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10 CFR 50.54

LR-N07-0112

Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D.C. 20555-0001

Salem Nuclear Generating Station, Units 1 and 2
Facility Operating License Nos. DPR-70 and 75
NRC Docket Nos. 50-272 and 50-311

Hope Creek Generating Station
Facility Operating License No. NPF-57
NRC Docket No. 50-354

Subject: Request For Emergency Plan Change

Pursuant to 10 CFR 50.54(q) and 10 CFR 50.4(b)(5), PSEG Nuclear LLC hereby submits a proposed change to the PSEG Nuclear LLC Emergency Plan. This Emergency Plan change requests an extension to the time goal for key emergency response organization (ERO) personnel to respond and activate emergency response facilities (ERFs) in the event of an emergency. Affected sections of the Emergency Plan will be changed to reflect more realistic emergency response organization augmentation staffing and ERF activation time goals upon approval of this request.

The proposed change has been reviewed considering the requirements of 10 CFR 50.54(q), 10 CFR 50.47(b), 10 CFR 50.47(d), and 10 CFR 50 Appendix E. The review determined that increasing ERO augmentation and ERF activation time goals would require prior NRC review and approval, but would not result in a reduction of the capability of the ERO to respond to an emergency. This change would constitute an alternate method, as defined in Regulatory Guide 1.101, for ERO augmentation and timely staffing of ERFs. The proposed change enhances the PSEG Nuclear LLC Emergency Plan by creating ERF activation time goals consistent with local population and traffic changes. Adoption of the proposed change would result in optimization of ERO resources, response, and execution.

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JUN 01 2007

Document Control Desk
Page 2
LR-N07-0112

Attachment 1 discusses Reasons and Regulatory Basis for the proposed change. Attachment 2 presents Justification of the Proposed Emergency Plan Change including a comparison between the NRC Safety Evaluation Report (SER) approved ERO staffing levels and the proposed ERO staffing levels based on Table B-1 in NUREG-0737. Attachment 3 presents a synopsis of the proposed Emergency Plan revisions while Attachment 4 displays Emergency Plan Sections 3 and 9 reflecting the proposed changes. Attachment 5 is a copy of the SER, Supplement 5, approved revisions (January 1986) to the Hope Creek Emergency Plan, Sections 3 and 9 and a copy of the revision zero (July 1987) of Artificial Island Emergency Plan, Sections 3 and 9. Attachment 6 is an Assessment of Hope Creek Emergency Operating Procedures (EOPs) vs. the Severe Accident Guidelines (September 2006).

The proposed PSEG Nuclear LLC Emergency Plan changes are similar to changes submitted by other licensees, including the Columbia Generating Station (CGS) (accession #: ML042440479) and River Bend Nuclear Station (RBNS) (accession #: ML003729929). Furthermore, the proposed PSEG Nuclear LLC Emergency Plan changes and evaluation documented in this submittal continue to meet the standards of 10 CFR 50.47 (b) and the requirements of 10 CFR 50 Appendix E.

PSEG Nuclear LLC respectfully requests NRC staff review and approval of this submittal within one year to facilitate new ERO personnel position assignments, and associated training/drills upon completion of the May, 2008 Graded Exercise. PSEG Nuclear LLC personnel are available to meet with the NRC staff, as needed, to facilitate the review and approval of this submittal. PSEG Nuclear LLC will implement this submittal within 180 days of NRC's approval.

If you have any questions or require additional information, please contact Paul Duke, Senior Licensing Engineer, at 856-339-1466 or David Burgin, Emergency Preparedness Manager, at 856-339-1595.

Sincerely,



Thomas P. Joyce
Site Vice President - Salem

JUN 01 2007

Document Control Desk
Page 3
LR-N07-0112

Attachments (6)

1. Reason and Regulatory Basis for Proposed Change to PSEG Nuclear LLC Emergency Plan
2. Justification Of Proposed Change To PSEG Nuclear LLC Emergency Plan
3. Synopsis of Proposed Revisions To PSEG Nuclear LLC Emergency Plan
4. Proposed PSEG Nuclear LLC Emergency Plan Sections 3 and 9 revisions
5. SER approved revisions (January 1986) of the Hope Creek Emergency Plan, Sections 3 & 9, and Revision Zero, (July 1987) of PSEG Artificial Island Emergency Plan, Sections 3 and 9
6. Hope Creek Assessment of EOP vs. SAG Steps

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REASON AND REGULATORY BASIS FOR PROPOSED CHANGE TO PSEG NUCLEAR LLC EMERGENCY PLAN

SUMMARY OF PROPOSED CHANGE:

The proposed change will revise the response time goals for ERO augmentation staffing and activation of the Emergency Response Facilities (ERFs) in the PSEG Nuclear LLC Emergency Plan (E-Plan), Sections 3 and 9 from within one hour of initial notification of personnel to within 90 minutes of emergency classification (Alert or higher). See Attachment 3 for a specific list of proposed E-Plan changes.

GAP BETWEEN CURRENT AND PROPOSED CHANGE:

The GAP between our current E-Plan augmentation time and the proposed augmentation time is 15 minutes.

The current E-Plan calls for ERO augmentation by key responders, referred to as "Duty Responders" to staff and/or activate ERFs, "...*within one hour following initial notification.*" This E-Plan requirement effectively results in ERO augmentation being required within 75 minutes of classification with consideration for the time between emergency classification and ERO initial notification (up to 15 minutes). Therefore, ERO augmentation is currently required within 75 minutes from emergency classification by the Shift Manager. The additional 15 minutes is based on the time for "*initial notification*" after emergency classification and is defined as the time needed for the Shift Manager to activate the ERO callout system, the time for the automated callout system to send an activation signal to all pager groups, and the time for all pagers (4 teams) to activate.

In summary, PSEG is requesting a change from the current approved E-Plan augmentation criteria of **one hour following initial notification to 90 minutes after emergency classification.**

REASON FOR CHANGE REQUEST:

It has become increasingly difficult to meet the current ERF staffing and activation timeliness goal for ERO augmented staffing in a declared emergency. The Salem and Hope Creek Generating Stations are located in Salem County, New Jersey and sited in a rural location on the Delaware River with a 6-mile access road. Based on a review of census data between 1980 and 2000, local demographics have changed over the operational life of the plants and continue to change. While the population of Salem City, which is nearest to the plant, has been fairly steady since 1980, the population in areas further from the plant, areas where most PSEG Nuclear personnel reside, continues to grow. This growth has caused the Delaware Valley traffic patterns to change, (more traffic lights, full stop intersections, and increased road congestion) resulting in increased transit times to our ERFs from the surrounding communities. Some local communities that were a 45-minute drive to the site 20 years ago are now a 55-60 minute drive. Following the terrorist attacks of 9-11-2001, Security Plan changes have added a site access checkpoint and elimination of close-in parking resulting in an

REASON AND REGULATORY BASIS FOR PROPOSED CHANGE TO PSEG NUCLEAR LLC EMERGENCY PLAN

increased onsite transit time. The increased transit times reduce the number of PSEG personnel available to fill ERO duty positions resulting in an unavailable pool of experienced ERO candidates (27% of PSEG Nuclear non-bargaining unit employees) that are not able to meet the response time requirements of 60-minute "duty responder" positions. Implementation of the proposed change reduces the unavailable pool to < 5% of PSEG Nuclear non-bargaining unit employees.

The impact on response times has been demonstrated during multiple unannounced, off-hours ERO callout drills conducted annually. The Technical Support Center (TSC) is repeatedly the last of the ERFs to be fully "duty responder" staffed, typically at 70 minutes after classification (60 minutes following initiation of ERO notification), leaving little time for TSC turnover and activation. PSEG personnel having difficulty making the 60-minute response time requirement have been replaced on the ERO by personnel who reside closer to the site. However, a large portion of site ERO responders still reside greater than 45 minutes from the site and therefore have marginal response times and are in jeopardy of exceeding the 60-minute response time requirement if even minor delays are encountered.

Maintaining an appropriate number of on-shift personnel, crediting additional on-shift positions, technological advances available for those on-shift responders, and changing the augmentation timeliness response time to 90 minutes is a practical and prudent alternate method to ensure effective and timely emergency response augmentation. Implementing the proposed change, such that ERO personnel in a "duty responder" position can respond within 90 minutes to their assigned ERF, will increase the number of Salem - Hope Creek personnel available to fill ERO "Duty Responder" positions. This will enhance implementation of the emergency response, as additional highly qualified and experienced ERO candidates will now be eligible to fill critical ERO "duty responder" positions.

REGULATORY BASIS:

The regulatory requirements and guidance involving ERO staffing and augmentation are as follows:

10 CFR 50.47(b)(1) states, "Primary responsibilities for emergency response by the nuclear facility licensee and by State and local organizations within the Emergency Planning Zones have been assigned, the emergency responsibilities of the various supporting organizations have been specifically established, and each principal response organization has staff to respond and to augment its initial response on a continuous basis."

10 CFR 50.47(b)(2) states, "On-shift facility licensee responsibilities for emergency response are unambiguously defined, adequate staffing to provide initial facility accident response in key functional areas is maintained at all times, timely augmentation of

REASON AND REGULATORY BASIS FOR PROPOSED CHANGE TO PSEG NUCLEAR LLC EMERGENCY PLAN

response capabilities is available and the interfaces among various onsite response activities and offsite support and response activities are specified.”

NRC Regulatory Guide 1.101, Rev. 4, Section C states in part, “The criteria and recommendations contained in Revision 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’ (November 1980), are methods acceptable to the NRC staff for complying with the standards in 10 CFR 50.47 that must be met in onsite and offsite emergency response plans. These criteria provide a basis for NRC licensees and State and local governments to develop acceptable radiological emergency plans and improve emergency preparedness.”

NUREG-0654/FEMA-REP-1, Rev. 1, Section II.B.5 states in part “Each licensee shall specify the positions or title and major tasks to be performed by the persons to be assigned to the functional areas of emergency activity. For emergency situations, specific assignments shall be made for all shifts and for plant staff members, both onsite and away from the site. These assignments shall cover the emergency functions in Table B-1 entitled, ‘Minimum Staffing Requirements for Nuclear Power Plant Emergencies.’ The minimum on-shift staffing levels shall be as indicated in Table B-1. The licensee must be able to augment on-shift capabilities within a short period after declaration of an emergency. This capability shall be as indicated in Table B-1.”

HOPE CREEK EMERGENCY PLAN, SER SUPPLEMENT 5, April 1986, Section 13.3, defines that Hope Creek Emergency Plan, Revision 10, dated January 13, 1986, was the revision of record for the SER Supplement and included Section 3, Revision 8, “Organization” and Section 9, Revision 8, “Emergency Facilities and Equipment.”

Emergency Plan Section 9, Revision 8, “Emergency Facilities and Equipment”, specifically stated in the TSC section 9.1 that:

“It is estimated that this facility can be fully activated within one hour following initial notification of personnel assigned to the TSC. This estimate is only a target value and may vary based on initial notifications, travel and other conditions.”

Emergency Plan Section 3, Revision 8, “Organization” contains the review of Hope Creek ERO staffing in Table 3–2, which is a correlation between the Hope Creek Nuclear Generating Station ERO and the NRC’s recommended “Minimum Staffing Requirements for Nuclear Power Plants Emergencies” per Supplement 1 of NUREG-0737, Table 2.

REASON AND REGULATORY BASIS FOR PROPOSED CHANGE TO PSEG NUCLEAR LLC EMERGENCY PLAN

When the Hope Creek Emergency Plan was developed, submitted and approved, it was modeled after the approved Salem Emergency Plan. With minor exceptions, due to Salem's dual unit control room staffing, the Salem and Hope Creek Emergency Plan "Organization" (ERO) mirrored each other and a review/comparison of the Salem Emergency Plan Safety Evaluation was not needed. In July 1987, under the 10 CFR 50.54 (q) process, the Salem and Hope Creek Emergency Plans were merged into a single "Artificial Island Emergency Plan" further indicating that the Plans were essentially duplicates of each other in regards to the ERO. In February 2000, the Emergency Plan was re-titled to the current title of "PSEG Nuclear LLC Emergency Plan".

The Regulatory Requirements and Guidance for making changes to the E-Plan is found in RIS 2005-02, "Clarifying The Process For Making Emergency Plan Changes" and in Regulator Guide 1.101, "Emergency Planning And Preparedness For Nuclear Power Reactors". Per RIS 2005-02, increasing ERO augmentation time to 90 minutes is considered a relaxation of the timeliness to meet an E-Plan requirement and, therefore, meets the regulatory definition of a potential decrease in effectiveness (DIE). A DIE is defined therein as, "a change in an emergency preparedness requirement that results in the degradation or loss of the capability to perform a function or perform a function in a timely manner, as contained in the emergency plan." The proposed change impacts the timeliness of augmenting the ERO and, therefore, Part 2.b of the definition of a DIE is applicable. RIS 2005-02, Part 2.b states; "A change in an emergency preparedness requirement based on timeliness means that the requirements to perform a function in a timely manner as set forth in 10 CFR 50.47 (b) and Appendix E to 10 CFR Part 50, and as defined in the licensee's emergency plan, are not met or are relaxed. This would include functions such as notification, classification, and Emergency Response Organization (ERO) augmentation." In Attachment 3 of the RIS, an "Increase in augmentation response times" is also listed as an example of a plan change that constitutes a DIE. Although the augmentation time is being relaxed, the emergency response functions identified in NRC Table B-1 and the PSEG E-Plan will continue to be performed by on-shift staff until relieved by augmented ERO responders.

RIS 2005-02 also addresses the adoption of alternate methods for complying with NRC regulations. "Licensees that want to use alternate methods for meeting the regulations may submit them to the NRC staff for review and approval prior to implementation. Changes to the emergency plan to use an alternative method may or may not constitute a decrease in effectiveness. Alternate methods for complying with the regulations are the licensee's proposed means for meeting the regulations." Regulatory Guide 1.101, Revision 4, states: "Licensees and applicants may propose means other than those specified by the provisions of the Regulatory Position of this guide for meeting applicable regulations."

Attachment 2 will present the justification for the proposed E-Plan change.

JUSTIFICATION OF PROPOSED CHANGE TO PSEG NUCLEAR LLC EMERGENCY PLAN

This attachment will show that PSEG Nuclear has a robust on-shift ERO and that all E-Plan functions can be adequately addressed by that on-shift ERO until augmentation occurs 90 minutes after emergency classification. In addition to on-shift operations department staffing, the robust on-shift ERO includes a full time and fully equipped fire department, on-shift maintenance support, Radiation Protection (RP) and Chemistry expertise at both stations.

This attachment is organized into the following sections:

- Summary/Overview of Current EP Processes/Functions
- PSEG ERO Response Time Review
- Functional Area Justification
- On-shift ERO staffing review and justification
- PSEG Nuclear Correlation To Supplement 1 Of NUREG-0737 Table 2

SUMMARY/OVERVIEW OF CURRENT EP PROCESSES/FUNCTIONS:

The PSEG Nuclear LLC Emergency Plan (E-Plan) defines four classes of emergency events. The first (least severe) is an "Unusual Event." Since shift personnel without additional support can normally address emergency response to Unusual Events, augmented EROs are typically not activated for an Unusual Event declaration. The second classification is an "Alert." The PSEG E-Plan requires ERO callout and staffing of all emergency response facilities (ERFs) at an "Alert" level event, and the activation of the Technical Support Center (TSC). Activation of the TSC is defined as – the Emergency Coordinator function has been turned-over from the Shift Manager to the TSC Emergency Duty Officer and the TSC has adequate resources to support communications, radiological assessment and engineering assessment.

Independent of classification level, the Emergency Coordinator (initially the Shift Manager) can initiate staff augmentation whenever the situation warrants. As a conservative position, PSEG Nuclear currently staffs all onsite and offsite ERFs at the "Alert" level (UE level for Security related emergencies) in accordance with the E-Plan, which ensures timely and proper staffing of the facilities should conditions degrade to a "Site Area Emergency (SAE)" or "General Emergency (GE)" classification. The highest two classifications, SAE and GE, involve likely or actual major failures of plant functions needed for protection of the public and are the most likely to need staff augmentation. All ERFs are staffed or activated at or prior to these event classification levels.

PSEG Nuclear maintains four ERO teams (A - D) with one complete team being on-duty/on-call at any given time. When the Emergency Coordinator (EC) activates the ERO callout system, all ERO members (duty responders and support responders) from all four teams are paged to ensure adequate coverage of all ERO positions at all ERFs.

JUSTIFICATION OF PROPOSED CHANGE TO PSEG NUCLEAR LLC EMERGENCY PLAN

Currently, E-Plan Administrative Procedure NC.EP-AP.ZZ-1011 (Z), "Maintenance of Emergency Response Organization" defines expectations for a person assigned to fill an ERO "duty responder" position including:

- "Reside within 60 minutes of your assigned Emergency Response Facility (ERF),"
- "Remain fit for duty, and"
- "Remain within 60 minutes of their assigned ERF during assigned duty week, or when providing coverage for another Duty Responder."

All NUREG 0654 Table B-1 positions, as well as additional ERO members who are expected to arrive at their ERFs within 60 minutes from being notified, are classified as either "on-shift" or "duty responder" positions.

Currently, E-Plan Administrative Procedure NC.EP-AP.ZZ-1011 (Z), "Maintenance of Emergency Response Organization" further defines expectations for a person assigned to fill an ERO "support responder" position includes:

- "Reside within 90 minutes of your assigned ERF."

Support responders are expected to respond to their assigned ERF within 90 minutes of being notified of an emergency to augment and assist on-shift and duty responders in performance of their emergency duties. **This proposed change does not affect "support responders" expectations.**

If a duty responder is "On-Duty," they are trained to respond to their facilities even if the call-out system informs them the position has been filled. The first ERO team member to arrive at a facility is available to assume their assigned position whether or not they have the duty. When the required positions are staffed, excess personnel may be assigned subsequent shift responsibilities or may be released to report at a later time for shift relief. This conservative policy ensures prompt ERF activation with the required personnel present to augment the shift personnel.

The proposed revisions to the E-Plan will not impact any of the above described processes, except that all "duty responder" positions would be required to **reside and remain within 70 minutes** of their assigned ERFs and **report to their assigned ERFs within 90-minutes** of emergency classification.

JUSTIFICATION OF PROPOSED CHANGE TO PSEG NUCLEAR LLC EMERGENCY PLAN

It is and will continue to be a management expectation that all duty and support ERO members physically report (respond) as quickly as possible to their assigned ERFs in response to being paged or called. The 90-minute augmentation time is expected to be the maximum time for ERO duty responder position personnel to respond to their assigned ERF. The allowance of 90 minutes will **NOT** be applied as permission to delay response to an event or reduce the number of personnel expected to respond.

PSEG ERO RESPONSE TIME REVIEW:

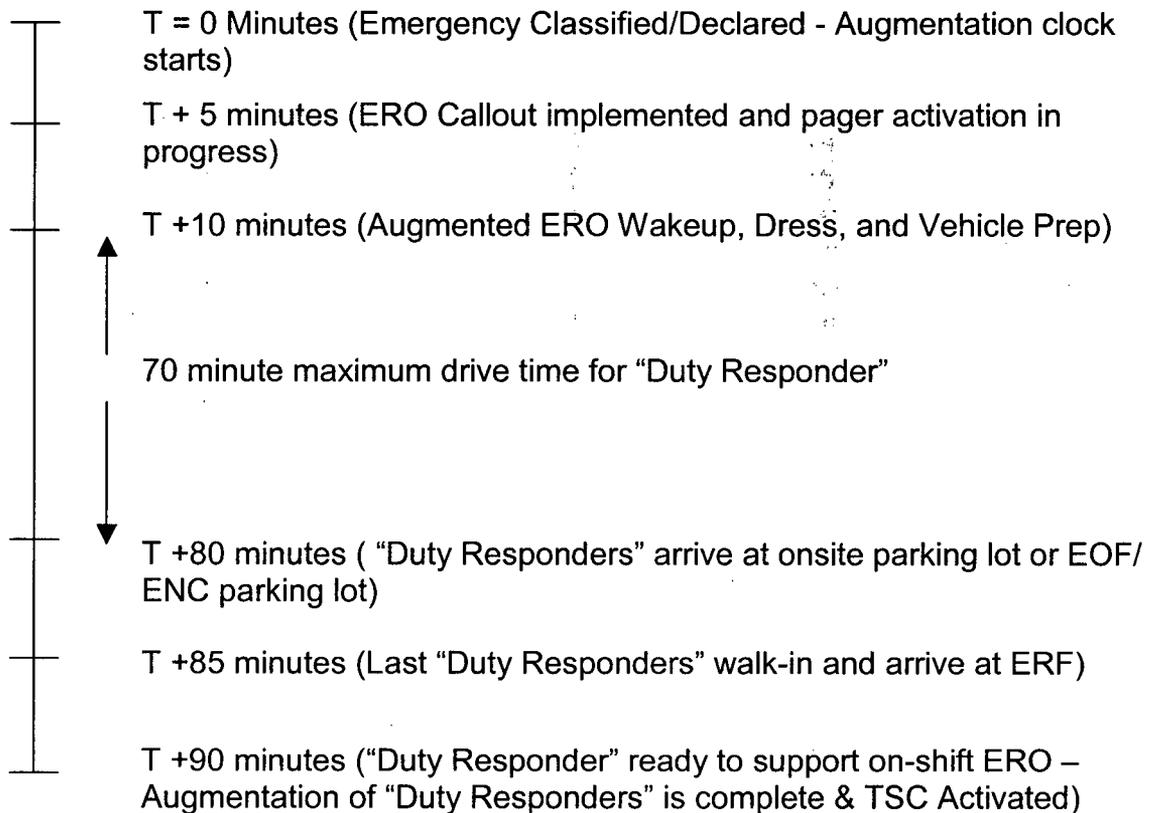
Table 1, "Typical Driving Times For Hope Creek/Salem Generating Station and EOF" on the following pages displays a sampling of local towns/communities where PSEG Nuclear employees reside and the typical response times (driving times) from those towns/communities. Based on a review of census data between 1980 and 2000, the demographics have changed over the operational life of the plants. While the population of Salem City, which is nearest to the plant, has been fairly steady since 1980, the populations in areas further from the plant, where a majority of PSEG employees live, such as Deptford, Sewell, Millville, Swedesboro, and Glassboro in NJ and the areas of Bear, Middletown, Newark, West Chester and Kennett Square in DE/PA, have continued to grow. This growth has caused traffic patterns of the Delaware Valley to change, (more traffic lights, full stop intersections, and increased road congestion) resulting in increased transit times to our ERFs from the surrounding communities. This increased transit time reduces the number of personnel available to fill ERO "duty responder" positions resulting in a pool of experienced PSEG Nuclear employees that are not able to meet the current 60 minute response requirements of ERO "duty responder" positions.

