Surry Power Station Intake Canal - LESS THAN +23 1/2 feet AND decreasing</p>
<p>28. [M.3] Station conditions which have the potential to degrade or are actually degrading the level of safety of the station</p> <p>ALL CONDITIONS</p>	<p>Shift Manager/Station Emergency Manager judgement</p>

INITIATING CONDITIONS: SITE AREA EMERGENCY

CONDITION/APPLICABILITY	INDICATION
1. [A.2] Loss of Function needed for unit HSD condition ABOVE CSD CONDITION	a) Inability to attain the minimum required heat sink as indicated by loss of the following: • Main Feedwater System <u>AND</u> • Auxiliary Feedwater <u>AND</u> • Auxiliary Feedwater Crosstie <u>OR</u> b) Loss of High Head flowpath as indicated by loss of the following: • Normal Charging System <u>AND</u> • High Head SI System
2. [A.5] Failure of the reactor to trip (ATWT) POWER OPS & HSD	• Reactor trip setpoint and coincidences - EXCEEDED <u>AND</u> • Automatic reactor trip from RPS - FAILED <u>AND</u> • Manual reactor trip from Control Room - FAILED

INITIATING CONDITIONS: SITE AREA EMERGENCY

CONDITION/APPLICABILITY	INDICATION
3. [A.8] Inability to monitor a significant transient in progress ABOVE CSD CONDITION	<ul style="list-style-type: none">• Most (>75%) or all visual annunciator alarms on panels "A" to "K" - NOT AVAILABLE <p style="text-align: center;"><u>AND</u></p> <ul style="list-style-type: none">• All computer monitoring capability (e.g., plant computer, ERFCS) - NOT AVAILABLE <p style="text-align: center;"><u>AND</u></p> <ul style="list-style-type: none">• Significant transient - IN PROGRESS (e.g., reactor trip, SI, turbine runback >25% thermal reactor power, thermal power oscillations >10%) <p style="text-align: center;"><u>AND</u></p> <ul style="list-style-type: none">• Inability to directly monitor any one of the following using Control Room indications:<ul style="list-style-type: none">• Subcriticality• Core Cooling• Heat Sink• Vessel Integrity• Containment Integrity
4. [A.11] Evacuation of Main Control Room with control NOT established within 15 minutes ALL CONDITIONS	Evacuation of the Control Room with stable shutdown control NOT established within 15 minutes

INITIATING CONDITIONS: SITE AREA EMERGENCY

CONDITION/APPLICABILITY	INDICATION
5. [B.1] RCS leak rate exceeds makeup capacity ABOVE CSD CONDITION	<ul style="list-style-type: none">• Primary system leak (LOCA) - IN PROGRESS <p style="text-align: center;"><u>AND</u></p> <ul style="list-style-type: none">• Safety Injection - REQUIRED <p style="text-align: center;"><u>AND</u></p> <ul style="list-style-type: none">• RCS subcooling based on Core Exit Thermocouples - LESS THAN 30° F <p style="text-align: center;"><u>OR</u></p> <p>RCS inventory cannot be maintained based on pressurizer level or RVLIS indication</p>
6. [B.4] Steam generator tube rupture with loss of offsite power ABOVE CSD CONDITION	<ul style="list-style-type: none">• Steam generator tube rupture - IN PROGRESS <p style="text-align: center;"><u>AND</u></p> <ul style="list-style-type: none">• Offsite power to unit specific Transfer Buses (Unit 1: D & F; Unit 2: E & F) - NOT AVAILABLE <p style="text-align: center;"><u>AND</u></p> <ul style="list-style-type: none">• Atmospheric steam release from ruptured Steam Generator - OCCURRING OR REQUIRED