A closer look at the data compiled on Table 1 show that of the total population of non-bargaining unit personnel at PSEG Nuclear is approximately 680 as of April 2007. Based on the current E-Plan expectation that the drive time for ERO duty responders be \leq 60 minutes, 27% of the 680 staff or about 182 employees could not be assigned to ERO "Duty Responder" positions at onsite ERFs. In addition, 10.3% of the 680 staff or about 70 employees could not be assigned as ERO "Duty Responders" at the EOF, located in Salem City, NJ, about 10 miles from the site. The travel times in Table 1 are just driving times based on posted speed limits and do not include time for callout system activation, waking-up, dressing, and preparing the vehicle (scraping off frost, ice, or snow) prior to driving. Adding 10-minutes for callout system activation, waking-up, responding to the page, and dressing is considered reasonable. Another 5 minutes is allocated for walking into the plant to staff the onsite ERFs (TSC/OSC) and another 5 minutes is allocated for responders to assume their assigned ERO position (for TSC that includes TSC activation time). The requested change to allow up to 90 minutes to staff and activate ERFs will permit the ERO members who reside within 70 minutes of their assigned ERF with sufficient time given current demographics to **SAFELY** arrive at their ERFs.

JUSTIFICATION OF PROPOSED CHANGE TO PSEG NUCLEAR LLC EMERGENCY PLAN

Implementing the proposed change such that a “duty responder” position can respond within 90 minutes to their assigned ERF will increase the pool of Salem and Hope Creek personnel available to fill ERO “Duty Positions.” The data shown in Table 1 indicates that increasing the drive time requirements for ERO “Duty Responders” from the current 60 minutes to 70 minutes will increase the percent of employees available to fill ERO “Duty Responder” positions at onsite ERFs from 73.3% to 90% or an additional 112 employees and will increase the percent of employees available to fill ERO “Duty Responder” positions at the Emergency Operations Facility (EOF) or Emergency News Center (ENC) from 89.7% to 96.3% or an additional 45 employees. This increased pool results in 96.3% of PSEG Nuclear employees that will be eligible to fill an ERO “Duty Responder” position at the Salem and Hope Creek Generating Stations. The below timeline is presented to illustrate the proposed ERO Augmentation components.

Timeline Depiction of ERO Augmentation



JUSTIFICATION OF PROPOSED CHANGE TO PSEG NUCLEAR LLC EMERGENCY PLAN

TABLE 1 – Typical Driving Times For Hope Creek/Salem Generating Station and EOF/ENC

Town / City	State	Miles to Plant	Travel Time* (min)	Miles to EOF	Travel Time* (min)	Percentage Of Employees
Aberdeen	MD	64.60	81	52.62	65	0.10%
Alloway	NJ	14.44	25	7.09	14	1.30%
Ardmore	PA	51.82	73	40.21	57	0.10%
Atco	NJ	49.38	81	39.97	65	0.10%
Audubon	NJ	48.80	64	37.19	49	0.10%
Avondale	PA	40.55	63	28.57	47	0.60%
Bear	DE	35.18	53	23.20	37	2.50%
Bellmawr	NJ	47.21	60	36.83	45	0.10%
Blackwood	NJ	43.37	68	33.00	53	0.10%
Boothwyn	PA	37.87	54	25.89	38	0.60%
Bridgeton	NJ	21.17	36	16.83	28	5.10%
Broomall	PA	48.91	67	37.30	51	0.10%
Burlington	NJ	67.93	80	59.31	70	0.10%
Chadds Ford	PA	40.39	63	28.41	47	0.60%
Chesapeake City	MD	50.89	73	38.92	57	0.10%
Cinaminson	NJ	61.67	77	51.30	62	0.10%
Clementon	NJ	51.93	69	41.56	55	0.10%
Conowingo	MD	64.59	84	52.61	68	0.30%
Darby	PA	45.54	66	33.93	51	0.10%
Deerfield	NJ	19.63	35	15.30	27	0.30%
Delran	NJ	66.35	82	55.98	67	0.10%
Deptford	NJ	41.50	63	31.13	49	0.30%
Downingtown	PA	58.26	82	46.28	66	0.30%
Drexel Hill	PA	47.66	67	36.09	51	0.10%
Elkton	MD	42.52	59	30.54	43	1.20%
Elmer	NJ	25.12	45	23.10	36	3.70%
Erial	NJ	42.38	70	32.97	54	0.30%
Franklinville	NJ	34.56	58	29	45	0.30%
Gibbstown	NJ	37.45	52	25.85	36	0.10%
Glassboro	NJ	32.1	52	24.12	38	0.90%
Glen Mills	PA	42.59	62	30.61	46	0.30%
Greenwich	NJ	15.05	27	12.89	27	0.10%
Haddon Heights	NJ	48.06	62	37.69	47	0.30%
Hainesport	NJ	63.65	77	53.28	62	0.10%

JUSTIFICATION OF PROPOSED CHANGE TO PSEG NUCLEAR LLC EMERGENCY PLAN

TABLE 1 – Typical Driving Times For Hope Creek/Salem Generating Station and EOF/ENC

Town / City	State	Miles to Plant	Travel Time* (min)	Miles to EOF	Travel Time* (min)	Percentage Of Employees
Hammonton	NJ	53.51	83	45.87	69	0.10%
Hancocks Bridge	NJ	7	9	5.44	11	0.60%
Havertown	PA	50.07	69	38.47	53	0.10%
Havre De Grace	MD	60.46	77	48.48	61	0.10%
Hockessin	DE	35.69	56	23.71	40	1.60%
Kennett Sq.	PA	44.43	70	32.45	54	0.90%
Landenberg	PA	41.84	68	29.86	51	1.30%
Laurel Springs	NJ	51.93	69	41.56	55	0.10%
University	PA	48.23	75	36.25	59	0.70%
Logan Township	NJ	27.3	45	16.93	31	0.30%
Magnolia	NJ	49.13	64	38.76	49	0.10%
Mantua	NJ	33.67	54	23.3	40	0.40%
Marlton	NJ	59.82	74	49.45	59	0.40%
Medford	NJ	64.92	82	54.54	67	0.30%
Media	PA	44.78	63	33.17	48	0.30%
Mickleton	NJ	36.65	52	26.28	37	0.70%
Middletown	DE	50.14	65	38.16	48	2.90%
Millville	NJ	34.68	55	30.34	47	1.50%
Monroeville	NJ	29.3	47	21.32	33	0.40%
Moorestown	NJ	57.89	74	47.52	60	0.20%
Mount Laurel	NJ	59.89	73	49.52	58	0.60%
Mount Royal	NJ	39.77	53	28.17	38	0.15%
Mullica Hill	NJ	29.57	47	19.2	32	3.81%
New Castle	DE	28.7	43	16.72	27	0.73%
Newark	DE	35.84	55	23.86	39	6.31%
Newfield	NJ	34.54	55	28.98	43	0.29%
Newtown Square	PA	50.65	70	39.05	54	0.14%
North East	MD	51.11	69	39.13	53	0.14%
Palmyra	NJ	61.34	78	50.96	63	0.10%
Pedricktown	NJ	26.38	39	17.77	23	0.29%
Penns Grove	NJ	22.95	37	11.48	22	1.90%
Pennsville	NJ	17.52	28	6.5	12	11.16%
Perryville	MD	55.43	72	43.46	56	0.14%
Pitman	NJ	35.28	56	24.91	41	0.14%
Quinton	NJ	11.6	19	4.24	8	0.73%

JUSTIFICATION OF PROPOSED CHANGE TO PSEG NUCLEAR LLC EMERGENCY PLAN

TABLE 1 – Typical Driving Times For Hope Creek/Salem Generating Station and EOF/ENC

Town / City	State	Miles to Plant	Travel Time* (min)	Miles to EOF	Travel Time* (min)	Percentage Of Employees
Richwood	NJ	32.37	51	22	36	0.14%
Salem	NJ	12.01	19	5	10	7.60%
Sewell	NJ	37.46	61	27.09	46	3.23%
Shiloh	NJ	17.48	29	13.14	21	0.44%
Sicklerville	NJ	42.38	70	32.97	54	0.58%
Smyrna	DE	60.54	72	48.57	56	0.10%
Swarthmore	PA	42.15	60	30.55	45	0.10%
Swedesboro	NJ	27.3	45	16.93	31	1.46%
Thorofare	NJ	41.49	55	29.89	39	0.14%
Townsend	DE	62.87	76	50.89	60	0.14%
Turnersville	NJ	43.37	68	33	53	0.73%
Vineland	NJ	32.82	57	28.48	48	1.32%
Voorhees	NJ	55.94	73	44.88	58	0.73%
Wallingford	PA	41.51	60	29.91	44	0.29%
Wenonah	NJ	35.66	60	25.29	46	0.44%
West Berlin	NJ	47.99	77	38.58	62	0.14%
West Chester	PA	44.6	63	32.62	47	0.44%
West Grove	PA	45.61	72	33.63	56	0.14%
Williamstown	NJ	42.84	68	35.19	55	1.02%
Willingboro	NJ	66.29	79	55.92	65	0.14%
Wilmington	DE	29.69	49	17.71	33	5.43%
Woodbury	NJ	41.5	63	31.13	49	0.44%
Woodbury Heights	NJ	36.5	61	26.13	46	0.29%
Woodstown	NJ	20.82	33	10.45	18	6.60%
Woolwich	NJ	27.3	45	16.93	31	1.76%
Personnel Outside 70 Mins. (25 People)						3.67%

Note:

Distances and times to the site were determined using MapQuest to Hancocks Bridge and then adding actual mileage (6.5 miles) and transit time (8 minutes) to travel from Hancocks Bridge to the site parking area.

* = Travel time does not include time for callout system activation, wake-up, responding to the pager, dressing and walk-in (15 minutes).

JUSTIFICATION OF PROPOSED CHANGE TO PSEG NUCLEAR LLC EMERGENCY PLAN

FUNCTIONAL AREA JUSTIFICATION:

Further justification for the proposed revisions to E-Plan, Sections 3 and 9, broken down by functional area, is provided below. **Note that no reduction of ERO positions or personnel assigned to the ERO is proposed.**

OVERVIEW

The E-Plan designates on-shift personnel to recognize off-normal conditions, classify events, make notifications and initially respond to an emergency. The on-shift ERO will be self-reliant for a sufficient period of time to allow for the notification of duty responder and support responder ERO personnel and the assembly and integration of those personnel into the emergency response. The PSEG E-Plan provides for the augmentation of the on-shift emergency responders following the declaration of any Alert or higher classification level. This augmentation may occur following classification of an Unusual Event for certain types of events, such as security-based emergencies.

The ERO response time extension request applies to “duty responder” positions that perform key functions necessary for the protection of the public and the plant. These functions include emergency assessment and classification, notification of onsite personnel and offsite agencies, dose assessment, development of protective action recommendations, coordination of efforts to mitigate the emergency and interface with the media. The specific ERO “Duty Responder” positions for which this change request applies are listed in the following table.

PSEG Nuclear - ERO Duty Responder Positions

Emergency Operations Facility

- Emergency Response Manager
- Site Support Manager
- Radiological Support Manager
- Radiological Assessment - Duty
- Offsite Team Monitor (2)
- Offsite Team Driver (2)
- Public Information Liaison
- EOF Communicator (2)
- Administrative Support Manager

Technical Support Center

- Emergency Duty Officer
- Technical Support Supervisor
- Radiological Assessment Coordinator
- Radiation Protection Supervisor
- Chemistry Supervisor
- Electrical Engineer
- Mechanical Engineer
- Controls Engineer
- Core-Thermal Engineer
- TSC Communicator (2)

Operations Support Center

- OSC Coordinator
- Radiation Protection Supervisor

Emergency News Center

- ENC Manager
- Company Spokesperson
- Lead Technical Advisor
- Duty Staff Writer

JUSTIFICATION OF PROPOSED CHANGE TO PSEG NUCLEAR LLC EMERGENCY PLAN

The above positions have been identified as ERO "duty responder" positions in E-Plan Administrative Procedure, NC.EP-AP.ZZ-1011(Q), "Maintenance of Emergency Response Organization." The ERO "duty responder" positions address many of the augmented staffing positions shown in NUREG-0654, Table B-1 as 60-minute responders, as well as additional ERO positions needed to perform key functions. An "On-Shift" staffing review (page 14) along with a Table B-1 positions/functions comparison of SER approved Revision 10 to Hope Creek E-Plan dated January 1986 vs. Proposed E-Plan Revision (page 19) follows this functional area justification section.

EMERGENCY DIRECTION AND CONTROL:

In accordance with the E-Plan, overall command and control of the PSEG emergency response resides with the ERO members in the position of Emergency Coordinator (EC). The function of the EC passes from the control room Shift Manager (SM) to the Emergency Duty Officer (EDO) in the TSC and then to the Emergency Response Manager (ERM) in the EOF as the emergency response organization is augmented. See E-Plan Section 3, Emergency Organization, subsection 4.0 – 4.4.

The SM initially has the EC function and provides emergency direction and control. The SM has the authority and responsibility to immediately and unilaterally initiate any emergency action. The Control Room Supervisor (CRS) executes operational control of the unit while the SM is fulfilling the EC function.

Following the turnover of the EC function from the SM to the EDO, the EDO has the authority and responsibility to immediately and unilaterally initiate any emergency actions. The SM has overall command and control of the unit and is accountable for all decisions that require direction by a Senior Reactor Operator (SRO) licensed individual. The CRS assists the SM.

Following the turnover of the EC function from the EDO to the ERM, the ERM has the authority and responsibility to immediately and unilaterally initiate emergency actions. The EDO in the TSC retains the authority and responsibility for immediately and unilaterally initiating measures to protect the plant and onsite personnel.

Experience in Licensed Operator Re-qualification training using plant simulators indicates that the most intense time for SMs (EC) is in the first 15 – 45 minutes after a declared emergency when notification forms for Offsite Response Organizations as well as notifications to the NRC are completed and transmitted.

The proposed revision to ERO augmentation timeliness goals will not impact overall Emergency Direction and Control.

JUSTIFICATION OF PROPOSED CHANGE TO PSEG NUCLEAR LLC EMERGENCY PLAN**OPERATIONS:**

In accordance with the E-Plan, on-shift staffing meets or exceeds the requirements of NUREG-0654 Table B-1 to assure prompt response to emergency events without requiring immediate augmentation, including adequate emergency response members on-shift to staff and activate the Operations Support Center (OSC). This is a planned staffing decision to ensure personnel are on-shift to facilitate management and mitigation of postulated emergency events. On-shift Control Room and OSC staffing provides assurance that key functional tasks such as plant operations, equipment troubleshooting and repair, classifications, offsite notifications, Protective Action Recommendations (PARs), dose assessment, fire fighting and search and rescue missions can be performed without additional augmentation of personnel.

E-Plan Implementing Procedures (EPEPs) and Event Classification Guide (ECG) implementation is included in simulator training as part of the licensed operator training program. The simulator training typically begins with normal operating conditions and escalates to an accident condition that enables the crew to implement the ECG and EPEPs. Prior to augmentation, the operations staff performs the functions they would normally be required to perform in an emergency condition prior to the activation of ERFs. Conduct of these training sessions and drills demonstrate the ability to adequately perform such key functional tasks as event classification, offsite communications/notifications, accident mitigation, damage assessment and response prioritization and tracking. Operations based PARs can be made quickly with an easy-to-use PAR Flowchart. On-shift radiation protection and chemistry technicians are responsible for working with the operations staff to provide offsite dose assessment projections, radiological PARs, and chemistry analysis.

The proposed revision to ERO augmentation timeliness goals will not impact overall plant operations. A more detailed review of on-shift staffing is presented later (page 14) in this attachment.

COMMUNICATIONS:

The initial emergency communicators for any event consist of two operations staff members from the on-shift crew. This ensures immediate availability and the technical background to comprehend and communicate plant equipment and process issues. Upon TSC activation, most communication responsibilities are turned over to the TSC communicators while the Control Room communicators continue to provide data to the TSC and monitor Control Room communications equipment.

The proposed revision to ERO augmentation timeliness goals will not impede the capability of on-shift personnel to perform their communications duties.

JUSTIFICATION OF PROPOSED CHANGE TO PSEG NUCLEAR LLC EMERGENCY PLAN**RADIATION PROTECTION AND CHEMISTRY:**

On-shift staffing levels consist of one Shift Radiation Protection Technician (SRPT) one Onsite Radiation Protection Technicians (ORPT) and one Chemistry Technician at each station (Salem and Hope Creek). Technicians from the unaffected station are available as requested to support the affected station's emergency response.

The SRPTs are trained to perform onsite/offsite dose assessment/projections, radiological PARs, onsite and inplant monitoring and are present 24 hours a day, 7 days a week. Dose assessment is performed using a stand-alone Windows-based computer program. The TSC and EOF dose assessors' use the same dose assessment software program as the SRPT and all can obtain a dose projection in approximately 5-minutes. Radiological PARs can then be made rapidly by using the dose assessment projection report and a radiological PAR flowchart. The recent upgrade to a Windows-based dose assessment program has improved the ability of onshift radiation protection to be able to perform dose assessment/projection functions, while being able to respond to other emergency tasks.

Offsite survey teams are available when the EOF is staffed. If needed, the onsite monitoring personnel could be dispatched offsite for field monitoring until EOF field monitoring teams are in place.

Key Radiation Protection functions of dose assessment, in-plant repair team coverage, onsite/in-plant monitoring and sampling/analysis is covered by the six RP/Chemistry Technicians on-shift (three at each station). Radiation support functions such as access control, personnel monitoring, and dosimetry are covered by plant process enhancements (newer technology/tools) using available equipment such as portal monitors, self-alarming dosimeters, and an automated access control point. All onsite ERO members expected to be dispatched into the plant for evaluation, operations or repair activities are Radiation Worker and Respirator qualified and understand how to use available tools.

The availability of an on-shift Fire Department (one Supervisor and four Fire Protection Operators) allow Radiation Protection and Chemistry personnel to perform their primary ERO functions without the added tasks of the Fire Brigade or First Aid Team.

The proposed revision to ERO augmentation timeliness goals will not impact the ability of the plant staff to provide timely and accurate dose assessment/projections, onsite RP/Chemistry assessment, and on-site/in-plant repair team coverage until augmentation support arrives.

JUSTIFICATION OF PROPOSED CHANGE TO PSEG NUCLEAR LLC EMERGENCY PLAN**TECHNICAL SUPPORT:**

The Shift Technical Advisor (STA), is the accident assessment advisor to the Control Room staff during the initial phases of an emergency. Bases documents for EALs provide core damage assessment information based on high range containment monitor readings and Reactor Coolant System (RCS) sample results. Comprehensive technical support is not needed during the initial stages of an emergency. The design, training and use of the Emergency Operating Procedures (EOPs) by the Control Room staff is the primary mitigation tool in the early stages of an emergency. Severe Accident Management Guideline (SAMG) evaluation and direction is performed in the TSC when needed in accordance with the Station Emergency Operating Procedures (EOPs). Prior to TSC activation, Control Room SAMG procedures at Salem and EOPs at Hope Creek provide adequate operational direction.

The proposed revision to ERO augmentation timeliness goals will not impede the capability of on-shift personnel to adequately manage the technical support function in the early stages of an emergency.

MAINTENANCE:

On-shift staffing has the necessary Operations Support Center (OSC) personnel to activate the OSC and to perform immediate corrective actions. The on-shift positions that staff and activate the OSC are:

- OSC Coordinator (Shift Maintenance Supervisor - one at each station)
- Fire Protection Supervisor (Note 1)
- Fire Brigade Members (4 Fire Fighters/EMTs) (Note 1)
- Shift Electrician (Note 2) - one at each station
- Shift I & C Technician (Note 2) - one at each station
- Radwaste Operator - one at each station
- Equipment Operators – as per Technical Specifications

Note 1 – Salem/Hope Creek maintains an onsite fire department for 24/7/365 response. Fire Department personnel also perform some maintenance activities on a routine bases. The on-shift availability and capabilities of the Onsite Fire Department increases the availability of operations and maintenance personnel to perform their expected OSC duties.

JUSTIFICATION OF PROPOSED CHANGE TO PSEG NUCLEAR LLC EMERGENCY PLAN

Note 2 – Although not committed to in the E-Plan, Salem and Hope Creek typically maintain additional maintenance personnel on-shift. This around-the-clock maintenance shift is at the disposal of the OSC Coordinator as needed to augment the OSC in an emergency. A typical 12-hour maintenance shift at each stations consist of:

- 2-3 Mechanical Technicians
- 1-2 Electrical/Control Technicians – above and beyond the Shift Electrical and Controls Technicians that are committed to in the E-Plan.
- 1-2 Nuclear Workers

The initial phase of an accident scenario is not expected to involve a significant need for additional maintenance personnel. The proposed revision to ERO augmentation timeliness goals will not impact overall maintenance activities.

CONCLUSION: FUNCTIONAL AREA JUSTIFICATION

Increasing the augmentation time goal for ERO staffing and ERF activation will not result in a reduction in the capability of the ERO to respond to an emergency. This change will enhance the E-Plan by creating ERF activation time goals consistent with known local population and traffic changes and allow for optimization of ERO resources, response, and execution.

Maintaining a robust on-shift ERO along with technology advances available for those on-shift responders, and changing the augmentation timeliness response time to 90 minutes is a practical and prudent alternate method to ensure effective and timely emergency response. Implementing the proposed change such that personnel in “Duty Responder” positions can respond within 90 minutes to their assigned ERF will increase the number of Salem and Hope Creek personnel available to fill ERO “Duty Positions” enhancing implementation of the emergency response, as additional highly qualified and experienced ERO candidates will now be eligible to fill critical ERO positions.

JUSTIFICATION OF PROPOSED CHANGE TO PSEG NUCLEAR LLC EMERGENCY PLAN

ON-SHIFT ERO STAFFING REVIEW AND JUSTIFICATION:

The following “On-Shift” ERO Staffing Review will look at “On-Shift” capabilities per facility and provide a justification why the proposed “Alternate Method” to increase the augmentation time criteria, will not result in a reduction in capability of the ERO to respond to an emergency.

PSEG Nuclear – On-Shift ERO Positions

Control Room – Salem (10)	Operations Support Center – Salem (8)	RCA Control Point – Salem (3)
<ul style="list-style-type: none"> • Shift Manager (SM) • Control Room Supervisor (CRS) - 2 • Shift Technical Advisor (STA) • Nuclear Control Operators (NCO) - 4 • Control Room Communicators – 2 	<ul style="list-style-type: none"> • Shift Maintenance Supervisor • Nuclear Equipment Operator – 4 • Radwaste Operator • Shift I&C Technician • Shift Electrician 	<ul style="list-style-type: none"> • Shift Radiation Protection Technician (SRPT) • Onsite Radiation Protection Technician (ORPT) • Chemistry Technician
Control Room – Hope Creek (7)	Operations Support Center – Hope Creek (6)	RCA Control Point – Hope Creek (3)
<ul style="list-style-type: none"> • Shift Manager (SM) • Control Room Supervisor (CRS) • Shift Technical Advisor (STA) • Nuclear Control Operators (NCO) - 2 • Control Room Communicators – 2 	<ul style="list-style-type: none"> • Shift Maintenance Supervisor • Nuclear Equipment Operator – 2+ • Radwaste Operator • Shift I&C Technician • Shift Electrician 	<ul style="list-style-type: none"> • Shift Radiation Protection Technician (SRPT) • Onsite Radiation Protection Technician (ORPT) • Chemistry Technician
	Affected Station OSC (Note 1) (5)	Main Guard House:
	<ul style="list-style-type: none"> • Fire Department Supervisor • Fire Department Operators – 4 	<ul style="list-style-type: none"> • Shift Security Team Leader • Security Supervisors -2 • Security Force per Security Plan
	<p>Note 1 – Fire Dept Supervisor and Operators report to affected Station OSC.</p>	

Augmentation time will change ERO key member selection criteria from “resides within 60 minutes of your assigned ERF” to “resides within 70 minutes of your assigned ERF.” This ERO selection criteria change will result in changes to the staffing and/or facility activation criteria from “within 60 minutes of initial notification” to “within 90 minutes of emergency classification.”

JUSTIFICATION OF PROPOSED CHANGE TO PSEG NUCLEAR LLC EMERGENCY PLAN**FACILITY - Control Room**

- Shift Manager (SM)
- Control Room Supervisor (CRS)
- Shift Technical Advisor (STA)
- Nuclear Control Operators (NCO)
- Control Room Communicators

FUNCTIONS - Control Room

- Overall Emergency Command and Control
- Plant Operations
- Emergency Communications

JUSTIFICATION - Control Room

Overall emergency command and control is the responsibility of the Shift Manager (SM). The SM has the tools, training and personnel to maintain emergency command and control for 90 minutes. The overall focus of the SM is emergency classification, notifications, PARs, and oversight of plant operations until TSC activation. The Shift Technical Advisor (STA) is assigned the responsibility to perform independent verification of all emergency classifications. The Shift Radiation Protection Technician (SRPT) provides radiological support in the form of real time dose assessment as well as in-plant assessment of radiological conditions. The Operations Support Center (OSC) is activated by/with on-shift personnel (Shift Maintenance Supervisor) which relieves the SM from direct OSC Supervision responsibilities.

Plant Operations is controlled by the Control Room Supervisor (CRS) with SM oversight. The CRS, STA, and NCOs are implementing Abnormal or Emergency Operating Procedures (EOPs) and have little required interaction with augmented ERO responders. One area that TSC assistance is needed by the plant operators is when EOPs direct entry into the Severe Accident Guidelines (SAG). At Salem, two Westinghouse Pressurized Water Reactors (PWRs), entry into SAG is by the Control Room operators using Westinghouse Owners Group (WOG) based guidelines. The WOG guidelines assume no support from ERO augmentation personnel for at least 90 minutes so the proposed changes are bounded by current Salem SAGs. At Hope Creek, a single unit GE Boiling Water Reactor (BWR), the owner's group basis did not assume a time for augmented ERO support. At Hope Creek, SAG evaluation and strategies are performed in the TSC. An assessment was performed to review the impact on plant operations if TSC activation was changed to 90 minutes after emergency classification. The result of the assessment (see Attachment 6) indicates minimal impact based on the time to substantial core damage and existing EOP actions that the operators would perform.

JUSTIFICATION OF PROPOSED CHANGE TO PSEG NUCLEAR LLC EMERGENCY PLAN

Two dedicated Control Room Communicators perform emergency communications. The Communicators have prescribed procedures that are followed until TSC turnover is complete. Once relieved by the TSC Communicators, the Control Room Communicators continue to assist with data gathering and transmission to ERFs as needed. Based on the prescribe expectations and procedures for the Control Room Communicators, delaying ERO augmentation will not have an adverse affect on Control Room communications.

Based upon the "On-Shift" support available to the SM, the fact that no new tasks or activities are being assigned to the Control Room staff, and the Control Room staff will continue to perform tasks for which they have historically been trained and have demonstrated in drills, it is concluded that the proposed changes will not result in a reduction in the capability of the Control Room ERO to respond to an emergency.

FACILITY – Operations Support Center (OSC)

- Shift Maintenance Supervisor
- Nuclear Equipment Operators
- Radwaste Operator
- Shift I&C Technician
- Shift Electrician
- Fire Department Supervisor
- Fire Department Operators

FUNCTIONS – Operations Support Center (OSC)

- Troubleshoot and Repair defective equipment
- In-Plant operations
- Fire Fighting
- First Aid
- Search & Rescue

JUSTIFICATION – Operations Support Center (OSC)

Troubleshooting and repairs of defective equipment is performed by on-shift Maintenance personnel. In addition to the on-shift I&C Technician and on-shift Electrical Technician at the affected station and the same positions at the unaffected station, additional maintenance personnel are typically available at both stations to support OSC activities. Both stations have an on-shift Maintenance Supervisor who assumes OSC command and control until relieved by the augmented OSC Coordinator. Delaying full OSC augmentation of maintenance personnel would have negligible affect on overall OSC operations since there is a significant maintenance staff available for OSC support.

JUSTIFICATION OF PROPOSED CHANGE TO PSEG NUCLEAR LLC EMERGENCY PLAN

Delaying full OSC augmentation will not adversely affect In-Plant operations as plant operator positions are not augmented by the ERO in an emergency unless deemed necessary by the SM.

Fire Fighting, First Aid and Search and Rescue activities are performed by the PSEG on-shift Fire Department that reports to the OSC of the affected station. No additional Fire Department personnel are called in as part of the ERO response, however, Fire Department recall procedures are in place and would be implemented by the Fire Department Supervisor if more support were needed.

OSC command and control and radiological assessment are areas where ERO augmentation enhances OSC operations. An OSC Coordinator and RP Supervisor are duty responders and the proposed change would result in a delay of this augmented support to the OSC. A review of their functions indicates that the on-shift OSC staff can continue to perform those functions until the duty responders arrive without significant impact on the OSC. The Shift Manager would continue to prioritize OSC work requests based on staffing and support available. No OSC functions were identified that could not be performed by the on-shift OSC staff during the first 90 minutes of an emergency.

Based upon the "On-Shift" support available to staff and activate the OSC, the fact that no new tasks or activities are being assigned to the OSC Staff, and the OSC staff will continue to perform tasks for which they have historically been trained and have demonstrated in drills, it is concluded that the proposed changes will not result in a reduction in the capability of the OSC ERO to respond to an emergency.

FACILITY – Control Point

- Shift Radiation Protection Technician (SRPT)
- Onsite Radiation Protection Technician (ORPT)
- Chemistry Technician

FUNCTIONS – Control Point

- Perform Dose Assessment
- In-plant RP Support and Onsite Monitoring
- Chemistry Sampling

JUSTIFICATION OF PROPOSED CHANGE TO PSEG NUCLEAR LLC EMERGENCY PLAN**JUSTIFICATION – Control Point**

The dose assessment function is performed by the Shift Radiation Protection Technician (SRPT) at the affected station and turned over to the TSC upon TSC activation. After TSC activation, the SRPT continues to provide radiological data support to the TSC and to the Control Room crew. The PSEG dose assessment program, MIDAS, now a Windows-based program, has improved user interface giving the user more time for other tasks. A dose projection takes approximately 5 minutes to obtain. In training drills, TSC activation has occurred with the SRPT maintaining dose assessment duties and no negative impact was noted.

Key RP in-plant support activities such as repair team coverage, onsite/in-plant monitoring, and sampling/analysis is covered by the six RP/Chemistry Technicians on-shift (three at each stations). RP Support functions such as access control, personnel monitoring, and dosimetry are simplified by plant process enhancements (newer technology/tools) using available equipment such as portal monitors, self-alarming dosimeters, and an automated access control point. All onsite ERO members expected to be dispatched into the plant for evaluation, operations or repair activities are Radiation Worker and Respirator qualified and know how to use available tools. If needed, the Onsite Monitoring personnel could be dispatched offsite for field monitoring until EOF Field Monitoring Teams are in place.

The availability of an on-shift Fire Department (one Supervisor and four Fire Protection Operators) allows RP and Chemistry personnel to perform their primary ERO functions without the added tasks of Fire Brigade or First Aid Team duty.

Based upon the "On-Shift" support available to provided radiological and chemistry support, the fact that no new tasks or activities are being assigned to the RP/Chemistry personnel, and RP/Chemistry personnel will continue to perform tasks for which they have historically been trained and have demonstrated in drills, it is concluded that the proposed changes will not result in a reduction in the capability of the Control Point ERO to respond to an emergency.

The following section compares the SER approved ERO Minimum Staffing per Table B-1 to the proposed staffing per Table B-1.

PSEG NUCLEAR CORRELATION TO SUPPLEMENT 1 OF NUREG-0737 TABLE 2 (Note 2)
 (SER Approved Revision 10 to Hope Creek Emergency Plan dated January 1986 vs. Proposed E-Plan Revision)

Major Functional Area	Major Tasks	Position Title or Expertise	On* Shift (Latest SER Revision)	Capability for Additions		On* Shift (proposed revision) (Note 1)	Capabilities for Additions 90 min (proposed revision)	Changes/Notes
				30min	60min			
				(Latest SER Revision)				
Plant Operations and Assessment of Operational Aspects		Shift Manager (SM) (SRO)	1 A5			1 A4		No Change - On-Shift position
		Control Room Supervisor (CRS) (SRO)	1 B2			1 B2		No Change - On-Shift position
		Reactor/Plant Operator (RO/PO)	2 B3			2 B3		No Change - On-Shift position
		Nuclear Equipment Operator (NEO)	2 B6			2 B5 (Note 8)		No Change - On-Shift position
Emergency Direction and Control (EC)		Shift Manager (SM)(SRO)	1**A5			1**A4		No Change - On-Shift position
Notification/Communication	Notify Licensee, State, Local and Federal personnel and maintain communications	Control Room Communicators	1 B4	1 B5	2 F9	2 B4		Minor Change, added 2 Communicators in the EOF which are "Duty Responder" positions
		TSC/EOF Communicators					2 F8 and 2 I5	
Sub - Totals			7	1	2	8	4	

Chart Key

of Personnel filling this ERO Position

2 B5 (Note 8)

B5 – is an ERO Position Code – titles and duties are found in E-Plan Section 3. For Example, B5 is an Equipment Operator. In this table a change to a position code is not treated as a change unless it affected the number of personnel for that code.

Notes or Asterisks: (Note 8) or **** Provides a reference to a specific note found on a separate note page. See page 23 or 24 for notes.

PSEG NUCLEAR CORRELATION TO SUPPLEMENT 1 OF NUREG-0737 TABLE 2 (Note 2)
 (SER Approved Revision 10 to Hope Creek Emergency Plan dated January 1986 vs. Proposed E-Plan Revision)

Major Functional Area	Major Tasks	Position Title or Expertise	On* Shift (Latest SER Revision)	Capability for Additions		On* (Note 1) Shift (proposed revision)	Capabilities for Additions 90 min (proposed revision)	Changes/Notes
				30min	60min			
Radiological Accident Assessment and Support of Operational Accident Assessment	Near-site EOF-Manager	Emergency Response Manager-ERM***			1 A1		1 A1 (ERM)	No Change, 90 min duty position
	Offsite Dose Assessment	Shift RP Tech (SRPT)/RP Supervisor-Offsite		1 E1 ****		1 E4 (Note 3)		No Change, On-Shift position
	Offsite Surveys	Technician (RPT)		2 D6	2 D6	(Note 9)	4 D4 (Offsite Monitors/Drivers)	Clarification change: Four Offsite Monitors are 90 min duty positions (See explanation #1 below)
	Onsite (out-of-plant)	Technician (RPT)		1 E12	1 E12	1 E3 & 1 E6 (Note 5)	1 E2A (RPS Offsite)	RPS Offsite is a 90 min duty position On-Shift RPT from unaffected unit. Added unaffected unit Chemistry Tech (See explanation #2 below)
	In-plant Surveys	Technician (RPT)	1E10	1 E3	1 E11	2 E3 (Note 5)	1 E1 (Unaffected RAC)	No Change, Two On-Shift RPTs and Unaffected units RAC
	Chem/Radio-chemistry	Technician (CT)	1 E17		1 E10	1 E6	1 E5 (Chem Supv)	No Change - One On-Shift and One 90 Min Duty Resp
Sub - Totals			2	5	6	6	8	

Unaffected unit RPT and Chem Tech

1 RPT from Unaffected unit

PSEG NUCLEAR CORRELATION TO SUPPLEMENT 1 OF NUREG-0737 TABLE 2 (Note 2)
 (SER Approved Revision 10 to Hope Creek Emergency Plan dated January 1986 vs. Proposed E-Plan Revision)

Major Functional Area	Major Tasks	Position Title Or Expertise	On* Shift (Latest SER revision)	Capability for Additions		On* (Note 1) Shift (proposed revision)	Capabilities for Additions 90 min (proposed revision)	Changes/Notes
				30min	60min			
				(Latest SER Revision)				
Plant System Engineering, Repair and Corrective Actions	Technical Support	Shift Technical Advisor (STA)	1 B1	1 F6 *****		1 B1 (Note 4 & 6)	1 F6A	No Change - STA is on-shift position
		Core/Thermal Hydraulics						
	Repair and Corrective Actions	Electrical			1 F3		1 F3	No Change - Elect Engineer is a 90 min duty position
		Mechanical			1 F4		1 F4	No Change - Mech Engineer is a 90 min duty position
		Mechanical Maintenance/ Rad Waste Operation	1**C5		1 C4 1 C5	1 C4C		Change - Shift Maint Supv is an on-shift position (See explanation #3 below)
		Electrical Maintenance/ Instrument and Control	1**C3	1 C3 1 C2	1 C4	1 C3** 1 C2 1 C3 1C2 (Note 5) 1C3 (Note 5)		Change - Radwaste Operator is an on-shift position Change - Clarified on-shift positions. Added that Shift Elect and Controls support from other unit (See explanation #4 below)
Subtotal			1	3	5	7	3	

Both from unaffected unit if needed

PSEG NUCLEAR CORRELATION TO SUPPLEMENT 1 OF NUREG-0737 TABLE 2 (Note 2)
(SER Approved Revision 10 to Hope Creek Emergency Plan dated January 1986 vs. Proposed E-Plan Revision)

Current Notes from Table 3.2 of Section 3 of the E-Plan, Rev. 08, SER Approved Version

Notes:

- * For each unaffected nuclear unit in operation, maintain at least one Control Room Supervisor, one Reactor/Plant Operator and one Equipment Operator.
- ** May be provided by Shift personnel assigned other functions.
- *** Overall directions of facility response to be assumed by near-site EOF Emergency Response Manager when all centers are fully manned (activated). Direction of minute-to-minute facility operations remains with the senior manager in the TSC or CR.
- **** Will be performed by the Shift Radiation Protection Technician (E4) until relieved by the Radiation Assessment Coordinator.
- ***** Performed by Nuclear Shift Technical Advisor (NSTA) until relieved by Core Thermal Engineer

PSEG NUCLEAR CORRELATION TO SUPPLEMENT 1 OF NUREG-0737 TABLE 2 (Note 2)
 (SER Approved Revision 10 to Hope Creek Emergency Plan dated January 1986 vs. Proposed E-Plan Revision)

Proposed Notes for Table 3.2 of Section 3 of the E-Plan

	<u>Changes/ Notes</u>
<p align="center"><u>Notes:</u></p> <p>* For each unaffected nuclear unit in operation, maintain at least one Control Room Supervisor, one Reactor/Plant Operator and one Equipment Operator.</p>	
<p>** May be provided by Shift personnel assigned other functions. Staffing designated with double asterisk is not counted in "Total Staffing" values at end of table.</p>	<p>Clarified how the double asterisk is used</p>
<p>*** Overall directions of facility response to be assumed by near-site EOF Emergency Response Manager when all facilities are fully manned (activated).</p>	
<p>Note 1: Thirty (30) -minute responder positions in NUREG – 0737, Table 2, Supplement 1, are addressed in the "On-Shift" staffing column. There is not a 30-minute callout process.</p>	<p>Clarified this note</p>
<p>Note 2: This chart provides a table that correlates the emergency response organization to the position guidance of Table 2, NUREG-0737, Supplement 1. Staffing response times are as discussed in Section 9 of the Emergency Plan.</p>	<p>Delete the first sentence, as it is redundant to last sentence</p>
<p>Note 3: Will be performed by the Shift Radiation Protection Technician (E4) until relieved by the Radiation Protection Supervisor - Offsite.</p>	
<p>Note 4: Advisory function will be performed by Shift Technical Advisor (STA) until relieved by Core/Thermal - Hydraulics Engineer.</p>	
<p>Note 5: Additional personnel available from the unaffected station to support In-plant activities.</p>	
<p>Note 6: At Hope Creek, the STA can also be assigned the duties of the Control Room Supervisor or Shift Manager in accordance with technical specification provisions.</p>	
<p>Note 7: Individuals who are radiation worker qualified may fill this position.</p>	
<p>Note 8: An on-shift Nuclear Equipment Operator (Salem) or Rad Waste Operator (Hope Creek) may concurrently fill the Mechanical Maintenance/Rad Waste Operator position until relieved.</p>	<p>Replaced self monitor with radiation worker qualified (See Explanation #6 below)</p>
<p>Note 9: Offsite surveys may be performed by onsite field monitoring personnel until the offsite field monitoring team members report to the EOF..</p>	

PSEG NUCLEAR CORRELATION TO SUPPLEMENT 1 OF NUREG-0737 TABLE 2 (Note 2)
(SER Approved Revision 10 to Hope Creek Emergency Plan dated January 1986 vs. Proposed E-Plan Revision)

Explanation of Changes to “PSEG NUCLEAR CORRELATION TO SUPPLEMENT 1 OF NUREG-0737 TABLE 2” above.

Explanation #1 - Task – Offsite Surveys

No actual change in staffing in this position. Table revised to make easier to understand. Two offsite field survey teams, each with a monitor and a driver (4 ERO members total), will report to the EOF within 90 minutes and are duty positions. If needed, (per note 9), the onsite field monitoring personnel can perform offsite surveys until Offsite Survey Team personnel are in place at the EOF. Prior E-Plan revision added clarification that 2 offsite field team personnel would be covered, if required, by the onsite personnel.

Explanation #2 - Task – Onsite Surveys

Added the unaffected stations on-shift Chemistry Technician as an available resource to support onsite or if needed offsite surveys as the field team vehicle driver. This position is not a new on-shift position, but was not taken credit for in the previous table B-1 comparison.

Explanation #3 – Task – Mechanical Maintenance/Rad Waste Operations

Took credit for the Shift Maintenance Supervisor who is a member of the OSC. Added clarification that RW Operator was an on-shift staffed position. At Salem, this position is filled by any NEO while at Hope Creek, a separate RW Operator is an on-shift position.

Explanation #4 – Task - Electrical Maintenance/Instrument and Control

This is an on-shift OSC position that was not taken credit for in the previous table B-1 comparison. Added the unaffected stations on-shift Electrical and Controls Technicians as additional resources to replace the maintenance supervisor (C4) in the 1986 E-Plan revision. The unaffected stations Electrical and Controls Technicians can provide direct limited support to the affected stations technicians as some tasks have station specific qualification requirements. In addition and not indicated on the B-1 comparison table, an additional Electrical Technician and a Controls Technician from the affected station are called in as a support responder in all emergencies at the ALERT or higher qualification.

Explanation #5 – Task – Fire Fighting/First Aid

Salem/Hope Creek maintains an onsite Fire Department for 24/7/365 response. Fire Department personnel also perform some maintenance activities on a routine bases. The on-shift fire department crew reports to the OSC in a declared emergency. The availability of a full time Fire Department (one Supervisor and four Fire Protection Operators) allow other operations, radiation protection and maintenance personnel to perform their primary ERO functions without the added tasks of Fire Brigade or First Aid Team.

PSEG NUCLEAR CORRELATION TO SUPPLEMENT 1 OF NUREG-0737 TABLE 2 (Note 2)
(SER Approved Revision 10 to Hope Creek Emergency Plan dated January 1986 vs. Proposed E-Plan Revision)

Explanation #6 – Task – Note 7 – Radiation Workers

Comparison Table B-1, Note 7 is revised to change self-monitor qualified to Radiation Worker (RWT) qualified. This note and qualification applies to personnel that could be used to assist on-shift Radiation Protection Technicians in the area of Access Control, Personnel Monitoring, or Dosimetry. There would be no difference between self-monitor qualified personnel during an emergency and Rad Worker trained personnel based upon the current radiation protection program. The proposed revision to the E-Plan, Table 3 – 2, Note 7, would bring the E-Plan up to date with the current radiation protection program. Radiation Protection Technician coverage and/or assessment would still be required for certain specific job functions such as RP coverage of corrective actions, search and rescue, first aid, and fire fighting support.

Access control is computerized and allows personnel who are signed into a current radiation worker permit (RWP) to enter the radiological control area (RCA) without radiation protection assistance. A qualified radiation worker can assist in access control by ensuring personnel entering the RCA use the installed systems.

Personnel monitoring is currently being performed with electronic dosimeters that are being set with the use of a computer for personnel entering the RCA. Personnel are required to pass through portal monitors upon exiting the RCA and will alarm if contamination is found on the exiting person. Personnel are also required to sign out of the RCA using a computer system that will alarm, if the prescribed dose limit is exceeded. A qualified Radiation Worker can assist with personnel monitoring as needed by ensuring personnel entering and exiting the RCA use the installed personnel monitoring equipment. If assistance is needed, an on-shift Radiation Protection Technician could be called.

Everyone who is Radiation Worker trained is assigned dosimetry of record and is required to wear it while onsite. Additional electronic dosimetry is required as appropriate IAW specific radiation work permits (RWPs) and can be obtained by the user at the RCA access Control Point. Additional radiological assistance prior to on-shift ERO augmentation is not required to ensure personnel have appropriate dosimetry of record or appropriate self-reading dosimetry IAW applicable RWPs.

As discussed on page 13 of this attachment, additional maintenance personnel are available on each shift to support the ERO response based on the needs of the specific emergency.

No reduction of Radiation Protection Technician on-shift coverage is involved in this revision. The proposed revision to the E-Plan, Table 3 – 2, Note 7, would not decrease the effectiveness of the E-Plan, would not impact the health and safety of onsite personnel, and would not impact the health and safety of the general public.

SYNOPSIS OF PROPOSED REVISIONS TO PSEG NUCLEAR LLC EMERGENCY PLAN

Summary

This E-Plan change requests an extension to the time goal for the “duty responders” in the ERO to respond and activate ERFs in the event of an emergency. The review determined that increasing ERF activation time goals would not result in a reduction in the capability of the ERO to respond to an emergency. This change is an alternate method for PSEG Nuclear to comply with ERO augmentation expectations in the NRC B-1 Table and would enhance the E-Plan by creating ERF activation time goals consistent with local population and traffic changes and allow for optimization of ERO resources, response, and execution.