INITIATING CONDITIONS: SITE AREA EMERGENCY

CONDITION/APPLICABILITY	INDICATION
7. [C.1] Core damage with possible loss of coolable geometry ABOVE CSD CONDITION	a) Fuel clad failure as indicated by any of the following: <ul style="list-style-type: none">• RCS Specific activity - GREATER THAN 60 $\mu\text{Ci}/\text{gram}$ dose equivalent I-131 <p style="text-align: center;"><u>OR</u></p> <ul style="list-style-type: none">• High Range Letdown Radiation Monitor: 1-CH-RM-118, 2-CH-RM-218: GREATER THAN 1.4×10^6 cpm <p style="text-align: center;"><u>AND</u></p> b) Loss of cooling as indicated by any of the following: <ul style="list-style-type: none">• 5 confirmed core exit thermocouples - GREATER THAN 1200°F <p style="text-align: center;"><u>OR</u></p> Core delta T - ZERO <p style="text-align: center;"><u>OR</u></p> Core delta T - RAPIDLY DIVERGING
8. [C.9] Major fuel damage accident with radioactive release to containment or fuel buildings ALL CONDITIONS	• Water level in reactor vessel during refueling - BELOW TOP OF CORE
	<p style="text-align: center;"><u>OR</u></p> Water level in Spent Fuel Pit verified - BELOW TOP OF SPENT FUEL
	<p style="text-align: center;"><u>AND</u></p> • Verified damage to irradiated fuel resulting in readings on Ventilation Vent Kaman Monitor: (RM-VG-131) - GREATER THAN 4.2×10^7 $\mu\text{Ci}/\text{sec}$

INITIATING CONDITIONS: SITE AREA EMERGENCY

CONDITION/APPLICABILITY	INDICATION
9. [D.2] High Containment radiation, pressure, and temperature ABOVE CSD CONDITION	• Outside Containment High Range Radiation Monitor (RM-RMS-161, -261) - GREATER THAN 6.3×10^2 mR/hr <u>OR</u> CHRRMS (Inside) Containment High Range Radiation Monitor (RM-RMS-127, -128, -227, -228) - GREATER THAN 2×10^3 R/hr <u>AND</u> • Containment pressure - GREATER THAN 23 psia and NOT decreasing <u>OR</u> Containment temperature - GREATER THAN 200°F
10. [E.2] Release imminent or in progress and site boundary doses projected to exceed 100 mrem TEDE or 500 mrem Thyroid CDE ALL CONDITIONS	HP assessment indicates actual or projected doses at or beyond Site Boundary - GREATER THAN 100 mrem TEDE or 500 mrem Thyroid CDE

INITIATING CONDITIONS: SITE AREA EMERGENCY

CONDITION/APPLICABILITY	INDICATION
11. [G.1] Major Secondary line break with Primary to Secondary leakage GREATER THAN 50 gpm and fuel damage indicated ABOVE CSD CONDITION	<ul style="list-style-type: none"> • Uncontrolled loss of secondary coolant - IN PROGRESS <p style="text-align: center;"><u>AND</u></p> <ul style="list-style-type: none"> • RCS specific activity GREATER THAN 300 $\mu\text{Ci}/\text{gram}$ D.E. I-131 <p style="text-align: center;"><u>OR</u></p> <p>High Range Letdown Radiation Monitor on affected pathway 1-CH-RM-118, 2-CH-RM-218: GREATER THAN 7.0×10^6 cpm</p> <p style="text-align: center;"><u>AND</u></p> <ul style="list-style-type: none"> • Condenser Air Ejector Radiation Monitor 1-SV-RM-111, 2-SV-RM-211: GREATER THAN 1×10^7 cpm <p style="text-align: center;"><u>OR</u></p> <p>Vent Vent Kaman Monitor (RM-VG-131) GREATER THAN 1.1×10^7 $\mu\text{Ci}/\text{sec}$</p> <p style="text-align: center;"><u>OR</u></p> <p>Steam Generator Blowdown Radiation Monitor on affected pathway 1-SS-RM-112 or -113, 2-SS-RM-212 or -213: GREATER THAN 1×10^7 cpm</p> <p style="text-align: center;"><u>OR</u></p> <p>Main Steam Line High Range Radiation Monitor on affected pathway (RM-RI-MS-124, -125, -126, -224, -225, -226) GREATER THAN 1.94 mR/hr</p>

INITIATING CONDITIONS: SITE AREA EMERGENCY

CONDITION/APPLICABILITY	INDICATION
<p>12. [H.1] Loss of offsite and onsite AC power for more than 15 minutes</p> <p>ALL CONDITIONS</p>	<p>The following conditions exist for GREATER THAN 15 minutes:</p> <ul style="list-style-type: none"> • Offsite power to unit specific Transfer Buses (Unit 1: D & F; Unit 2: E & F) - NOT AVAILABLE <p style="text-align: center;"><u>AND</u></p> <ul style="list-style-type: none"> • Station Service Buses A, B, & C - DE-ENERGIZED <p style="text-align: center;"><u>AND</u></p> <ul style="list-style-type: none"> • Emergency Buses H & J - DE-ENERGIZED
<p>13. [H.4] Loss of all onsite DC power for GREATER THAN 15 minutes</p> <p>ALL CONDITIONS</p>	<p>The following conditions exist for GREATER THAN 15 minutes:</p> <ul style="list-style-type: none"> • All station Battery voltmeters - ZERO (0) VOLTS <p style="text-align: center;"><u>AND</u></p> <ul style="list-style-type: none"> • No light indication available to Reserve Station Service Breakers 15D1, 15E1 and 15F1
<p>14. [I.1] Fire resulting in degradation of safety systems</p> <p>ABOVE CSD CONDITION</p>	<ul style="list-style-type: none"> • Fire which causes major degradation of a safety system function required for protection of the public <p style="text-align: center;"><u>AND</u></p> <ul style="list-style-type: none"> • Affected systems are caused NOT to be operable as defined by T.S.1.0.D and 3.0.2
<p>15. [J.2] Imminent loss of physical Station control</p> <p>ALL CONDITIONS</p>	<p>Supervisor Security Shift has notified the Shift Manager/Station Emergency Manager of imminent intrusion into a Vital Area</p>

INITIATING CONDITIONS: SITE AREA EMERGENCY

CONDITION/APPLICABILITY	INDICATION
<p>16. [K.1] Aircraft damage to vital plant systems</p> <p>ABOVE CSD CONDITION</p>	<p>Aircraft crash adversely affects vital structures by impact or fire</p>
<p>17. [K.4] Severe explosive damage</p> <p>ABOVE CSD CONDITION</p>	<p>Explosion which results in severe degradation of any systems required for safe shutdown</p>
<p>18. [K.7] Entry of toxic or flammable gases or liquids into plant vital areas other than the Control Room</p> <p>ABOVE CSD CONDITION</p>	<ul style="list-style-type: none"> • Uncontrolled release of toxic or flammable agents into Vital Areas <p style="text-align: center;"><u>AND</u></p> <ul style="list-style-type: none"> • Evacuation of Vital Area other than Control Room - REQUIRED <p style="text-align: center;"><u>OR</u></p> <p>Loss of a safety system function required for protection of the public</p>
<p>19. [K.10] Severe missile damage to safety systems</p> <p>ABOVE CSD CONDITION</p>	<p>Missile impact causing severe degradation of safety systems required for unit shutdown</p>
<p>20. [L.1] Earthquake GREATER THAN DBE levels</p> <p>ABOVE CSD CONDITION</p>	<ul style="list-style-type: none"> • Earthquake which activates the Event Indicator on the Strong Motion Accelerograph <p style="text-align: center;"><u>AND</u></p> <ul style="list-style-type: none"> • Safety related systems are significantly degraded by earthquake <p style="text-align: center;"><u>OR</u></p> <p>AP-37.00, SEISMIC EVENT, calculations indicate horizontal motion of 0.15g or GREATER</p>

INITIATING CONDITIONS: SITE AREA EMERGENCY

CONDITION/APPLICABILITY	INDICATION
21. [L.6] Sustained winds in excess of design levels experienced or projected ABOVE CSD CONDITION	Sustained winds 150 mph OR GREATER experienced or projected
22. [L.9] Flood or low water level above design levels ALL CONDITIONS	• Flood in the James River - GREATER THAN +27 feet MSL (Station operating level) <u>OR</u> Water level in the James River LESS THAN -9 feet MSL as indicated by loss of Emergency SW Pump suction
23. [M.2] Station conditions which may warrant notification of the public near the site ALL CONDITIONS	Shift Manager/Station Emergency Manager judgement