Description of Proposed Changes

1. Multiple revisions to the E-Plan, Section 3, Table 3–2 to better reflect actual “On-Shift” ERO by combining on-shift and 30-minute response positions to one “On-Shift” column and taking credit for a robust on-shift fire department and maintenance staff at both stations. Also to change “Capability for Additions” column header from 60 minute to 90 minutes and added position titles for 90 minutes responders to clarify ERO augmentation positions expected to respond. See Attachment 2 for a review of NRC B-1 table vs. proposed table for comparison and explanation of changes and for an ERO On-Shift Staffing Review. See Attachment 4 for proposed changes to current E-plan Section 3, (see Revision bars in right side margin). **Note that NO reduction of ERO positions or personnel assigned to the ERO is proposed.**
2. Revision to the E-Plan, Section 3, Section 9, and Figures 3-1, 3-2, 3-3, 3-4 to clearly indicate which positions are “support responder” positions. Positions not designated as support responder positions are either “on-shift” ERO positions or “duty responder” ERO positions.
3. Minor changes in E-Plan, Section 3, subsections 9.3 and 9.5, made to enhance some ERO position descriptions. These changes clarify existing position description information or note that “on-shift responders” at the unaffected station support the affected station as needed. See positions C2, C3, C4, E3, E4, E6 for changes.

**SYNOPSIS OF PROPOSED REVISIONS TO PSEG NUCLEAR LLC
EMERGENCY PLAN**

4. Revision to the E-Plan, Section 9, page 2, Section 1.3, to rewrite the 4th paragraph:

CURRENT REVISION READS:

It is estimated that a TSC facility can be fully activated within one hour following initial notification of personnel assigned to the TSC. This estimate is only a target value and may vary based on initial notifications, travel, and other conditions.

PROPOSED REVISION WOULD READ:

The TSC emergency response facility can be staffed and activated within 90 minutes of an Alert or higher emergency classification. This staffing and activation time could vary if severe weather conditions or acts of nature/terrorism were experienced at the same time as the ERO callout.

5. Revision to the E-Plan, Section 9, page 6, Section 4.1, to rewrite the 4th paragraph:

CURRENT REVISION READS:

It is estimated that the EOF Facility can be staffed and capable of activation within 60 minutes, following initial notification of personnel assigned to the EOF. The 60 minutes is only a target value and may vary based on initial notifications, travel, and other conditions.

PROPOSED REVISION WOULD READ:

The EOF emergency response facility can be staffed and activated or ready to activate, within 90 minutes of an Alert or higher emergency classification. This staffing and activation time could vary if severe weather conditions or acts of nature/terrorism were experienced at the same time as the ERO callout.

Proposed Revision for 90 minute E-Plan Change package

SECTION 3**EMERGENCY ORGANIZATION****1.0 Normal Management Organization**

PSEG Nuclear LLC is part of an investor-owned, public utility, PSEG, franchised by the State of New Jersey. Its primary purpose is to provide safe, adequate and reliable electric and gas service to its customers at reasonable rates. Management structure and reporting responsibilities for PSEG Nuclear LLC are delineated in organizational charts (figures 2-1 & 2-2). The Emergency Preparedness Manager has been delegated the authority for developing, implementing, and maintaining a comprehensive program for emergency preparedness. The emergency preparedness program is designed to protect the health and safety of the public and onsite personnel during a nuclear plant accident while interfacing with federal, state and local agencies, and to coordinate the development of offsite and onsite plans.

2.0 Normal Shift Organization**2.1 Operations**

The Shift Manager (SM) is normally the senior shift member of the station organization. The SM has the primary management responsibility for safe operation of the station during the shift. The SM maintains an overview of the unit's condition, makes decisions, and directs operations by giving specific directions and responsibilities to the shift personnel. The SM holds a Senior Reactor Operator's License and meets or exceeds the qualifications required by the Facility Technical Specifications.

The Control Room Supervisor (CRS) is an extension of the authority and responsibility of the SM. The CRS maintains an overview of the unit's status and condition. In the areas of operation to which he/she is assigned, the CRS is given the authority and responsibility to make decisions and direct operations by giving specific direction and responsibility to the shift personnel. All operations personnel are subject to the orders, directions and instructions of the CRS as though he/she were the SM.

The CRS coordinates the activities of the shift personnel with the SM to avoid conflicts and to ensure that all operations are performed according to the orders, directions, and instructions of the SM. The CRS holds a Senior Reactor Operator's License and meets or exceeds the qualifications required by Facility Technical Specifications. In the event that the SM is unable to complete a shift, the CRS fills these positions until that position can be recalled from offsite.

Reactor/Plant Operators are assigned to the Control Room in accordance with the requirements of the Facility Technical Specifications. They are responsible for manipulating controls for startup, changing electrical output and reactor power, and plant shutdown, as required. Reactor and Plant Operators take directions from the SM and CRS.

The Equipment Operators perform duties outside the main control room necessary for safe continuous operation of the plant. Their duties include maintaining equipment logs, initiating actions to maintain assigned equipment in a safe condition, and operating auxiliary equipment as necessary to support plant operations. The Equipment Operators take directions from the Licensed Reactor/Plant Operators or CRS.

2.2 Fire Department and First Aid Team

The on-shift fire department is maintained in accordance with Technical Specifications and is staffed by full-time fire protection operators and fire fighters who have received fire-fighting and first-aid training. The fire department's staff reports to the Duty Nuclear Fire Protection Supervisor for normal assignments and directions but receives on-shift direction from the Shift Manager concerning priority response. The First Aid Team is a collateral duty of the Fire Department. The First Aid Team is staffed by personnel who are qualified Emergency Medical Technicians (EMT's) in the state of New Jersey.

2.3 Maintenance

The Shift Controls Technician Electrical are the members of the Maintenance Department who are available to perform surveillance and preventive and corrective maintenance on electrical distribution equipment. This position reports to the Maintenance Department for normal assignments and supervision and receives on-shift direction from the shift maintenance supervisor in coordination with the SM concerning priority repairs to support plant operations.

Maintenance on valves, pumps and other mechanical components is the responsibility of the Maintenance Department Nuclear Technician - Mechanical. These individuals are not included as part of a shift's normal staffing complement but are available, as needed, to support the required repairs. The Scheduled Controls Technician I&C are the members of the Maintenance Department who are responsible for preventive and corrective maintenance on any instrumentation and controls. This position reports to the Maintenance Department for normal assignments and supervision but receives on-shift direction from the shift maintenance supervisor in coordination with the SM concerning priority repairs to support plant operations.

2.4 Technical

The Technical Engineers with specialties in controls, electrical, mechanical, and core thermal engineering, who are assigned to the Technical Support Team, are members of the Technical Department. The PSEG Nuclear, LLC plant technical support provides primary system engineering support during normal operations.

2.5 Security Organization

The on-duty Nuclear Security Supervisor and the Security Force are responsible for station security. These persons are assigned in accordance with the Station Security Plan and report to the Emergency Services Manager for normal assignments and directions, but receive on-shift direction from the SM, concerning special access control requirements or accountability.

2.6 Radiation Protection/Chemistry Organization

The Salem and Hope Creek Generating Stations back-shift Radiation Protection/Chemistry Organization consists of one Shift Radiation Protection Technician (SRPT) and one Onshift Radiation Protection Technician (ORPT), who is directed by the SRPT, and one Chemistry Technician.

When Radiation Protection Supervision is not present, the SRPT, ORPT, and any Radiation Protection Technicians (RPTs), who may be on shift, report to the SM. Radiation Protection personnel on the back-shift are normally responsible for conducting routine and special surveys, operating counting room instrumentation, maintaining access control at the Control Points, writing Radiation Work Permits, and providing job coverage as required.

The Chemistry Technicians are the members of the Station Chemistry Department who are responsible for performing reactor coolant chemistry sampling and analysis. This position reports to the Chemistry Department for normal assignments and supervision, but receives on-shift direction from the SM concerning sampling required to support station operations.

During an Emergency, Chemistry Supervisors and technicians report to the SM, until the TSC is activated. The Chemistry Supervisor(s) and technicians report to the Radiological Assessment Coordinator (RAC), upon activation of the TSC.

3.0 Emergency Organization Functional Description

The emergency organization is explained by functional areas in this section and in Figures 3-1 thru 3-4. Figures 3-1 and 3-2 indicate onsite staffing for both stations. Only the Operations Support Center (OSC) and Technical Support Center (TSC) staff for the affected station will be activated initially. Detailed job descriptions for each box shown in the figures are provided in Part 9.0 of this section.

4.0 Emergency Direction and Control

The individual functioning in the position of Emergency Coordinator (EC) has overall responsibility to direct and control the emergency response. The function of EC passes from the SM to the Emergency Duty Officer (EDO) and to the Emergency Response Manager (ERM) as the emergency response organization is augmented. Responsibilities and duties of these three emergency response positions, (SM, EDO, ERM) are outlined in paragraph 9.0 of this section. The individual fulfilling the function of EC has the responsibilities listed below which are non-delegable:

- Provide direction, control and coordination of PSEG NUCLEAR LLC's emergency response.
- Authorize the expenditure of company funds and commit corporate resources as necessary to implement emergency procedures and/or to mitigate the accident.
- Classify emergencies in accordance with the Salem or Hope Creek Event Classification Guides.
- Make decisions to notify and recommend protective actions to offsite agencies.

4.1 On-Shift and Initial Augment

The SM has the emergency coordinator function initially and provides emergency direction and control (unless relieved by an EDO-qualified member of Station Management). The SM has the authority and responsibility to immediately and unilaterally initiate any emergency actions. The CRS takes operational control of the unit while the SM is fulfilling the emergency coordinator function.

The Nuclear Shift Technical Advisor (NSTA) provides an independent engineering assessment of plant conditions and advises the SM of potential problems recognized as a result of the assessment (The NSTA and the CRS or SM may be the same individual at Hope Creek).

4.2 Short-Term Augment

Following assumption of the emergency coordinator function (from the SM) by an EDO, the EDO has the authority and responsibility to immediately and unilaterally initiate any emergency actions. The SM then takes control of the unit and is responsible for issuing all orders concerning operations that require direction by a senior reactor operator licensed individual. The CRS assists the SM. The NSTA provides an engineering assessment of plant conditions.

4.3 Long-Term Augment

Following the assumption of the emergency coordinator function (from the EDO) by the Emergency Response Manager (ERM), the ERM has the authority and responsibility to immediately and unilaterally initiate emergency actions. The Site Support Manager (SSM) is responsible for assessing and advising plant-related protective action recommendations to the ERM. The SSM receives plant condition information from the Technical Support Supervisor (TSS) located in the TSC.

The EDO retains the authority and responsibility for immediately and unilaterally initiating measures to protect the plant and onsite personnel.

4.4 Plant Operations

During an emergency, the normal Control Room staff is maintained. A more senior member of the station management, who holds a Senior Reactor Operators license may assume direct control of the shift after completing proper relief procedures while the SM shall maintain the EC function until relieved by the EDO. Entry into the Severe Accident Management Guidelines will be in accordance with the station emergency operations procedures.

5.0 Corrective Actions and Support of Operations

5.1 On-Shift and Initial Augment

Upon determination by the SM of an emergency classified as an Alert or higher, the OSC is activated. The PSEG Nuclear LLC Fire Protection Operators., a Radwaste Operator, Equipment Operators, a Shift Controls Technician Electrical, and a Scheduled Shift Controls Technician I&C report to either the OSC or other onsite location as directed.

This initial group of individuals is under the control of the initial OSC Coordinator. Additional support personnel are called in by the SM.

The Operations Manager or Operations Superintendent – Assistant Operations Manager are normally expected to report to the Control Room of the affected unit under accident conditions to oversee plant operations and provide guidance and direction, as appropriate, to the SM.

5.2 Short-Term Augment

The initial OSC Coordinator takes control of the corrective action and support function from the SM and acts as an interface between the SM and the OSC support teams. The initial OSC Coordinator assumes the responsibility for directing support of repair, corrective actions, fire fighting, search and rescue teams, and is responsible for supplementing the OSC staff as needed. The initial OSC Coordinator ensures through coordination with the EDO, that adequate OSC staffing is available prior to accomplishing a site evacuation. In addition to the on-shift staffing, an additional Controls Technician Electrical and Controls Technician I&C are called in.

The augment shall also consist of a supervisory group and respective support personnel functioning under the direction of the OSC Coordinator. The supervisory group consists of representatives from Maintenance, Operations, and Radiation Protection. These supervisors shall operate from the OSC. Support personnel shall report to the Ready Room until required for corrective actions. The Radiation Protection Supervisor for Exposure Control (OSC) shall additionally serve as a liaison between Radiation Protection at the Control Point and the OSC staff.

5.3 Long-Term Augment

The long-term augment consists of additional radwaste operators, electricians and machinists as necessary to support emergency response operations, and is under the control of the OSC Coordinator. This augment may include additional contractual assistance as established through the Administrative Support Manager (ASM) in the EOF.

6.0 Offsite Radiological Accident Assessment

6.1 On-Shift and Initial Augment

The SRPT is the individual responsible for radiological accident assessment on shift and reports to the SM. The SRPT at Hope Creek takes direction from the SM, until the TSC is activated. Upon activation of the TSC, the SRPT takes direction from the Radiological Assessment Coordinator (RAC) or his designee.

The Salem SRPT takes direction for the duration of an emergency from the SM. The SRPT obtains radiological and meteorological data from the Radiation Monitoring System (RMS) and Plant Display Systems. Trained personnel are available on shift to do in-plant and out-of-plant radiation surveys. The SRPT will make offsite dose projections using prescribed methods. These dose projections are used as a basis for offsite radiological protective action recommendations, which the SRPT relays to the SM in the Control Room. The SM considers both the recommendation from the SRPT and his own evaluation of the plant status (predetermined protective action recommendation) to derive an appropriate protective action recommendation to be communicated to offsite authorities. The SRPT also assigns onsite radiation protection and chemistry personnel to obtain radiation monitor data and coolant samples for analysis.

The ORPT takes direction from the SRPT or SM, until the TSC is activated. Upon activation of the TSC at Salem, the ORPT takes direction from the RAC. The ORPT at Hope Creek takes direction from the SRPT and the RAC upon activation of the TSC.

6.2 Short-Term Augment

The Radiological Assessment Coordinator (RAC) and additional support personnel report to the TSC to assume responsibility for offsite dose projection and monitoring. The Radiation Protection Supervisor Offsite directs onsite and offsite monitoring personnel and performs/directs dose calculations. The RAC provides information to the communicators to give the States of Delaware and New Jersey (updates of the Station Status Checklist), to enable the states to calculate an independent offsite dose projection.

6.3 Long-Term Augment

When the Emergency Operations Facility (EOF) is activated, the Radiological Support Manager (RSM) has responsibility for offsite dose projections and offsite field monitoring. The Radiological Support Manager (RSM) directs offsite dose projection and field monitoring from the EOF. Communicators in the EOF assume the duties of providing offsite authorities with updates of the Station Status Checklist.

The Offsite Teams radio survey results to the Field Team Communicator. Radiological assessment staff members make offsite dose projections using either computer or manual calculation methods and Offsite Team survey results.

The dose projections are used as a basis for radiological offsite protective action recommendations, which the RSM provides to the ERM.

The ERM considers both the recommendation from the RSM and the evaluation of the plant status to derive and communicate an appropriate protective action recommendation to offsite authorities via a communicator. The RSM uses additional information from plant sample analysis, State offsite monitoring teams, and other support organizations to provide the best possible radiological dose assessment and protective action recommendation.

7.0 Radiation Protection Onsite

7.1 On-Shift and Initial Augment

The SM is the individual responsible for radiation protection onsite. The SM is supported by SRPT/Chemistry personnel (both Hope Creek and Salem), available to do in plant, onsite radiation monitoring, and systems sampling and analysis. Radiation Protection/Chemistry personnel also support onsite corrective actions, access control, personnel monitoring, dosimetry, search and rescue and first aid.

7.2 Short-Term Augment

As the emergency organization is augmented, additional Radiation Protection personnel report to the Control Point and the TSC. The SRPT continues with dose assessment and reports/gives results to the SM/EDO until relieved by the RAC. When relieved (turnover completed), the Hope Creek SRPT/ORPT assists with Radiation Protection activities at the CR, CP, TSC, and OSC, as needed and directed by the RAC or his designee. The Salem SRPT assists with Radiation Protection activities at the CR, primarily, and OSC. The Salem ORPT assists with Radiation Protection activities at the CP, OSC, and TSC.

The RAC assumes responsibility for Onsite Radiation Protection/ Chemistry personnel. Radiation Protection personnel at the Hope Creek Control Point report to the SRPT/ORPT, who in turn reports to the RAC. Radiation Protection personnel at the Salem Control Point report to the ORPT, who in turn reports to the RAC. Chemistry personnel at the Control Point report to the Chemistry Supervisor, who is located at the TSC. Additional support personnel are shown in Emergency Organization Figure 3-2.

7.3 Long Term Augment

The RAC continues to be responsible for onsite radiation protection at the TSC and CP. The Radiation Protection staff is augmented as required by the emergency conditions. Additional Hope Creek Radiation Protection personnel report to the SRPT/ORPT at the Control Point who, in turn, reports to the RAC at the TSC. Additional Salem Radiation Protection personnel report to the ORPT at the Control Point who, in turn, reports to the RAC located at the TSC. This augment may include additional contractual assistance as established through the ASM in the EOF.

8.0 Plant Systems Assessment and Engineering

8.1 On-shift and Initial Augment

The NSTA, an individual experienced in core analysis and thermal hydraulics, provides plant systems assessment and evaluates plant conditions relative to emergency action levels. Recommendations for protective actions are made to the SM on plant conditions.

8.2 Short-Term Augment

The NSTA, or Incident Assessor at Hope Creek, normally remains in the control room and directly advises the SM on plant assessment. The short-term augment personnel for the areas of Core/Thermal Hydraulics, Nuclear Fuels, Mechanical Engineering and Electrical Engineering report to the Technical Support Supervisor in the TSC.

At the TSC, the Technical Support Supervisor (TSS) takes command and direction of the technical support team led by the Technical Support Team Leader (TSTL). The TSS is responsible for making technical plant assessments and providing recommendations on protective actions to the EDO.

The technical support team in the TSC/EOF is a group of engineers providing engineering support for the TSC and Control Room. The technical support team, under the direction of the Technical Support Team Leader (TSTL), is comprised of engineers familiar with plant operational specifics and provides an assessment of plant systems and trends. As needed, additional engineers may be directed to report to the EOF to augment the engineering resources as part of the emergency response or to assist with recovery.

8.3 Long-Term Augment

Assistance for the Technical Support Team in the TSC will be coordinated via the Technical Support Manager (TSM) in the EOF. The TSM shall callout technical support personnel and supply the TSC with support and information as required.

The TSM in the EOF directs and coordinates engineering support (requested from TSC) and any construction efforts required by the emergency response.

9.0 Emergency Organization Job Descriptions

The following job descriptions are the responsibilities and duties of the emergency response organization personnel as delineated in Figures 3-1, 3-2, 3-3, and 3-4. Position titles in figures 3-1, 3-2, 3-3, and 3-4 designated by an asterisk indicates that the position is optimal “support responder”, but not required. Position titles in figures 3-1, 3-2, 3-3, and 3-4 not designated by an asterisk indicates that the position is a required ERO on-shift position or ERO “duty responder” position. See “Maintenance of the ERO” procedure for more information on expectations concerning “support responder” and “duty responder” positions.

9.1 A. EMERGENCY DIRECTION AND CONTROL

A.1 Emergency Response Manager (ERM)

The ERM has overall responsibility for management of onsite and offsite emergency response activities. The ERM assumes EC functions from the EDO. When performing the function of EC the ERM is responsible for non-delegable duties as described in part 4 of this section.

Duties:

- 1) An ERM is available 24 hours a day.
- 2) Upon classification of an **ALERT**, the ERM, with coordination from the EDO, makes the decision to activate the Emergency Operations Facility (EOF) organization.
- 3) Upon classification of a **SITE AREA** or **GENERAL EMERGENCY**, the ERM is required to activate the EOF organization.
- 4) The ERM keeps corporate management advised of plant status and significant emergency response operations.
- 5) Upon arrival at the EOF, the ERM keeps a log of actions taken.
- 6) The ERM has ultimate authority and responsibility for the dissemination of technical information concerning plant conditions and emergency response operations.
- 7) The ERM acts as the principal corporate interface between the company and all other organizations.
- 8) In carrying out the duties of the position, the ERM designates alternates or others to act in his/her behalf as he/she deems necessary except for those functions considered as non-delegable.
- 9) The SSM may assume the ERO position of ERM to include EC functions, if the ERM is unable to fill the position.

A.2 Site Support Manager (SSM)

The SSM reports to the ERM and is responsible for providing information to the ERM on plant conditions which may result in Protective Action Recommendations (PARs) to offsite authorities, or classification escalation.

Duties:

- 1) Reports to the ERM.
- 2) Coordinates with and is an interface between the TSC and the ERM.
- 3) Communicates with the TSS and is knowledgeable of current plant conditions such that he can determine if Emergency Action Levels (EALs) have been exceeded or if issuance of Protective Action Recommendations (PARs) is required.
- 4) Provides input information for plant condition PARs to the ERM. Also directs callouts for PARs transmitted to the states.
- 5) Responsible for providing technical information and briefings to the Public Information Liaison (PIL).
- 6) Upon notification of an emergency, the SSM notifies any additional individuals needed to support the site support function.
- 7) Upon arrival at the EOF, the SSM keeps a log of actions taken.
- 8) Notifies the ERM when prepared to assume site support functions in accordance with Emergency Plan Implementing Procedures.
- 9) Responsible for coordination and assignment of offsite support to individuals within the emergency response organization.
- 10) Assumes the ERO position of ERM to include EC functions, if the ERM is unable to fill the position.

A.3 Emergency Duty Officer (EDO)

The EDO relieves the SM of the EC function and all accident management except plant operations. When performing the functions of the EC the EDO is responsible for the non-delegable duties as described in Part 4 of this section.

Duties:

- 1) If possible, reports to the Control Room initially to receive a turnover of the EC function and responsibility for emergency direction and control from the SM.
- 2) Evaluates plant and radiological conditions.
- 3) When acting in the EC function, responsible for ensuring accomplishment of the necessary assessment of offsite radiation concentrations resulting from a release.
- 4) Determines alternate locations to be used to assemble emergency personnel; ensures onsite/offsite communications are established.
- 5) Responsible for activating the TSC.
- 6) May call in additional station management as necessary.
- 7) Reviews near-term and long-term actions taken by the SM and briefs the SM on all significant information and actions taken.
- 8) Responsible for providing the point of contact with the NRC onsite.
- 9) Has the authority to order any required Protective Actions for onsite personnel.
- 10) Ensures all injured personnel receive proper assistance.
- 11) Ensures the dispatch of emergency/survey teams as required by the emergency conditions.
- 12) The TSS may assume the ERO position of EDO to include EC functions, if the EDO is unable to fill the position.