INITIATING CONDITION: GENERAL EMERGENCY

CONDITION/APPLICABILITY	INDICATION
1. [B.7] Loss of 2 of 3 fission product barriers with potential loss of 3rd barrier ALL CONDITIONS	Any two of a), b) or c) exist and the third is imminent: a) Fuel clad integrity failure as indicated by any of the following: <ul style="list-style-type: none">• RCS specific activity - GREATER THAN OR EQUAL TO 300 $\mu\text{Ci}/\text{gram}$ dose equivalent I-131 <p style="text-align: center;"><u>OR</u></p> <p>5 or more core exit thermocouples reading - GREATER THAN 1200°F</p> <p style="text-align: center;"><u>OR</u></p> <p>CHRRMS (Inside) Containment High Range Radiation Monitor (RM-RMS-127, -128, -227, -228): GREATER THAN 2×10^3 R/hr</p> <p style="text-align: center;"><u>OR</u></p> <p>Outside Containment High Range Radiation Monitor (RM-RMS-161, -261): GREATER THAN 6.3×10^2 mR/hr</p> b) Loss of RCS integrity as indicated by any of the following: <ul style="list-style-type: none">• PORV failed open <p style="text-align: center;"><u>OR</u></p> <p>Loss of reactor coolant</p> c) Loss of containment integrity as indicated by any of the following: <ul style="list-style-type: none">• Containment pressure GREATER THAN 60 psia and NOT decreasing <p style="text-align: center;"><u>OR</u></p> <p>Release path to environment - EXISTS</p>

INITIATING CONDITION: GENERAL EMERGENCY

CONDITION/APPLICABILITY	INDICATION
2. [B.8] Fuel failure with steam generator tube rupture ALL CONDITIONS	<p>Any two of a), b) or c) exists and the third is imminent:</p> <p>a) Fuel clad integrity failure as indicated by any of the following:</p> <ul style="list-style-type: none">• RCS specific activity GREATER THAN OR EQUAL TO 300 $\mu\text{Ci}/\text{gram}$ dose equivalent I-131 <p style="text-align: center;"><u>OR</u></p> <p>5 or more core exit thermocouples reading - GREATER THAN 1200°F</p> <p style="text-align: center;"><u>OR</u></p> <p>High Range Letdown Radiation Monitor: 1-CH-RM-118, 2-CH-RM-218: GREATER THAN 7.0×10^6 cpm</p> <p>b) S/G tube rupture as indicated by both of the following:</p> <ul style="list-style-type: none">• Safety Injection - REQUIRED <p style="text-align: center;"><u>AND</u></p> <ul style="list-style-type: none">• Steam generator tube rupture - IN PROGRESS <p>c) Loss of Secondary integrity associated with ruptured S/G pathway as indicated by:</p> <ul style="list-style-type: none">• Steam discharge to atmosphere <p style="text-align: center;"><u>OR</u></p> <p>Loss of secondary coolant outside containment - IN PROGRESS</p>

INITIATING CONDITION: GENERAL EMERGENCY

CONDITION/APPLICABILITY	INDICATION
<p>3. [C.4] Probable large radioactivity release initiated by LOCA with ECCS failure leading to core degradation</p> <p>ABOVE CSD CONDITION</p>	<ul style="list-style-type: none"> • Loss of reactor or secondary coolant - IN PROGRESS <p style="text-align: center;"><u>AND</u></p> <ul style="list-style-type: none"> • RCS specific activity - GREATER THAN 300 $\mu\text{Ci}/\text{gram}$ dose equivalent I-131 <p style="text-align: center;"><u>OR</u></p> <p>CHRRMS (Inside) Containment High Range Radiation Monitor (RM-RMS-127, -128, -227, -228) GREATER THAN 2×10^3 R/hr</p> <p style="text-align: center;"><u>AND</u></p> <ul style="list-style-type: none"> • High or Low Head ECCS flow - NOT being delivered to the core (if expected plant conditions)
<p>4. [C.5] Probable large radioactivity release initiated by loss of heat sink leading to core degradation</p> <p>ABOVE CSD CONDITION</p>	<ul style="list-style-type: none"> • Loss of Main Feedwater System and Condensate System <p style="text-align: center;"><u>AND</u></p> <ul style="list-style-type: none"> • Loss of Auxiliary Feedwater System <p style="text-align: center;"><u>AND</u></p> <ul style="list-style-type: none"> • RHR System - NOT OPERABLE
<p>5. [C.6] Probable large radioactivity release initiated by failure of protection system to bring reactor subcritical and causing core degradation</p> <p>ABOVE CSD CONDITION</p>	<ul style="list-style-type: none"> • Reactor nuclear power after trip remains - GREATER THAN 5% <p style="text-align: center;"><u>AND</u></p> <ul style="list-style-type: none"> • RCS pressure GREATER THAN 2485 psig and NOT decreasing <p style="text-align: center;"><u>OR</u></p> <p>Containment pressure and temperature - RAPIDLY INCREASING</p>

INITIATING CONDITION: GENERAL EMERGENCY

CONDITION/APPLICABILITY	INDICATION
6. [C.7] Probable large radioactivity release initiated by loss of AC and all feedwater ABOVE CSD CONDITION	• Loss of all onsite and offsite AC power <u>AND</u> • Turbine Driven Auxiliary Feedwater Pump - NOT OPERABLE <u>AND</u> • Restoration of either the above NOT LIKELY within 2 hours
7. [C.8] Probable large radioactivity release initiated by LOCA with loss of ECCS and containment cooling ABOVE CSD CONDITION	• Loss of reactor or secondary coolant – IN PROGRESS <u>AND</u> • High or Low Head ECCS flow NOT being delivered to the core (if expected by plant conditions) <u>AND</u> • Containment RS sump temperature GREATER THAN 190°F and NOT decreasing <u>OR</u> All Containment Spray and Recirculation Spray Systems - NOT OPERABLE

INITIATING CONDITION: GENERAL EMERGENCY

CONDITION/APPLICABILITY	INDICATION
<p>8. [D.1] Extremely high Containment radiation, pressure and temperature</p> <p>ABOVE CSD CONDITION</p>	<ul style="list-style-type: none"> • Outside Containment High Range Radiation Monitor (RM-RMS-161, -261) - GREATER THAN 3×10^3 mR/hr <p style="text-align: center;"><u>OR</u></p> <p>CHRRMS (Inside) Containment High Range Radiation Monitor (RM-RMS-127, -128, -227, -228) GREATER THAN 9×10^3 R/hr</p> <p style="text-align: center;"><u>AND</u></p> <ul style="list-style-type: none"> • Containment pressure - GREATER THAN 45 psia AND is NOT decreasing <p style="text-align: center;"><u>OR</u></p> <p>Containment temperature - GREATER THAN 280° F</p>
<p>9. [E.1] Release imminent or in progress and site boundary doses projected to exceed 1.0 Rem TEDE or 5.0 Rem Thyroid CDE</p> <p>ALL CONDITIONS</p>	<p>HP assessment indicates actual or projected doses at or beyond Site Boundary - GREATER THAN 1.0 Rem TEDE or 5.0 Rem Thyroid CDE</p>
<p>10. [J.1] Loss of Station physical control</p> <p>ALL CONDITIONS</p>	<ul style="list-style-type: none"> • Shift Manager/Station Emergency Manager has been informed that the Security force has been neutralized by attack, resulting in loss of physical control of station <p style="text-align: center;"><u>OR</u></p> <p>Shift Manager/Station Emergency Manager has been informed of intrusion into one or more Vital Areas which are occupied or controlled by an aggressor</p>
<p>11. [M.1] Any major internal or external event which singly or in combination cause massive damage to station facilities or may warrant evacuation of the public</p> <p>ALL CONDITIONS</p>	<p>Shift Manager/Station Emergency Manager judgement</p>