A.4 Shift Manager (SM)

The SM initially assumes the EC function and is responsible for initiating the necessary immediate actions to limit the consequences of an accident and bring the affected unit under control. When performing the function of EC, the SM is responsible for the non-delegable duties as described in Part 4, Emergency Direction and Control, of this Section in the Emergency Plan.

Duties:

- 1) Notifies and briefs the EDO of an emergency and determines the need for summoning additional personnel.
- 2) Evaluates plant and radiological conditions when in the EC function.
- 3) Maintains all required records in accordance with emergency preparedness implementing procedures.
- 4) Initiates the required telephone notifications of offsite agencies, until the EDO assumes this responsibility.
- 5) Keeps the EDO informed of plant status.
- 6) Directs the operation of the plant in compliance with all normal plant procedures, directives, technical specifications, emergency procedures and severe accident guidelines.
- 7) Establishes priorities for OSC response activities.

A.5 Emergency Preparedness Coordinator (EPC)

The EPC assists the ERM in evaluating the overall emergency response from the EOF. Additionally, the EPC assists in the assignment of response actions and provides resource and action guidance with respect to the emergency plan and emergency response commitments.

Duties:

- 1) Reviews data transmitted to offsite organizations.
- 2) Assists ERM in review of applicable procedures.
- 3) Provides guidance on offsite interface.
- 4) Assists ERM in developing/reviewing protective action recommendations.
- 5) Verify notifications for changes in classifications or PARs.

9.2 B. PLANT OPERATIONS

B.1 Nuclear Shift Technical Advisor (NSTA)

The NSTA is the accident assessment advisor to the SM during emergencies. The NSTA may be the same individual as the CRS if all requirements are met. The NSTA's primary duty is to provide technical operational advice to the SM during the emergency.

At Hope Creek, if the NSTA is the CRS or SM, then another SRO shall assist the NSTA as the "Incident Assessor" during unexpected or transient conditions. Responsibilities of the "Incident Assessor" include:

- Remain within 10 minutes of the Control Room
- Advisor to the SM on matters of safety and act as an assistant to the NSTA.
- During transient and accident conditions:
 - Maintain an overview role of plant operations
 - Monitor critical safety functions
 - Verify critical steps of EOPs and transitions
 - Perform independent assessments and diagnosis of plant conditions
 - Perform independent verification of Emergency Classifications
 - Provide recommendations to the SM and/or CRS

B.2 Control Room Supervisor (CRS)

The CRS assists the SM during the emergency.

Duties:

- 1) Brief the SM and EDO as necessary.

B.3 Reactor Operator/Plant Operator (RO/PO)

The RO/PO supports the CRS in emergency assessment and plant emergency response.

Duties:

- 1) Provide additional assistance as directed by the CRS to mitigate effects of an emergency situation.
- 2) Manipulate controls for routine and, if necessary, emergency operations for the affected unit in accordance with the operating and emergency instructions.

B.4 Control Room Communicators (CM1/CM2)

The CM1/CM2 relay official messages during an emergency for the SM, and gather plant data to be transmitted to emergency response facilities.

Duties:

- 1) At the request of the SM, deliver emergency notification messages to federal, state, and local authorities.
- 2) Call up additional personnel as requested.

B.4.A Communicator - OPS Advisor (Hope Creek Only)

Gathers plant data and transmits it to other Emergency Response Facilities.

B.5 Equipment Operators (EO)

The EOs assist the CRS and RO/PO in accident assessment and emergency response operations.

Duties:

- 1) Operate plant equipment, including radwaste equipment, in support of emergency response and recovery operations.
- 2) Maintain equipment and associated logs.
- 3) Conduct search and rescue operations, if needed.

9.3 C. CORRECTIVE ACTION AND SUPPORT OF OPERATIONS**C.1 Operations Support Center Coordinator (OSCC)**

The OSCC directs plant personnel in support of repair, corrective actions, fire fighting, search and rescue teams. The OSCC also acts as an interface between the SM and the OSC Support teams.

- 1) Activates OSC, and assembles team.
- 2) Confirms team is briefed and radiologically equipped.
- 3) Directs fire fighting personnel during a fire emergency.
- 4) Provides the SM with status reports of repair and corrective actions.

C.2 Scheduled Controls Technician Instrument and Controls (I&C)

The Scheduled Controls Technician I&C assists in repair tasks as requested by the SM, OSCC, or OSC Support Supervisor.

Duties:

- 1) Activating equipment and monitoring equipment operation.
- 2) Receives direction from the Maintenance Supervisor or OSC Coordinator.
- 3) If assigned to the unaffected stations, support affected station as needed.

C.3 Shift Controls Technician Electrical

The Shift Electrician assists in repair related tasks as requested by the SM, OSCC, or OSC Support Supervisor.

Duties:

- 1) Supports the repair and corrective actions during emergency response and recovery operations.
- 2) Receives direction from the OSCC.
- 4) If assigned to the unaffected stations, support affected station as needed.

C.4.A OSC Operations Supervisor

C.4.B OSC Support Maintenance Supervisor

C.4.C OSC Shift Maintenance Supervisor

These OSC Support Supervisors report to the OSCC. They are responsible for providing supervision of on-shift operations and maintenance support personnel in the OSC. The OSC Shift Maintenance Supervisor will act as the OSC Coordinator until relieved.

Duties:

- 1) Assemble OSC teams as requested.
- 2) Coordinate corrective action.
- 3) Verify appropriate briefings, protective equipment, and dosimetry have been obtained by each team dispatched.

- C.5.A OSC Radwaste Operator
- C.5.B Nuclear Tech - Mechanical
- C.5.C This designator is no longer used
- C.5.D Controls Tech Electrical
- C.5.E Controls Tech - I&C

These OSC Support Team Members report to their respective OSC Supervisors at the OSC. Assignments and responsibilities vary, but all disciplines provide general technical and specialist support as requested. Members are frequently assigned to corrective actions and repair teams. Duties:

- 1) Activate or monitor equipment.
- 5) Assess damage, determine condition, or report status of plant/plant equipment.
- 6) Receive direction from the Maintenance Supervisor.

C.6 Fire Brigade

The Fire brigade reports to the OSCC and provides fire protection support to the Station.

Duties:

- 1) Provide fire fighting and first aid support.
- 2) Conduct search and rescue operations.
- 3) Conduct survey, repair and corrective actions.

C.7 This designator is no longer used

C.8 Planner

The planner reports to the OSCC to provide support to the OSC in material control, repair and corrective action activities.

Duties:

- 1) Supply/obtain support materials as needed for OSC activities.
- 2) Assist in tagouts, parts identification, and procurement.

C.9.A This designator is no longer used

C.9.B This designator is no longer usedC.10 OSC Clerk

The OSC Clerk reports directly to the OSCC and provides administrative support to the OSC.

Duties:

- 1) Update OSC Status Boards and maintain the OSCC logbook.
- 2) Provide general clerical and administrative support to the OSC.

9.4 D. RADIOLOGICAL ACCIDENT ASSESSMENTD.1 Radiological Support Manager (RSM)

The RSM reports to the ERM and is responsible for offsite assessment of potential or actual radiological consequences to the public. The RSM provides assistance to the RAC, as necessary.

Duties:

- 1) The RSM reports to the ERM.
- 2) The RSM is responsible for offsite dose assessment after the EOF has been activated. Prior to activation of the EOF organization, the RAC has this responsibility.
- 3) The RSM provides field monitoring teams for offsite radiological evaluation.
- 4) The RSM ensures radiological dose calculations are made.
- 5) The RSM provides input information on potential or actual radiological releases or consequences and PARs to the ERM. The RSM communicates with the States of Delaware and New Jersey, and relays radiological information and other pertinent information to them.
- 6) The RSM initiates and coordinates long-term environmental monitoring. Long-term assistance may also be drawn from other nuclear power utilities and contractors.
- 7) The RSM establishes communication with medical assistance facilities and personnel to put the Emergency Medical Assistance Plan into operation, if necessary. Contact is established as defined in the Emergency Medical Assistance Plan.

- 8) After the emergency is under control and evacuation of the public is no longer likely, the RSM assists station personnel to determine efforts which may be used to further reduce exposures to the station operating personnel and to the public. The doses are evaluated for the duration of the exposure.

D.2 Radiological Assessment Staff - EOF

The D2A position's primary responsibility is performing and assessing dose assessment calculations with respect to making appropriate PAR recommendations to the RSM in accordance with NC.EP-EP.ZZ-0602(Q). This includes the completion of the Station Status Checklist, page 2. Additional duties the D2A position may be called upon to perform are the same as the D2B and D2C positions, listed below.

D.2.A Radiological Assessment Staff – EOF Duty

D.2.B Radiological Assessment Staff – EOF Supp

D.2.C Radiological Assessment Staff – EOF Supp

- 1) Assists station personnel to determine efforts, which may be used to further reduce exposures to the station operating personnel and to the public.
- 2) Complete the radiological portion of the NRC Data Sheet.
- 3) Coordinates and directs offsite monitoring from the EOF.
- 4) Monitors the habitability of the EOF.
- 5) Updates the radiological status boards.
- 6) Issues dosimetry to EOF personnel, as directed by the RSM.
- 7) Provide radiological assessment data to the SSM, Communicators, and State representatives.

D.3 Offsite Team Coordinator/Field Team Communicator

Responsible for maintaining offsite communications with Field Teams in the EOF.

Duties:

- 1) Establishes continuous communications with the Offsite Teams.
- 2) Ensures that Offsite Teams are kept up-to-date on the status of the emergency.

- 3) Evaluates data provided by the Field Teams to track the plume and confirm the dose estimates.

D.4 Offsite Team Members

Responsible for radiological support offsite as directed by the EOF.

D.4.A Offsite Team Monitor

Duties:

- 1) Performs offsite radiation and air sampling surveys as directed by the Radiological Support Manager or Radiological Assessment Coordinator.
- 2) Informs EOF or TSC of survey results.

D.4.B Offsite Team Driver

- 1) Drives to offsite locations.
- 2) Assist Offsite Team Monitor as appropriate.

9.5 E. RADIATION PROTECTION ONSITE

E.1 Radiological Assessment Coordinator (RAC)

The RAC, usually located in the TSC, assists the SM/EDO in matters relating to radiological problems during the emergency and provides radiological assessment and recommendations for protective action recommendations to the EDO. Upon an Alert or higher classification, the unaffected unit's duty RAC will report to the affected Station's Radiation Supervision to fulfill Radiation Protection Technician (RPT) duties, until relieved by RPTs who have been called in.

Duties:

- 1) Supervise the onsite Radiation Protection Organization.
- 2) Supervise the onsite Chemistry Organization.
- 3) Ensure that the TSC is ready for radiological response activation.
- 4) Ensure adequate emergency response staff for radiological and chemistry assessment.
- 5) Advise EDO on all station/site radiological issues.

- 6) Advise EDO on all offsite radiological issues.
- 7) Make final EAL recommendations to EDO on radiological issues.
- 8) Make recommendation of protective action to the EDO for onsite personnel (including onsite evacuation).
- 9) Make final radiological PARs to EDO for offsite personnel.
- 10) Advise/recommend applicable emergency dose authorization extensions to the EDO.
- 11) Provide the Station Status Checklist Radiological Data Section to EDO, or designate, until the EOF takes responsibility of performing this function.
- 12) Interface directly with the RSM at EOF.
- 13) Interface directly with the NRC in the TSC, or by phone, on specific radiological issues.
- 14) Direct/review dose assessment at the TSC.
- 15) Ensure appropriate contamination controls are established for all on-site emergency response facilities.
- 16) Direct vehicle surveys and decontamination, as required, if the EOF is not activated. Assist the RSM in vehicle surveys and decontamination, as required, if the EOF is activated.
- 17) Direct effluent sampling and analysis.
- 18) Recommend expenditures for additional equipment or staff to support accident response.
- 19) Direct all onsite radiological and bioassay sampling.
- 20) Decide when and who shall receive potassium iodide (KI) for all onsite personnel.

E.2.A Radiation Protection Supervisor – Offsite (TSC)

The Radiation Protection Supervisor – Offsite (RPS - Offsite) is a common position between Hope Creek and Salem Nuclear Generating Stations. During dual Site events, the RPS – Offsite will initially report to the Station that paged him to come in first. Upon arrival, the RPS – Offsite will report to the Station that has the most significant radiological concern, according to the RAC or the EDO.

Duties:

- 1) Advise RAC of all radiological conditions.
- 2) Perform dose calculations and provide RAC with recommendations on onsite protective actions for the owner controlled area as appropriate.
- 3) Coordinate effluent, steam lines, liquid, and plant vent sampling and analysis.
- 4) Direct onsite readings for projection purposes and provide findings to the EDO and RSM staff.
- 5) Interface with Control Point on plant vent samples.
- 6) Supervise the radiation protection radio operator and the onsite field monitoring team.
- 7) Ensure onsite radiological monitoring for evacuees or personnel gathered at assembly stations is being performed.
- 8) Ensure onsite groups being moved or evacuated are receiving appropriate radiation protection escort(s).
- 9) Assume control of offsite field monitoring teams until EOF takes control for the teams.
- 10) Assume limited RAC duties in accordance with appropriate emergency plan implementing procedures.

E.2.B Radiation Protection Supervisor - Exposure Control (OSC)

Upon an Alert or higher classification at Salem, Hope Creek E.2.B on-duty position will report to Salem Radiation Protection Supervision to fulfill RPT duties, until relieved by RPTs. Upon an Alert or higher classification at Hope Creek, Salem E.2.B on duty positions will report to the Hope Creek Radiation Protection Supervision to fulfill RPT duties, until relieved by RPTs. During dual Site events, the Hope Creek and Salem E.2.B position will report to their Station duty facilities (OSC).

The RPS - Exposure Control (OSC) coordinates with the OSC staff in order to facilitate timely in-plant OSC repair corrective action missions, which includes search and rescue and medical support missions.

Duties:

- 1) Interface directly with OSCC and SM on repair corrective action missions.
- 2) Support radiation work permits and approve authorization reviews for repair corrective action missions.
- 3) Coordinate RP support personnel for repair corrective action missions with SRPT/ORPT/RAC at Hope Creek or ORPT/RAC at Salem.
- 4) Provide radiological planning for repair corrective action missions.
- 5) Provide mission and status information to RAC or RPS – Offsite, as time allows.
- 6) Implementation of protective actions concerning contamination and habitability for OSC/CR.
- 7) Coordinate dose extensions to appropriate values for the emergency response organization, including emergency dose authorization, in accordance with appropriate emergency plan implementing procedures.
- 8) Supervise RP Technicians assigned to the OSC.
- 9) Assist RP Technician assigned to the Control Room (Salem Only).

E.3 Radiation Protection Technicians (RPT)

The RPT is responsible for radiological support for repair, corrective action, search and rescue, and medical support missions.

Duties:

- 1) Perform onsite radiation and air sampling surveys.
- 2) Conduct operational checks on all equipment.
- 3) Perform dose calculations.
- 4) Perform access control, and issue dosimetry.
- 5) Decontaminate personnel and equipment.
- 6) Provide sampling results to appropriate RPS.
- 7) Assist in Radiological Work Permits (RWP) preparation.
- 8) Support Repair corrective action missions as required.
- 9) Maintain communication with the Control Point.
- 10) Provide communications to onsite and offsite Field Teams (RPT – Radio).
- 11) Perform onsite/offsite radiological monitoring.
- 12) Issue radiological monitoring equipment.
- 13) Initiate, perform, and assist in sampling and analysis of samples.
- 14) If assigned to the unaffected stations, support affected station as needed.

E.3/E.4 Shift Radiation Protection Technician E.4 (SRPT)/Onsite Radiation Protection Technician E.3 (ORPT)

The SRPT/ORPT will assist and advise SM with respect to radiological conditions prior to TSC activation.

Duties:

- 1) Perform initial dose assessment.

- 2) Advises SM on radiological matters prior to being relieved by an RPS.
- 3) Evaluate Radiation Monitoring System (RMS) and provide long term RMS information to all Emergency Response Facilities.
- 4) Provide CR contamination control/habitability monitoring.
- 5) Support repair and corrective action missions with personnel and equipment (medical, search and rescue, fire fighting, escort, etc.)
- 6) Assist with count room activities and direct instrument issue activities.
- 7) Assist in radwaste activities.
- 8) Coordinate inplant surveys, obtain inplant samples (noble gas/iodine), and effluent grab samples.
- 9) Direct access control and dosimetry issue.
- 10) Request dosimetry and whole body count support for inplant personnel.
- 11) Coordinates decon of personnel and equipment.
- 12) Assess RMS readings for inplant habitability and protective equipment use.
- 13) Coordinate, initiate, perform, and assist in sampling and analysis of samples.
- 14) If assigned to the unaffected stations, support affected station as needed.

E.5 Chemistry Supervisor

The Chemistry Supervisor, located at the TSC, coordinates Chemistry's response for sampling and analysis functions. The Chemistry Supervisor reports to the RAC. This is a common position between Hope Creek and Salem Generating Stations and during dual Site events, the Chemistry Supervisor will initially report to the Station that first paged him/her. He/She will upon arrival report to the Station that has the most significant chemistry concern, according to the RAC and/or the EDO's guidance.

Duties:

- 1) Coordinates Chemistry personnel activities.

- 2) Directs and coordinates high activity samples, main steam sampling, and analysis of samples.
- 3) Coordinates activation of high activity sampling systems and necessary ventilation systems in those areas.
- 4) Relays sample analysis data to the RAC and then the RSM once the EOF is activated.
- 5) Coordinates sample results with the Core Thermal-Hydraulics Engineer and the Technical Support Team Leader.
- 6) Initiates sample log.
- 7) Augments Chemistry Staff when necessary.
- 8) Coordinates with Core Thermal-Hydraulics Engineer in the TSC.

E.6 Chemistry Technician (CT)

The CT will assist and advise the Chemistry Supervisor with respect to sampling activities from the Control Point.

Duties:

- 1) Directs and coordinates high activity samples, main steam sampling, and analysis of samples.
- 2) Disassembles, assembles, and operates the multi-channel analyzer.
- 3) Establishes backup laboratory facility (Hope Creek Count Room for Salem and Salem for Hope Creek).
- 4) Coordinates activation of high activity sampling systems and necessary ventilation systems in those areas if the TSC is not activated.
- 5) CT at the unaffected station should support the affected stations CT and if needed, support RP with onsite/offsite monitoring (driver).

9.6 F. PLANT SYSTEMS ASSESSMENT AND ENGINEERING

F.1 Technical Support Supervisor (TSS)

The TSS has overall responsibility for tracking and trending plant conditions, identifying plant condition EALs, and providing advice on PARs to the EDO, and when the EOF is activated, the SSM. The TSS is the lead evaluator and decision maker for the Severe Accident team.

Duties:

- 1) The TSS reports to the EDO.
- 2) The TSS evaluates the potential for an offsite radiological release based upon plant conditions in accordance with EALs. Prior to activation of the EOF, these evaluations are provided to the EDO for action. After activation of the EOF, these evaluations are provided to the SSM for action and the EDO for information.
- 3) The TSS provides advice to the EDO on priorities for plant repair and corrective actions.
- 4) The TSS is responsible for analysis and development of plans and procedures in direct support of operations personnel with the objective of placing the plant in a safe shutdown condition in a manner, which minimizes any adverse health and safety effects on the public.
- 5) The TSS obtains an evaluation of instrument and controls problems from the Technical Support Team, determines alternatives, and coordinates the installation of short-term instrument and controls modifications.
- 6) The TSS directs the actions of the Technical Support Team Leader and the Technical Support Team in the TSC.
- 7) The TSS may assume the ERO position of EDO to include EC functions, if the EDO is unable to fill the position.
- 8) The TSS directs plant operations by providing specific instructions directly to shift personnel, after Severe Accident Management Guidelines (SAMG) transition has been made.

F.2 Technical Support Team Leader (TSTL)

The TSTL is responsible for coordination and guidance of the engineering support in the TSC. The TSTL will be the primary interface at the TSC for the TSM in the EOF and will coordinate all engineering support required from the EOF.

Duties:

- 1) The TSTL reports to the TSS.
- 2) Coordinates all engineering tasks requested by the SM and the EDO.
- 3) Coordinates/Requests engineering support from the Technical Support Manager (TSM) at the EOF.

- 4) Serves as primary point-of-contact in TSC for TSM.

F.3 Engineer - Electrical

The Engineer - Electrical develops recommendations concerning plant operations relating to electrical systems and equipment for the TSTL.

Duties:

- 1) Analyzes plant electrical systems and equipment to determine current operating condition.
- 2) Reviews proposed plant operations with respect to electrical systems.
- 3) Receives instructions from and reports findings to the TSTL.

F.4 Engineer - Mechanical

The Engineer - Mechanical develops recommendations concerning plant operations relating to mechanical system for the TSTL. The Mechanical Engineer is an evaluator on the Severe Accident Management team.

Duties:

- 1) Forecast future values of EOP and SAG control parameters (parameter trending).
- 2) Identify plant conditions as they relate to EOP and SAG control parameters and specify the state of the plant with respect to those parameters.
- 3) Evaluate plant conditions, control room indications, and control parameters to determine core status.
- 4) Determine operability of a system and its availability.
- 5) Develop a methodology to restore a system.

- 6) Recommend appropriate EOP/SAG actions to follow based on trends, indications, or calculations.
- 7) Receives instructions from and reports to the TSTL.

F.5 Engineer - Controls

The Engineer - Controls develops engineering recommendations for the TSTL concerning control systems impacted by an emergency.

Duties:

- 1) Provides control systems accident assessment.
- 2) Analyzes plant control systems requiring trouble-shooting during an emergency.
- 3) Receives instructions from and reports to the TSTL.

F.6.A Core Thermal-Hydraulics Engineer

NOTE:
If needed to ensure timely availability, the CTHE may report to and perform assigned duty from the EOF

The Core Thermal-Hydraulics Engineer (CTHE) develops recommendations for plant operations that would affect safe core conditions for the TSTL. The Core Thermal-Hydraulics Engineer provides fuel damage assessment information to the TSS, RAC, TSM and RSM.

Duties:

1. Analyzes core parameters to determine current conditions of the core.
2. Reviews proposed plant operations with respect to the effect on the core conditions.
3. Evaluates fuel damages based core thermal conditions, radiological conditions and specific chemistry samples.
4. Coordinates high activity reactor coolant sampling with the Chemistry Supervisor and the RAC.
5. Receives instructions from and reports to the TSTL.

F.6.B This designator is no longer used

F.7 Emergency Preparedness Advisor (EPA) - TSC

The EPA reports to the EDO. The EPA is responsible for directing and supervising the activities of the TSC Communicators in obtaining and routing operational and radiological data.

Duties:

- 1) Verify that required offsite/onsite notifications are made and that notifications/responsibilities are turned over properly when control is passed from one facility to another.
- 2) Ensure that operational and radiological data are obtained, posted, and distributed in the TSC.
- 3) Assist in testing and maintaining communication systems in the TSC and other onsite facilities.
- 4) Provide resource and action guidance with respect to the emergency plan and emergency response commitments.

F.8 TSC Communicator

The TSC Communicators report to the EPA/EDO at the TSC and are responsible, at direction of the EPA/EDO, to make official notifications, and to obtain and transmit data.

Duties:

- 1) Make required notifications.
- 2) Obtain operational and radiological data.
- 3) Transmit data when required.

F.8.A This Classification is no longer used.

F.8.B OPS Advisor - TSC

The OPS Advisor - TSC reports to the TSS at the TSC and is responsible, at direction of the TSS, to obtain plant status information from the control room, keep TSC supervisors informed of plant status, assist in status board maintenance and serve as a backup to either one of the TSC Communicator positions (CM1/CM2). The Ops Advisor is an evaluator on the Severe Accident Management Team.

Duties:

- 1) Forecast future values of EOP and SAG control parameters (parameter trending).
- 2) Recommend appropriate EOP/SAG actions to follow based on trends, indications, or calculations.

F.9 Technical Support Manager (TSM)

The TSM is responsible for coordinating the need for engineering design changes and plant modifications as well as any engineering support requested by the TSC.

Duties:

- 1) Receives directions from and reports results to the ERM.
- 2) Conducts emergency response callout for the engineering support personnel as needed.
- 3) Make recommendations concerning event mitigation.
- 4) Coordinates support activities with the TSTL in the TSC.

F.10. This designator is no longer usedF.11 This designator is no longer used9.7 G. PUBLIC INFORMATIONG.1 Company Spokesperson (CS)

The CS is a senior management representative responsible for representing PSEG Nuclear LLC in news media briefings.

Duties:

- 1) Act as official Company Spokesperson.
- 2) Counsel PSEG top corporate management on status of accident and Emergency News Center briefings.
- 3) Give direction to Lead Technical Advisor, ENC Manager, and Staff Writers.

- 4) Upon ENC activation, review and approve News Bulletins and other releases to the media.
- 5) Supervise rewriting of News Bulletins and other media information into format for rumor control operations and Muskrat Information Line for employee call-in.

G.2 Emergency News Center Manager (ENCM)

The ENCM is responsible for the overall operation of the ENC including the dissemination of information and media monitoring.

Duties:

- 1) Coordinate the dissemination of media information from the ENC.
- 2) Approve News Bulletins when directed by CS or if CS is unavailable.
- 3) Ensure information is coordinated with and disseminated to County, State, and Federal representatives at the ENC before it is released to the media.
- 4) Coordinate media briefings with PSEG Nuclear, industry, County, State and Federal representatives.
- 5) Ensure approved ENC News Bulletins and other media releases are distributed to PSEG corporate offices, co-owners, and the industry.
- 6) Provide information to Media Information Line operators for dissemination to news outlets.
- 7) Direct activities of the Industry/Government Affairs Coordinator, Rumor Control Coordinator, and Operations Supervisor.

G.3 This designator is no longer used

G.4 This designator is no longer used

G.5 Industry/Government Affairs Coordinator

The Industry/Government Affairs Coordinator (IGAC) is responsible for maintaining contact with industry group representatives, PSEG Government/Federal Affairs Departments, Lower Alloways Creek Township, County and State officials to provide them information about the emergency. The IGAC reports to the ENC Manager.

Duties:

- 1) Establish contact with the co-owners and Board of Regulatory Commissioners to inform them of the emergency event and keep them updated on changes in status.
- 2) Advise Institute of Nuclear Power Operations (INPO) and Nuclear Energy Institute (NEI) [formerly United States Council on Energy Awareness (USCEA)] on the status of the emergency.
- 3) Update General Manager - Federal Affairs or designee on emergency status.
- 4) Update General Manager - State Governmental Affairs on emergency status.
- 5) Update LAC Township's Liaison about emergency event.

G.6 Rumor Control Coordinator (RCC)

The RCC is responsible for coordinating the media monitoring effort and dissemination of information about the emergency using the Company's Rumor Control Network.

Duties:

- 1) Activate PSEG's rumor control lines.
- 2) Provide Media Monitors, Media Line Operators and Rumor Control Centers with updated News Bulletins and other approved information about the emergency.
- 3) Update wire services as News Bulletins are issued.

G.7.A This designator is no longer usedG.7.B Media Monitors

Media Monitors are responsible for reviewing media reports for accuracy and reporting discrepancies and misinformation to the Rumor Control Coordinator.

Duties:

- 1) Review and record radio and television news programs and bulletins related to the emergency.
- 2) Inform Rumor Control Coordinator of incorrect or misleading television and radio accounts of the emergency.
- 3) Clarify incorrect or misleading information with television and radio stations when directed.

G.8.A Staff Writer - DutyG.8.B Staff Writer - Support

The staff writer is responsible for composing News Bulletins and other information for the media about plant conditions and emergency response activities.

Duties:

- 1) Write News Bulletins and prepare other information for the media.
- 2) Provide News Bulletins to the Company Spokesperson for review and approval.

G.9.A This designator is no longer usedG.9.B Media Information Line Operator

The Media Information Line Operator is responsible for operating Media Information Telephone Bank and ensuring the media is provided with timely and accurate information about the emergency.

Duties:

- 1) Provide the media with News Bulletins and other approved information.
- 2) Refer State-related inquiries to appropriate State information sources.

G.10.A Lead Technical Advisor (LTA)

The LTA is responsible for maintaining contact with TSC and EOF to track status of emergency event and provide information to the Company Spokesperson and ENC staff.

Duties:

- 1) Direct activities of other Technical Advisors at the ENC.
- 2) Report directly to the Company Spokesperson.
- 3) Provide technical briefings to the ENC staff and others as directed by the Company Spokesperson.
- 4) Receive information from the EOF facility or leads briefing.

G.10.B Media Technical Advisor (MTA)

The MTA is responsible for providing the media with general technical information about Hope Creek and Salem Nuclear Generating Stations and the nuclear industry.

Duties:

- 1) Obtain News Bulletins and technical details of the emergency.
- 2) Provide media at ENC with Press Kits and other approved information about the emergency event.
- 3) Interface with media at ENC on plant-related questions and provide general technical information.

G.10.C Communications Technical Advisor (CTA)

The CTA is responsible for keeping the Staff Writer and other ENC staff informed about the emergency event and providing understandable technical information.

Duties:

- 1) Obtain current and accurate information about the emergency event.
- 2) Update the ENC staff on plant status and the emergency event.
- 3) Report to the TSC if directed to do so by the LTA and provide timely and accurate information about the emergency event to the ENC.
- 4) When the EOF is activated and the PIL is functioning, report to the ENC and receive further direction from the LTA.

G.11 ENC Operation Supervisor (ENCOS)

The ENCOS is responsible for directing Administrative Operations in the ENC and reports to the ENC Manager.

Duties:

- 1) Supervise setup of the ENC and ensure proper operation of equipment.
- 2) Direct Administrative Support Staff members, Audio-Visual Services Coordinator, and facility support functions. Direct facility access control if Sheriff's deputies are not available.
- 3) Provide facility support functions such as access control, food, first aid, augmented staffing and equipment needs, and relief staffing.

G.12 This designator is no longer used

G.13 Public Information Liaison (PIL)

Obtain timely and accurate information at the EOF and transmit it to the ENC.

Duties:

- 1) Provide timely and accurate information about the emergency event to the ENC.
- 2) Respond to requests for information from the ENC via the Communications Technical Advisor.

G.14 Public Information Manager (PIM)

The PIM is the on-call staff member of Nuclear Communications who is responsible for representing PSEG as the Company Spokesperson until activation of the ENC. The PIM has the authority to release information provided by the Emergency Coordinator concerning any event at Salem and Hope Creek Nuclear Generating Stations that may be of interest to the media and the public.

Duties:

- 1) On-call to receive notifications of emergency and non-emergency events that are of potential interest to the media and the public in accordance with the Event Classification Guides (ECG) from the SM/EDO and other approved sources.
- 2) Write and issue News Bulletins based on information provided by the Emergency Coordinator and other approved sources.
- 3) Turnover duties to Company Spokesperson at ENC when the ENC is activated.

9.8 H. This designator is no longer used

9.9 I. SITE ACCESS CONTROL AND ACCOUNTABILITY

I.1 Security Liaison (TSC)/Security Operations Supervisor
Main Guard House (MGH)

The Security Liaison reports to the EDO. The Security Liaison is responsible for coordinating aspects of site evacuation and personnel accountability. The Security Operations Supervisor works for the Security Liaison and coordinate site evacuation and personnel accountability activities at the MGH.

Duties:

- 1) Verify accountability is established.
- 2) Assist in the coordination and control of site evacuation.
- 3) Maintain personnel entry log at the TSC.
- 4) Provide emergency vehicle support.

I.2 Site Security Coordinator (SSC)

The SSC reports to the EDO. The SSC is responsible for overseeing all security operations during an emergency including site evacuation and personnel accountability.

Duties:

- 1) Provide overall control and direction for all site security operations.
- 2) Verify personnel accountability is implemented as directed.
- 3) Oversee coordination and control of site evacuation.

I.3 This designator is no longer used
I.4 Security Force Member

The Security Force Member reports to the Site Support Manager. The Security Force Member is responsible for the proper establishment and maintenance of access control.

Duties:

- 1) Maintain access control at the EOF.
- 2) Assist in personnel accountability.
- 3) Open the EOF.

I.5 EOF Communicator (EOF COMM1/COMM2)

The EOF COMM1/COMM2 report to the SSM/ERM at the EOF and, at the direction of the SSM/ERM, are responsible for making official notifications, and obtaining and transmitting data.

Duties:

- 1) Make required notifications.
- 2) Obtain operational and radiological data.
- 3) Transmit data when required.

I.5.A EOF OPS Advisor

Obtain operational data and advise the SSM on the operational condition of the affected unit.

9.10 J. ADMINISTRATIVE SUPPORTJ.1 Administrative Support Manager (ASM)

The ASM reports to the ERM, and provides administrative support for the emergency response effort.

Duties:

- 1) Provides general office support functions including typing, reproduction, office supplies, and office furniture.
- 2) Functions as the EOF purchasing agent.
- 3) Administers the petty cash fund and expense accounts.
- 4) Coordinates personnel and equipment requests from the ERM and the other support managers.
- 5) Performs administrative support organization callout.

J.02.A Admin Support Staff - Personnel Supv.

J.02.B Admin Support Staff - Purchasing

J.02.C This designator is no longer used

J.02.D Admin Support Staff – Administrative

J.02.E Admin Support Staff – Information Technology Support Supervisor.

Coordinate Administrative Support activities as identified by the designated discipline and advise ASM of your activities.

Duties:

- 1) Provide support related to personnel matters including personnel callouts.
- 2) Provide purchasing support required during an emergency.
- 3) Provide material control support during an emergency.
- 4) Provide administrative/clerical support.
- 5) Provide Information Technology support.
- 6) Assist in EOF setup and activation.

J.03 Administrative Support Supervisor (ADMSS)

The ADMSS is responsible for providing administrative support to the EDO and has the authority to arrange for procurement of the necessary materials or personnel.

Duties:

- 1) Supervise administrative functions in the TSC.
- 2) Coordinates activities with the ASM.
- 3) Maintains records of purchases.

J.04 TSC Administrative Staff

The TSC Administrative staff reports to the ADMSS and provides administrative support to the TSC/OSC.

J.04.A This designator is no longer used

J.05 ENC Administrative Support

The ENC Administrative Support staff reports to the ENC Operations Supervisor and provides administrative support to the ENC staff.

J.06 Audio/Visual Services Coordinator

Provide audio/visual support to the ENC staff.

Duties:

- 1) Videotape media briefings.
- 2) Create/provide visual aids as requested by the ENC staff.

Z.03 Delaware Offsite Representative (not on organization chart)

Duties:

- 1) Keep Delaware officials up-to-date on emergency status
- 2) Provide technical and emergency classification assistance.

10.0 Staffing Commitments

The commitment for minimum staffing will be in accordance with Supplement 1 to NUREG-0737, Table 2.

Table 3-2 provides a correlation between major functional areas, major tasks, position title or expertise, as described in Table 2 of Supplement 1, NUREG-0737, and the similar tasks and titles in the emergency response organization. The alphanumeric codes that appear with staffing capability goals represent the emergency response organization positions used in this section of the plan. Facility activation goals/response times are described in Section 9, Emergency Facilities and Equipment.

Table 3-1

**LINE OF SUCCESSION
EMERGENCY COORDINATOR DUTIES**

<u>Duty Position</u>	<u>Personnel Assigned Duty Position</u>	<u>Classification Requiring Activation of Emergency Coordinator Function</u>			
		<u>UE</u>	<u>A</u>	<u>SAE</u>	<u>GE</u>
SM	SM is a normal shift duty assignment per station technical specification	X	X	X	X
EDO	Operations Manager or designee	X ⁽¹⁾	X	X	X
ERM	Filled by PSEG Nuclear Department Senior Management Personnel		X ⁽²⁾	X	X

NOTES:

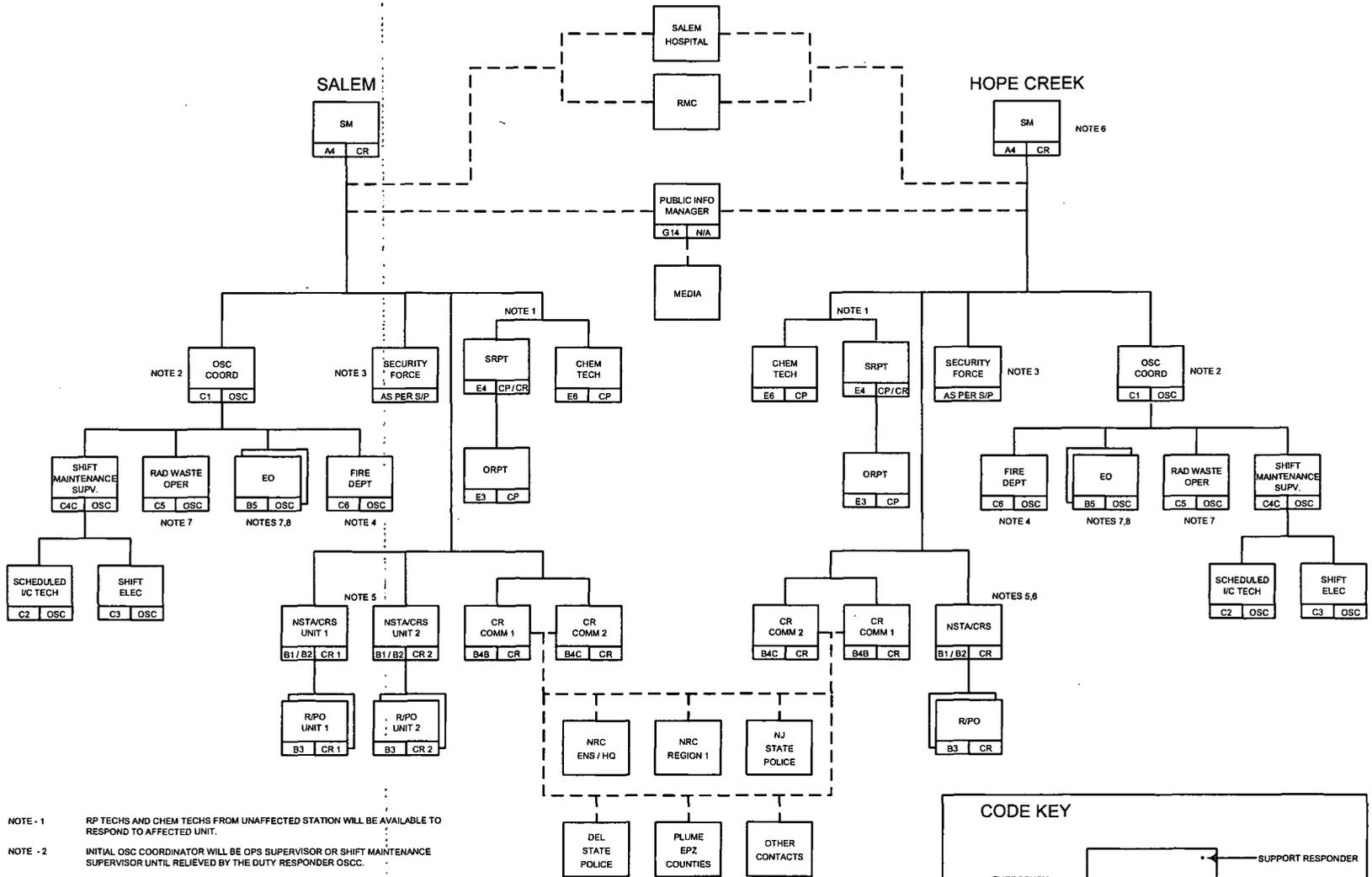
- 1) The EDO is contacted for all events classified as an Unusual Event or higher. The EDO may or may not respond to the Emergency Coordinator function of this level event. This response would be based on the conditions of the incident.
- 2) The ERM is contacted for all events classified as an Alert or higher. The ERM may or may not respond to the Emergency Coordinator function of this level event. This response would be based on the conditions of the incident.

**TABLE 3-2
PSEG NUCLEAR
CORRELATION TO SUPPLEMENT 1 OF NUREG-0737 TABLE 2
(NUREG-0654, TABLE B-1) (Note 2)**

(NUREG-0654, TABLE B-1) Major Functional Area	Major Tasks	Position Title or Expertise	On* Shift (Note 1)	Capabilities for Additions 90 min
Plant Operations and Assessment of Operational Aspects		Shift Manager (SM) (SRO) Control Room Supervisor (CRS) (SRO) Reactor/Plant Operator (RO/PO) Nuclear Equipment Operator (NEO)	1 A4 1 B2 2 B3 2 B5 (Note 8)	
Emergency Direction and Control (Emergency Coordinator)		Shift Manager (SM)(SRO)	1**A4	
Notification/Communication	Notify Licensee, State, Local and Federal personnel and maintain communication	Control Room Communicator TSC & EOF Communicators	2 B4	2F8&215 (TSC & EOF Communicators)
Radiological Accident Assessment and Support of Operational Accident Assessment	Near-site EOF-Manager Offsite Dose Assessment Offsite Surveys Onsite (out-of-plant) In-plant Surveys Chem/Radio-chemistry	Emergency Response Manager (ERM)*** Shift RP Tech (SRPT)/RP Supervisor-Offsite Technician (RPT) Technician (RPT) Technician (RPT) Technician (CT)	1 E4 (Note 3) (Note 9) 1 E3 (Note 5) 1 E6 (Note 5) 2 E3 (Note 5) 1 E6	1 A1 (Emergency Response Manager) 4 D4 (Offsite Monitors/Drivers) 1E2A (RPS Offsite) 1E1 (Unaffected Stations RAC) 1E5 (Chemistry Supervisor)

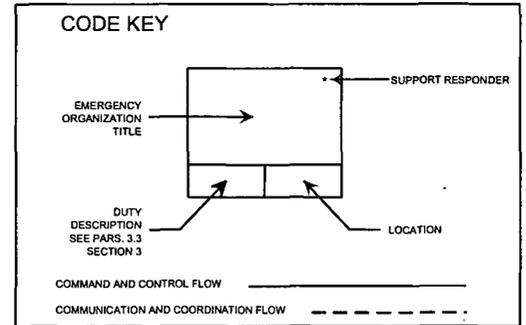
TABLE 3-2 (cont.)
PSEG NUCLEAR
CORRELATION TO SUPPLEMENT 1 OF NUREG-0737 TABLE 2
(NUREG-0654, TABLE B-1) (Note 2)

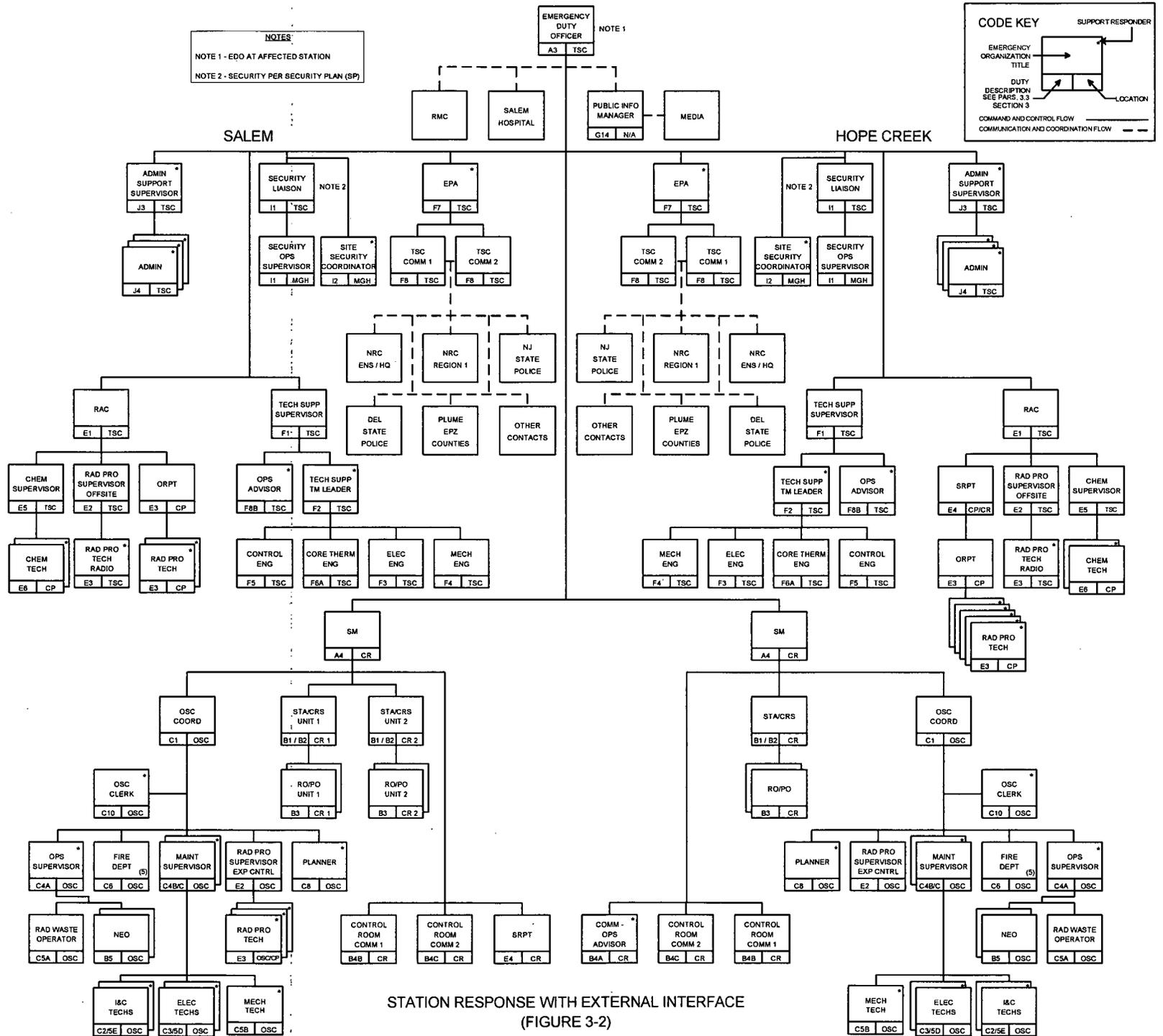
Major Functional Area	Major Tasks	Position Title or Expertise	On* Shift (Note 1)	Capabilities for Additions 90 min
Plant System Engineering, Repair and Corrective Actions	Technical Support Repair and Corrective Actions	Shift Technical Advisor (STA) Core/Thermal Hydraulics Electrical Mechanical Mechanical Maintenance/ Rad Waste Operation Electrical Maintenance/ Instrument and Control	1 B1 (Note 4 & 6) 1 C4C 1**C5A (Note 8) 1 C5A 1C3** 1 C2 1 C3 1 C2 (Note 5) 1 C3 (Note 5)	1 F6A (CTH Engineer) 1 F3 (Electrical Engineer) 1 F4 (Mech Engineer)
Protective Actions (In-plant)	Radiation Protection a. Access Control b. HP coverage for repair, corrective actions, search and rescue, first aid, and fire fighting. c. Personnel monitoring d. Dosimetry	Technician (RPT)	2**E3 (Note 5) 2 (Note 7)	2 E2B (Both Stations) (RPS – Exposure Control)
Fire Fighting Rescue Operations and First Aid			5 C6 (Fire Brigade per Tech. Spec.) 2** C6	Local Support Local Support

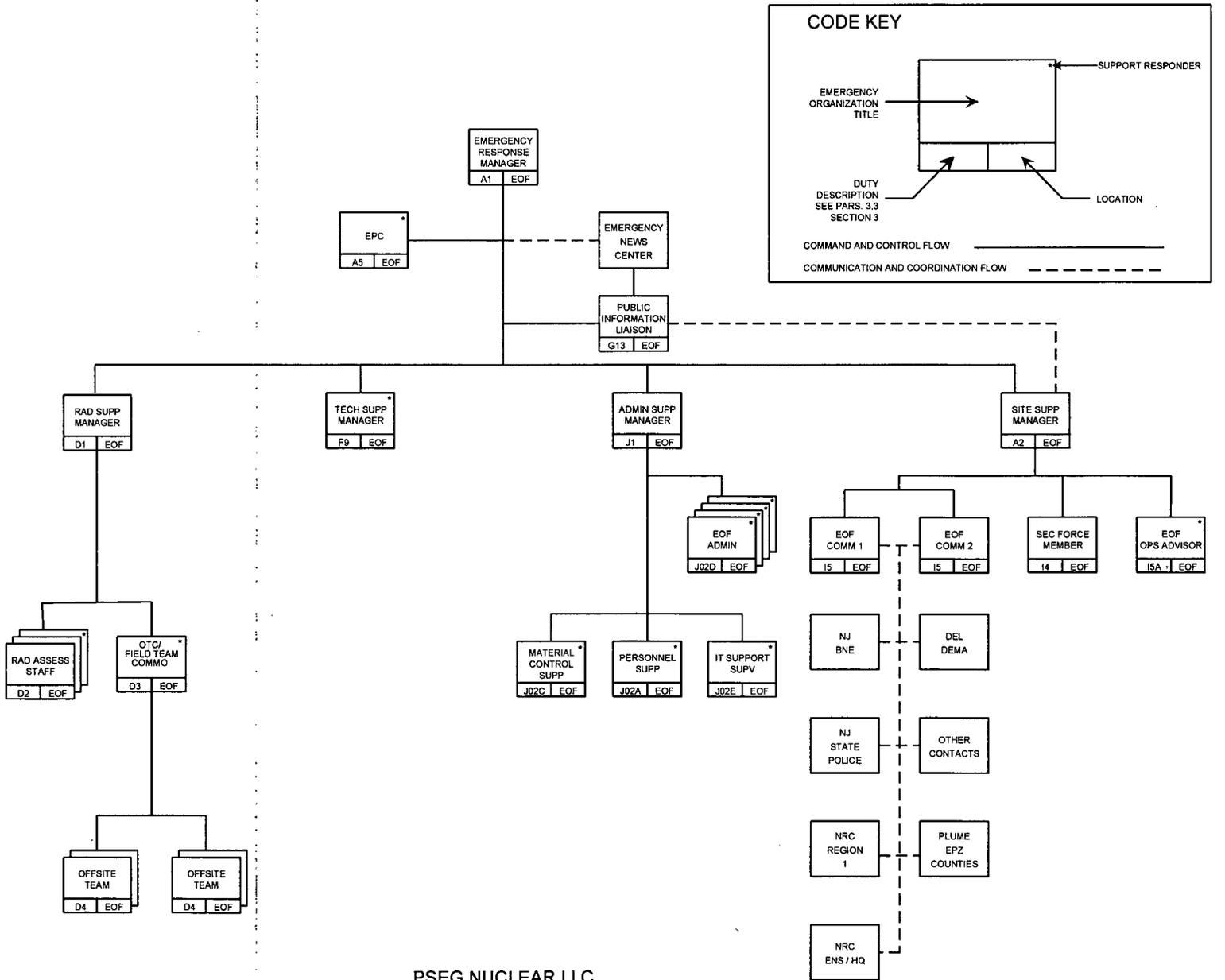


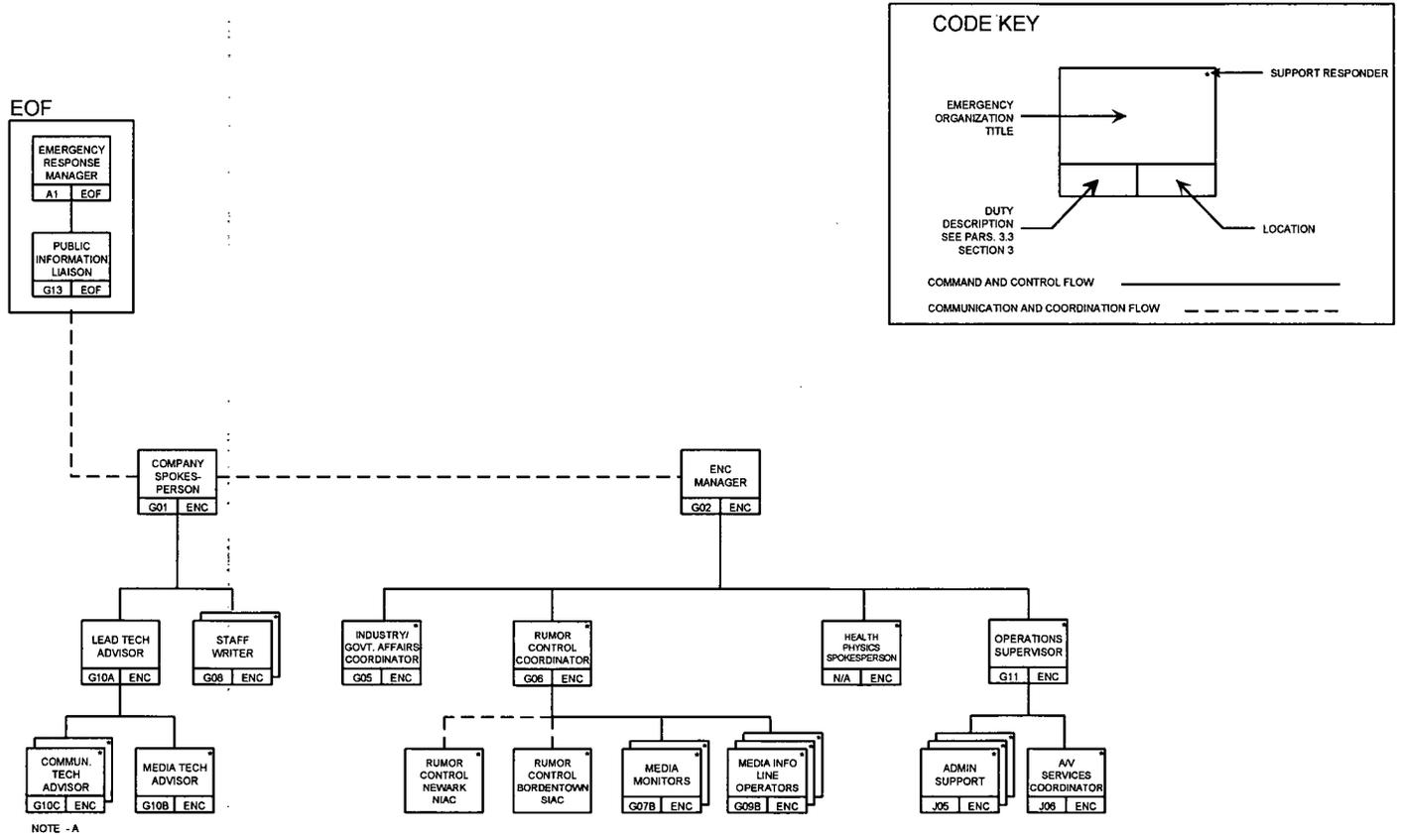
- NOTE - 1 RP TECHS AND CHEM TECHS FROM UNAFFECTED STATION WILL BE AVAILABLE TO RESPOND TO AFFECTED UNIT.
- NOTE - 2 INITIAL OSC COORDINATOR WILL BE OPS SUPERVISOR OR SHIFT MAINTENANCE SUPERVISOR UNTIL RELIEVED BY THE DUTY RESPONDER OSC.
- NOTE - 3 SECURITY FORCE AS SPECIFIED IN SECURITY PLAN (S/P).
- NOTE - 4 FIRE DEPARTMENT AS SPECIFIED IN TECH SPECS.
- NOTE - 5 STA STAFFING PER TECHNICAL SPECIFICATIONS.
- NOTE - 6 NSTA/SM OR NSTA/CRS CAN BE THE SAME INDIVIDUAL AT HOPE CREEK AND AN ADDITIONAL SRO WILL FILL THE ROLE OF "INCIDENT ASSESSOR."
- NOTE - 7 INITIAL RADWASTE OPERATOR MAY BE ONE EO OF THE TWO ASSIGNED TO THE OSC UNTIL RELIEVED BY OSC AUGMENTATION STAFF.
- NOTE - 8 EO ASSIGNED TO OSC CANNOT CONCURRENTLY BE ASSIGNED AS CONTROL ROOM COMMUNICATOR.

PSEG NUCLEAR LLC
ON SHIFT STAFFING
EMERGENCY
RESPONSE
ORGANIZATION
(FIGURE 3-1)









NOTE - A

NOTE - A A SECOND COMMUNICATION TECH ADVISOR MAY BE SENT TO THE TSC TO GATHER INFORMATION AT THE DISCRETION OF THE LEAD TECHNICAL ADVISOR.

PSEG NUCLEAR LLC
EMERGENCY NEWS CENTER ORGANIZATION
WITH EXTERNAL INTERFACE
(FIGURE 3-4)

Proposed Revision for E-Plan Change package

SECTION 9**EMERGENCY FACILITIES AND EQUIPMENT****1.0 PSEG Nuclear LLC - Emergency Facilities and Equipment**

Emergency facilities and equipment are maintained for the PSEG Nuclear LLC both on and offsite. Equipment specifically for monitoring and assessment of operational, radiological, geophysical events, and similar instrumentation is described in Section 10, Accident Assessment. The Emergency Operations Facility and Emergency News Center are offsite facilities that serve the PSEG Nuclear LLC.

Although onsite facilities are described separately in paragraph sections 2.0 and 3.0, to reflect station specifics, they have common functions, and fulfill the same organizational and operational commitments.

1.1 Control Rooms

Control Rooms continue their control functions during emergency response. Additional classification and notification responsibilities are met from the control room until other emergency facilities are activated. The emergency equipment and communications support that are available to each control room are shown in Tables 9-1 and 7-1. The specific features of major communications systems are described in Section 7, Emergency Communications.

1.2 Operations Support Centers

Operations Support Centers (OSC) function as information relay stations, dispatching offices, assembly and assignment points, and also as accountability stations for teams assigned from the OSC. Emergency equipment and communication systems that are available to the OSC are presented in Table 9-1 and Table 7-1, respectively. Specific features of the communications systems are described in Section 7, Emergency Communications.

1.3 Technical Support Centers

The Technical Support Centers (TSCs) also have common functions and similar equipment and support. The TSC provides a well equipped location onsite to support plant management during an emergency. The TSC functions as an augmented communication/analysis center of technical data to supplement the Control Room staff's technical analysis and to support plant operations personnel.

Proposed Revision for E-Plan Change package

The TSC is used by members of the emergency response organization to relieve control room operators of (and remove from the control room) any plant specific duties not directly related to the direct handling of plant controls. Such duties include directing analysis and assessment of the emergency conditions and performing functions associated with the Emergency Operations Facility, when that is not activated.

The TSC is activated for Alert, Site Area Emergency, or General Emergency action levels. The TSC is used as the assembly point for utility personnel, onsite vendor support, NRC, or for the personnel who are directly involved in assessment of an accident and mitigation.

The TSC emergency response facility can be staffed and activated within 90 minutes of an Alert or higher emergency classification. This staffing and activation time could vary if severe weather conditions or acts of nature/terrorism were experienced at the same time as the ERO callout.

The Emergency Duty Officer (EDO) determines when the TSC is staffed based on manning requirements as identified in the PSEG Nuclear LLC Emergency Organization Chart. The EDO's discretion may be used to declare the TSC activated with less than the staffing required in the organization chart based on extenuating circumstances and plant conditions. Efforts to staff all required positions shall continue until the positions are filled or the emergency is terminated.

Emergency equipment and communications support that are available to the TSC are presented in Table 9-1 and Table 7-1, respectively. The specific features of the communications systems are described in Section 7, Emergency Communications.

1.4 Emergency Vehicles

An ambulance is available to transport injured or contaminated-injured personnel to Memorial Hospital of Salem County or another facility.

2.0 Onsite Emergency Facilities and Equipment - Salem

Emergency facilities and equipment were developed to meet the intent of NUREG-0737, Supplement 1, except as indicated.

2.1 Control Room Area

The Salem Control Rooms have been designed to meet the

Proposed Revision for E-Plan Change package

habitability requirements of the General Design Criteria 19 and Standard Review Plan Section 6.4. The emergency equipment provided in the Control Rooms and Operations Support Center is shown in Table 9-1.

2.2 Operations Support Center (OSC)

The Salem Operations Support Center (OSC) is located in the Operations conference room adjacent to the Control Room. In the event of an emergency, operations personnel not on duty and other support personnel report to the OSC to form repair and corrective action teams. Additionally, an OSC Coordinator is designated to coordinate the teams' efforts. The Salem TSC will serve as a backup OSC if required.

2.3 Technical Support Center (TSC)

The Salem Technical Support Center (TSC) is located on the third floor of the Clean Facilities (B) Building isolated from the containment building. The TSC meets all habitability requirements outlined in NUREG-0737, Supplement 1. This center supplies technical support to the operations personnel in the Control Room area.

The analytical and assessment capabilities assigned to the Salem TSC include:

- Safety Parameter Display System (SPDS)
- Computerized Dose Assessment
- Plant Engineering Support

Documentation available within the TSC supports emergency classification, procedures, and assessments. Document groups include:

- Emergency Plans and Procedures
- Operating Procedures (Emergency and Normal)
- Departmental Support Documents
- Technical Specifications
- Engineering Support Material
- Updated Final Safety Analysis Report
- Technical Drawings

The Salem TSC is in proximity to the Technical Document Room (TDR), and has the capability to retrieve plant-specific documents or drawing groups as well as applicable codes, standards, and regulations utilizing the Document Control Records Management System (DCRMS). TDR has DCRMS work stations and printer available for use. The TSC Ventilation System services the TDR. The TSC

Proposed Revision for E-Plan Change package

is convenient to other support facilities within the B Building. Detailed information on the TSC can be obtained by reviewing the "Salem TSC Configuration Baseline Documentation" [DE-CB.BBD-0012 (Z)].

2.4 Control Point (CP)

During normal operations, this area serves Salem as the access control point for personnel entering or leaving the Radiological Controlled Area. The emergency equipment provided at this location is shown in Table 9-1. Communications equipment is described in Section 7, Emergency Communications.

3.0 Onsite Emergency Facilities and Equipment - Hope Creek

Emergency facilities and equipment were developed to meet the intent of NUREG-0737, Supplement 1, except as indicated.

3.1 Control Room Area

The HCGS Control Room (CR) areas have been designed to meet the applicable habitability requirements. Typical emergency equipment in the Control Room area and Operations Support Center (OSC) is shown in Table 9-1.

3.2 Operations Support Center (OSC)

The Operations Support Center (OSC) is located in the Outage Control Center adjacent to the Control Room. In the event of an emergency, operations personnel not on duty and other support personnel report to the OSC to form repair and corrective action teams. Additionally, an OSC Coordinator is designated to coordinate the teams' efforts. The office space above the Hope Creek TSC will serve as a back up OSC, if required.

3.3 Technical Support Center (TSC)

The Hope Creek TSC is located on Elevation 132' in the reactor building, but isolated and shielded from the rest of the reactor building. The TSC meets all habitability requirements outlined in NUREG-0737, Supplement 1.

The analytical and assessment capabilities assigned to the TSC includes:

Radiological Monitoring System (RMS)
Control Room Integrated Display System (CRIDS)
Safety Parameter Display System (SPDS)

Proposed Revision for E-Plan Change package

Computerized Dose Assessment
Plant Engineering Support
Documentation available within the TSC assists in a variety of analyses and assessments. Document groups include:

Emergency Plan Implementing Procedures.
Normal Operating Procedures.
(Emergency) Abnormal Operating Procedures.
Plant Technical Specifications.
Updated Final Safety Analysis Report.
Selected Vendor Manuals.
Technical Drawings.

Additional documentation is immediately available in the Technical Document Room.

The TSC is located within the protected area convenient to the Control Room, Operations Support Center and Control Point and is a dedicated emergency response Facility. Access is controlled through single entry access. Other entries and exits are maintained locked.

Habitability is controlled to meet the same habitability standards as required in the Control Room. The heating, ventilating, and air conditioning (HVAC) systems include the use of high efficiency particulate absorber (HEPA) and charcoal filtration, which prolongs habitability should inplant conditions degrade.

Sufficient monitoring and protective equipment is kept in a secured area, the Radiation Protection Locker, of the TSC and available to the TSC staff.

3.4 Control Point (CP)

During normal operation, this area is located at the 137' elevation and serves as the regular Access Control Point for personnel entering or leaving the Radiological Controlled Area. Emergency equipment is provided at the Control Point and is listed in Table 9-1.

4.0 Offsite Emergency Facilities and Equipment

4.1 Emergency Operations Facility - General Description

The Emergency Operations Facility (EOF) is controlled and operated by PSEG Nuclear LLC. It serves as the near site support center to form management of the aggregate response to a radiological emergency as defined by

Proposed Revision for E-Plan Change package

NUREG-0654, Revision 1, and Appendix 1. PSEG NUCLEAR commits to operating the EOF so as to fulfill the functional requirements of paragraph 4.1 of NUREG0737, Supplement 1. It should be noted that based on the backup EOF exemption granted for the Salem Generation Station Plan, and the fact that the location of Salem and Hope Creek Generating Stations is treated as a single site, the exemption is applicable to all EOF requirements for Salem and Hope Creek Generating Stations.

The EOF provides facilities and equipment to support staff performance of four major functions:

1. Management of overall emergency response activities.
2. Coordination of radiological and environmental assessment.
3. Development of recommendations for protective actions for the public.
4. Coordination of emergency response operations with Federal, state, and local agencies in accordance with the Emergency Plan.

The communications systems available at the EOF are presented in Table 7-1. Specific features of those systems are described in Section 7, Emergency Communications.

The EOF emergency response facility can be staffed and activated or ready to activate, within 90 minutes of an Alert or higher emergency classification. This staffing and activation time could vary if severe weather conditions or acts of nature/terrorism were experienced at the same time as the ERO callout.

Activation and use of the Emergency Operations Facility is at the option of PSEG Nuclear LLC at the Alert emergency classification. The option is exercised depending upon management's evaluation of the potential consequences of the situation based upon the nature of initiating conditions, trends subsequently perceived, and results of actions taken to mitigate potential consequences. EOF activation is mandatory in the event of declaration of a Site Area Emergency or General Emergency.

An individual who is designated as the Emergency Response Manager (ERM) manages the activated EOF. The ERM directs PSEG Nuclear LLC's offsite response activities and coordinates actions with and provides appropriate support to the Technical Support Center (Emergency Duty Officer). The EOF is staffed by PSEG Nuclear LLC and other (Federal, state, and support personnel, as required) emergency personnel designated by the PSEG Nuclear LLC Emergency Plan.

Proposed Revision for E-Plan Change package

The ERM determines when the EOF is fully staffed based on manning requirements as identified in the PSEG Nuclear LLC Emergency Organization Chart. The ERM's discretion may be used to declare the EOF activated with less than the staffing required in the organization chart based on extenuating circumstances and plant conditions. Efforts to staff all required positions shall continue until the positions are filled or the emergency is terminated.

Equipment is provided in the EOF for acquisition, recording, display and evaluation of containment and operational conditions, radiological releases, and meteorological data. The data is analyzed and evaluated to determine the nature and scope of any protective measures, which may be recommended to state and local officials for protection of the public health and safety, if the magnitude and potential effects of a radioactive release dictate. The equipment includes a display of information collected by the Radiological Monitoring System (RMS). All equipment, displays, and instrumentation to be used to perform essential EOF functions are located in the EOF.

Facilities are provided in the EOF for NRC, FEMA, New Jersey, Delaware and local emergency response agency personnel responsible for implementing emergency response actions for protection of the general public. This arrangement enhances coordination of activities and exchange of information among participating agencies and the PSEG Nuclear LLC emergency response organization. The agencies also operate from other offsite control centers located at their respective agency facilities.

To ensure EOF activation readiness, PSEG Nuclear LLC provides normal industrial security for the EOF complex including lock and key control, a personnel identification system, exterior lighting, and a perimeter security system providing offsite alarm notification and response by local police department. If the EOF is activated, access to the building and facility is restricted to authorized personnel by the industrial security system.

4.2 Location, Structure, and Habitability

The Emergency Operations Facility is located in PSEG Nuclear LLC Training Center on Chestnut Street in Salem, New Jersey. This site is located 7.5 miles from the Technical Support Center. The site location is judged to provide operational and logistical benefits with regard to its relationship to the areas transportation system. Salem is at the intersection of the two state highways (Routes 45 and 49). Three county highways, Routes 557, 540, and 581, connect to Routes 45 and 49.

Proposed Revision for E-Plan Change package

A freight only railroad and an airfield serve the city of Salem capable of accommodating small commercial aircraft. In addition, the Nuclear Training Center has a helicopter-landing pad. There is also a landing pad located just outside of the Protected Area. This makes possible rapid movement of personnel between the station and the EOF.

This transportation network makes the EOF readily accessible by road and air to designated personnel of all agencies and activities assigned an emergency response role by the emergency plan.

The physical structure of the facility has been well engineered for the design life of the plant. The building is a 65,000 square foot structure on reinforced concrete footings and floor slab, with supporting steel columns, beams, and joists. The built up roofing material is supported on a steel deck.

The EOF conforms to all applicable building codes and has been designed to withstand winds and floods with 100 year recurrence frequency. The State of New Jersey Department of Environmental Protection identifies the 10 year and 100 year high water levels at the EOF site as 7.1 feet and 8.9 feet above mean sea level, respectively. The floor elevation of the EOF is 9.0 feet. The elevation of the road to the EOF is slightly over 4 feet. Thus, record high water levels would flood the access road and preclude access to the EOF by vehicle and could hamper activities of mobile monitoring teams in some areas. The EOF would continue to be accessible by helicopter. Internal EOF operations would continue without adverse impact.

The SGS Final Safety Analysis Report, Environmental Report, Operating License Stage, Appendix B Report, Site environmental studies, identifies high winds with a 100-year recurrence frequency as having a maximum velocity of 100 miles per hour. It is not anticipated that such winds will significantly affect self contained internal EOF operations. This is due to the strength of building construction and the availability of backup power.

However, activities of mobile monitoring teams would have to be suspended. Under such conditions, radiation exposures would be correspondingly low. Remote monitoring would continue to be available to the extent transmission lines survive. Similarly, data transmission could be adversely impacted by damage to microwave and radio antennae and transmission lines, particularly if winds were accompanied by electrical storms, which are often associated with squall lines, tornadoes and hurricanes. Under such circumstances, atmospheric conditions could be expected to intermittently affect data transmission and communications.

Proposed Revision for E-Plan Change package

Protective clothing is maintained at the EOF, in accordance with the emergency plan. In addition, mutual support agreements with other utilities in the region include providing emergency equipment, including radiation survey devices and protective clothing. Potassium iodide for the staff is also stored in the EOF emergency equipment locker.

Additional supplies are available from Radiation Management Corporation, Philadelphia, Pennsylvania or other approved vendors. A description of the methodology to determine airborne I-131 concentrations is presented in Section 10 of the Emergency Plan. Detection limits for I-131 are less than 1E-7 uci/cc if not masked by noble gases. Masking is not expected to be a factor due to use of silver zeolite filter cartridges and adequate purge times in sample collections.

Full face respirators with charcoal filters are maintained in the EOF. However, airborne contamination is not expected to present a major problem at the EOF due to its location and the upgraded ventilation system.

4.3 Size

The EOF meets or exceeds the space requirements of paragraph 8.4.1c of NUREG-0737, Supplement 1. Approximately 5240 square feet of floor space in the Nuclear Training Center is designated for use as the Emergency Operations Facility. This provides more than 75 square feet of workspace per person for a staff of up to 70 persons and 650 square feet for conference rooms.

Additional space is available in the building to accommodate another 100 persons in the unlikely event of a situation in which a greatly augmented staff would be required. Normal EOF occupancy by all concerned parties and agencies is not expected to exceed 80 persons.

The functional layout of the EOF depicts designated workspaces:

1. Space for EOF data system equipment for data transmission and reception (Data Center, Communications Center).
2. Space to repair, maintain and service equipment displays and instrumentation (in Nuclear Training Center workshops and labs).
3. Space to accommodate communications equipment and its use by EOF personnel to perform their assigned functions.
4. Space for ready access to functional displays of EOF data (Data Center, provisions for installation of remote terminal in the Dose Assessment Area).
5. Space for storage of plant records and historical data or space for the means to readily acquire and display the records.

Proposed Revision for E-Plan Change package

6. Space for emergency response activities.
7. Office space for state, local and FEMA personnel.
8. Separate office space to accommodate a minimum of ten NRC personnel during emergency activation of the EOF (NRC offices).

Personnel are assigned to work areas in functional groups.

Groups, which perform related tasks and therefore would have the most need for face to face interaction, are, in most cases, located adjacent to one another. Each workstation is assigned sufficient display space, equipped and staffed as appropriate to its function.

4.4 Radiological Monitoring

The EOF complies with the radiation protection provisions of paragraph 8.4.1B of NUREG-0737, Supplement 1 by providing radiological monitoring equipment in the facility. This equipment provides the capability to monitor airborne radioactivity (gross beta, gamma, iodine, and particulates) to ensure that EOF personnel are not subjected to adverse radiological conditions. Available equipment and a table in a Emergency Plan Implementing Procedure permits the detection of radioiodines at a concentration as low as $1.00E-07$ uCi/cc using a field counting methodology (A portable continuous air sampler collects iodine in a silver zeolite cartridge. The cartridge is then counted using a count rate meter. The corrected counts per minute value are then compared to a graph to find the iodine concentration).

The continuous air monitor sampler may be moved to various points in the facility, is equipped with a strip chart recorder, an alarm light, and an alarm bell. The alarm setting is variable and will be set slightly above background to give an early warning of adverse conditions, which may affect EOF habitability. In addition, the alarm light provides visual warning of radiation levels. The air sampler is maintained and calibrated on a regular schedule by station personnel.

More detailed counting analysis is available at the station (emergency situation permitting) or any other licensed facility (i.e. Peach Bottom, Limerick, etc.).

Survey meters are available, which have sensitivity ranges up to 50 R/hr. Additional EOF radiation monitoring equipment includes high and low range self reading dosimeters (or equivalent electronic dosimeters), TLDs, and air samplers. Radiation monitoring equipment is stored in the emergency equipment closet (Table 9-1). The radiological assessment staff performs habitability of the EOF, in accordance with procedure.

The Radiological Support Managers have a variety of radiological, health physics, and nuclear power plant experience.

Proposed Revision for E-Plan Change package

4.5 Instrumentation, Data System Equipment, and Power Supplies

The EOF complies with the provisions of paragraph 8.4 1G NUREG-0737, Supplement 1 by providing an EOF data system consisting of a Radiological Monitoring System, an operational parameter data information system, which provides plant variables to a computer system that displays data and is capable of being printed out.

The EOF data system performs its functions independently of personnel actions in the Control Room and the TSC and will not degrade or interfere with Control Room and plant functions.

Backup power is provided to ensure data system availability. Backup power is supplied by a diesel generator in conjunction with an automatic transfer switch, which activates the generator upon loss of power. The generator provides electrical output sufficient to supply all facility lighting, the telephone system and all EOF data and communications systems described in this document. Electrical equipment load in the EOF does not affect any safety related power source. The data system has been designed to preclude loss of any stored data vital to EOF functions due to power supply failure or circuit transient.

4.6 Technical Data and Data System

The comprehensive EOF technical data system is capable of reliable collection, storage, analysis, display, and communication of information on containment conditions, radiological releases, and meteorology sufficient to determine site and regional status, determine changes in status, forecast status and take appropriate actions. Variables from the following categories that are essential to EOF functions are available in the EOF.

- a. Appropriate variables from Table 1 of Regulatory Guide 1.97 (Rev. 2) and;
- b. The meteorological variables in Regulatory Guide 1.97 (Rev. 2) for site vicinity and regional data available via communication from the National Weather Service.

5.0 Emergency News Center

Emergency News Center (ENC) facilities are at the Salem County 911 Center. The ENC provides space for media briefings; media work area, and telephone access. Separate work areas are maintained for PSEG Nuclear LLC, NRC, State and County personnel. The facility is convenient to major highways. Designed for public use, the building has sufficient facilities to support use by 100 or more media personnel.

Proposed Revision for E-Plan Change package

If support for more than 100 media personnel is needed, PSEG Nuclear will coordinate the use of alternate media briefing locations with State and County officials. The communications equipment is described in Section 7 and summarized in Table 7-1. For media use, commercial telephone lines have been assigned from a physically distant exchange, which would reduce the load on local telephone services during an emergency.

Under appropriate circumstances, space for a limited number of press representatives may be made available at the EOF.

6.0 Additional Offsite Capabilities

6.1 Offsite Environmental Radiological Monitoring

Section 10, Accident Assessment presents a discussion of other assessment capabilities and instrumentation. The Stations are located on a man-made island, which, within four miles, is surrounded by tidal marshlands or river. The thermo luminescent dosimeter (TLD) points of the routine offsite environmental radiological monitoring program include TLDs in neighboring towns and cities and at schools and public assembly points, and at distances sufficiently close to the station to provide meaningful data in the event of an accident. No TLDs were deployed on marshlands where no serviceable roads existed. The Operational Radiological Monitoring program for the Station conforms to the NRC Radiological Assessment Branch Technical Position as described in Section 10 of the Emergency Plan.

6.2 Meteorological Monitoring

A meteorological program in accordance with the recommendation of NRC Regulatory Guide 1.23 "Onsite Meteorological Program" and Section 2.3.3 of NUREG-75/087 (Rev. 3) has been established. Monitoring and assessment capabilities are discussed in Section 10.

The dose calculation methodology of Section 10 of the Emergency Plan, concerning the transport and diffusion of gaseous effluents, is consistent with the characteristics of the Class A model outlines in NUREG-0654 (November 1980).

7.0 Field Assessment and Monitoring

The EOF, once activated, is the location for collection and assessment of all offsite radiological monitoring information from the survey teams. Periodically the information on doses calculated in accordance with Section 10 of the Plan is multiplied by the projected sector population data from Emergency Plan Attachment 11 to provide an estimated integrated dose to the affected population.

Proposed Revision for E-Plan Change package

8.0 Administration and Maintenance of Emergency Facilities and Equipment

The emergency equipment listed in Table 9-1 is inventoried and operationally checked quarterly, and after each use to allow for replacement in the event of normal servicing and calibration. The instrument calibration frequency has been established in accordance with the appropriate technical guidance.

Table 9-1 is a generic listing of typical equipment maintained both on and offsite. Detailed listings are part of emergency preparedness inventory procedures.

Proposed Revision for E-Plan Change package

**TABLE 9-1
EMERGENCY EQUIPMENT SUMMARY
(TYPICAL)
Page 1 of 2**

EQUIPMENT	CR/OSC	CP/Salem Field Team Kit	TSC/Hope Creek Field Team Kit	EOF/Field Team Kit
RO2A Survey Instrument *	L	L	L	E
RM14/EL14ON *	L	L	L	E
Teletector *	L	L	L	E
E520 Survey Instrument *	L	L	L	E
RO2 Survey Instrument *	L	L	L	E
High Range Dosimeters or Electronic Dosimeters *	L	L	L	E
Low Range Dosimeters or Electronic Dosimeters *	L	L	L	E
Dosimeter Charger (not needed for Electronic Dosimeters)	A	L	L	N/A
Air Sampler (A/S)	L	L	L	E
DC Powered A/S	A	A	A	N/A
Marinelli Beaker with A/S Head	A	L	N/A	N/A
Charcoal Cartridges for A/S	L	L	L	E
Silver Zeolite Cartridges for A/S (Sealed)	L	L	L	E
Particulate Filter Papers for A/S	L	L	L	E
Envelops for Particulate A/S	L	L	L	E
Flashlights with Batteries	L	L	A	E
Spare Batteries (replacement set for each instrument)	L	L	L	E
Sample Containers or Small Bags	L	L	L	E
Smears	L	L	L	E
Rad Info Signs	L	A	L	A
Barricade Rope or Ribbon and Stanchions	L	A	L	N/A
Tape	L	L	L	E

NOTES/LOCATION DESCRIPTIONS

- A = Accessible in general area of the Emergency Response Facility
- L = Located at Salem and Hope Creek Emergency Response Facilities
- E = Located in the EOF or EOF Field Team Kits
- N/A = Not applicable in that specific Emergency Response Facility
- * = or equivalent

Proposed Revision for E-Plan Change package

**TABLE 9-1
EMERGENCY EQUIPMENT SUMMARY
(TYPICAL)
Page 2 of 2**

EQUIPMENT	CR/OSC	CP/Salem Field Team Kit	TSC/Hope Creek Field Team Kit	EOF/Field Team Kit
Large Plastic Bags	L	L	L	E
Step-off Pads (SOP)	L	A	L	A
Paper or Cloth Coveralls	L	L	L	E
Shoe Covers	A	L	L	E
Rubber Gloves	A	L	L	E
Hoods and Caps	A	L	L	E
Respirators and Charcoal/Participate Cartridges	A	A	A	A
Emergency Plan Procedures (as applicable)	L	L	L	E
SCBAs	L	A	N/A	N/A
Check Sources (button) *	L	L	L	E
KI Tablets	L	L	L	E
Absorbent Material	N/A	L	L	E
Calculator/Computer	N/A	L	L	E
Dosimeters of Legal Record	L	A	L	E
Logs, Paper Supplies, Pens, Clip Boards, etc.	L	L	L	E
Plastic Sheeting	N/A	A	A	A
First Aid Kit	L	L	L	E

NOTES/LOCATION DESCRIPTIONS

A = Accessible in general area of the Emergency Response Facility

L = Located at Salem and Hope Creek Emergency Response Facilities

E = Located in the EOF or EOF Field Team Kits

N/A = Not applicable in that specific Emergency Response Facility

* = or equivalent

1. The Control Room/Operations Support Center (CR/OSC) area comprises adjacent hallways, lockers, and storage areas.
2. Control Point (CP) comprises adjacent and accessible area including lockers, equipment issue areas, and dress out areas.
3. Technical Support Centers (TSC) are dedicated facilities.
4. Emergency Operations Facility (EOF) includes the adjacent meeting rooms and Room 50.
5. The EOF Field Team Kits describes materials reserved for Field Monitoring.

SER Approved E-Plan Revisions and More

Contents of Attachment 5:

- Hope Creek Emergency Plan, Section 3.0, Revision 8, Organization, Effective October 1985.
- Hope Creek Emergency Plan, Section 9.0, Revision 8, Emergency Facilities and Equipment, Effective October 1985.
- Artificial Island Emergency Plan, Section 3.0, Revision 0, Organization, Effective July 1987.
- Artificial Island Emergency Plan, Section 9.0, Revision 0, Emergency Facilities and Equipment, Effective July 1987.
- Hope Creek SER, Supplement 5, EP section only, April 1986.

3.0 ORGANIZATION

3.1 Normal Organization

Management Organization

Public Service Electric & Gas Company (PSE&G) is an investor-owned, public utility, franchised by the State of New Jersey. Its primary purpose is to provide safe, adequate and reliable electric and gas service to its customers at reasonable rates. The utility is organized into 5 major departments at the Senior Vice President level. The Senior Vice President - Nuclear and Engineering exercises supervision over the Engineering and Construction, and Nuclear Departments as shown in Figure 2-1.

The Emergency Preparedness Manager reports to the Manager - External Affairs. In turn, he reports to the Assistant Vice President - Nuclear Operations Support. The Assistant Vice President - Nuclear Operations Support reports to the Vice President - Nuclear. The Emergency Preparedness Manager has been delegated the responsibility for developing, implementing, and maintaining a comprehensive program for emergency preparedness which is designed to protect the health and safety of the public during a nuclear plant accident and interfacing with federal, state and local agencies to coordinate the development of offsite and onsite plans.

The station management organization for Hope Creek Generating Station is divided into four major functional departments. These are the Operations, Maintenance, Technical and Radiation Protection/Chemistry Departments. Charts showing PSE&G organizations are provided as figures in the Facility Technical Specifications.

Shift Organization

Operations

The Senior Nuclear Shift Supervisor (SNSS) is normally the senior shift member of the station organization. The Senior Nuclear Shift Supervisor has the primary management responsibility for safe operation of the station during the shift. The Senior Nuclear Shift Supervisor maintains an overview of the unit's condition, makes decisions, and directs operations by giving specific directions and

responsibilities to the shift personnel. The Senior Nuclear Shift Supervisor holds a Senior Reactor Operator's License and meets or exceeds the qualifications required by the Facility Technical Specifications.

The Nuclear Shift Supervisor is an extension of the authority and responsibility of the Senior Nuclear Shift Supervisor. The Nuclear Shift Supervisor maintains an overview of the unit's status and condition. In the areas of operation to which he/she is assigned, the Nuclear Shift Supervisor is given the authority and responsibility to make decisions and direct operations by giving specific direction and responsibility to the shift personnel. All operations personnel are subject to the orders, directions and instructions of the Nuclear Shift Supervisor as though he/she were the Senior Nuclear Shift Supervisor.

The Nuclear Shift Supervisor coordinates the activities of the shift personnel with the Senior Nuclear Shift Supervisor to avoid conflicts and to ensure that all operations are performed according to the orders, directions, and instructions of the Senior Nuclear Shift Supervisor. The Nuclear Shift Supervisor holds a Senior Reactor Operator's License and meets or exceeds the qualifications required by Facility Technical Specifications. In the event that the Senior Nuclear Shift Supervisor or Shift Support Supervisor (Operations Support Center Coordinator) is unable to complete a shift, the Nuclear Shift Supervisor fills these positions until that position can be recalled from offsite.

Nuclear Control Operators are assigned to the Control Room in accordance with the requirements of the Facility Technical Specifications. They are responsible for manipulating controls for startup, changing electrical output and reactor power, and plant shutdown, as required. Nuclear Control Operators take directions from the Senior Nuclear Shift Supervisor and Nuclear Shift Supervisor.

The Equipment and Utility Operators perform duties outside the main control room necessary for safe continuous operation of the plant. Their duties include maintaining equipment logs, initiating actions to maintain assigned equipment in a safe condition, and operating auxiliary equipment as necessary to support plant operations. The Equipment and Utility Operators take directions from the Nuclear Control Operators or Nuclear Shift Supervisor.

Maintenance

The shift electricians are the members of the Maintenance Department who are available to perform surveillance and preventive and corrective maintenance on electrical distribution equipment. This position reports to the Maintenance Department for normal assignments and supervision but receives on-shift direction from the Nuclear Shift Supervisor concerning priority repairs to support plant operations. Maintenance on valves, pumps and other mechanical components is the responsibility of the Maintenance Department mechanics. These individuals are not included as part of a shift's normal staffing complement but are available, as needed, to support the required repairs.

The shift I&C technicians are the members of the Maintenance Department who are responsible for preventive and corrective maintenance on any instrumentation and controls. This position reports to the Maintenance Department for normal assignments and supervision but receives on-shift direction from the Nuclear Shift Supervisor concerning priority repairs to support plant operations.

Technical

The technical engineers with specialties in design, controls, electrical, mechanical, and core thermal engineering, who are assigned to the Technical Support Team, are members of the station Technical Department and/or PSE&G Corporate Nuclear Engineering Department. The Technical Support Team interprets core performance data and evaluates system operations. The Technical Support Team provides accident assessment, engineering analysis, and recommends corrective action during an emergency.

Radiation Protection/Chemistry

The shift radiation protection technicians are normally responsible for conducting routine and special surveys, operating counting room instrumentation, maintaining access control at the control points, writing Radiation Work Permits and providing job coverage, as required. This position reports to the Radiation Protection/Chemistry Department for normal assignments and supervision. If radiation protection supervision is not available, the shift radiation protection technicians report to the Nuclear Shift Supervisor.

The shift chemistry technicians are the members of the

station Radiation Protection/Chemistry Department who are responsible for performing primary coolant chemistry sampling and analysis. This position reports to the Radiation Protection/Chemistry Department for normal assignments and supervision, but receives on-shift direction from the Nuclear Shift Supervisor concerning primary and secondary sampling required to support the station operations.

Fire Department

The on-shift fire department is maintained in accordance with Facility Technical Specifications and is staffed by full-time fire protection operators and firefighters who have received firefighting and first-aid training. The fire department's staff reports to the senior fire protection supervisor for normal assignments and directions but receives on-shift direction from the Senior Nuclear Shift Supervisor concerning priority response.

Station Security

The Security Shift Lieutenant and the Security Force are responsible for station security. These persons are assigned in accordance with the Station Security Plan and report to the security force supervisor for normal assignments and directions, but receive on-shift direction from the Senior Nuclear Shift Supervisor concerning special access control requirements or accountability.

3.2 Emergency Organization Functional Description

The emergency organization is explained by functional areas in this section and in Figures 3-1, 3-2, and 3-3. Detailed job descriptions for each box shown in the figures are provided in Section 3.3 of this plan.

Emergency Direction and Control

The responsibility for emergency direction and control, the decision to notify and recommend offsite protective action and commit corporate resources is held by the individual with the emergency coordinator function. This function passes from the Senior Nuclear Shift Supervisor to the Emergency Duty Officer and finally to the Emergency Response Manager as these individuals augment the emergency organization. The responsibilities associated with the emergency coordinator function are non-delegatable. The

On-Shift and Initial Augment

The Senior Nuclear Shift Supervisor (SNSS) initially has the emergency coordinator function and provides emergency direction and control (unless relieved by an Emergency-Duty-Officer-qualified member of Station Management). The Senior Nuclear Shift Supervisor has the authority and responsibility to immediately and unilaterally initiate any emergency actions. The Nuclear Shift Supervisor takes operational control of the unit while the SNSS is fulfilling the emergency coordinator function's emergency response duties.

The Nuclear Shift Technical Advisor (NSTA) provides an independent engineering assessment of plant conditions and advises the Senior Nuclear Shift Supervisor of potential problems recognized as a result of the assessment.

Short-Term Augment

Following the assumption of the emergency coordinator function (from the SNSS) by an Emergency Duty Officer (EDO) qualified member of station management, the EDO has the authority and responsibility to immediately and unilaterally initiate any emergency actions. The Senior Nuclear Shift Supervisor then takes control of the unit and is responsible for issuing all orders concerning operations which require direction by a senior operator licensed individual. The Nuclear Shift Supervisor assists the Senior Nuclear Shift Supervisor.

The Nuclear Shift Technical Advisor (the NSTA and the NSS may be the same individual) provides an engineering assessment of plant conditions and advises the SNSS.

Long-Term Augment

Following the assumption of the emergency coordinator function (from the EDO) by an Emergency Response Manager (ERM), the ERM has the authority and responsibility to immediately and unilaterally initiate emergency actions. The Site Support Manager (SSM) coordinates offsite support for the EDO. The SSM is also responsible for assessing and providing plant-related protective action recommendations to the ERM. The SSM receives plant-condition information from the Technical Support Supervisor located in the TSC.

The EDO retains the authority and responsibility for immediately and unilaterally initiating measures to protect the plant.

Plant Operations

During an emergency, the normal control room staff is maintained. A more senior member of the station management who holds a Senior Reactor Operators license, such as the Operations Manager, may assume direct control of the shift after completing proper relief procedures while the SNSS has the emergency coordinator function. The SNSS continues to perform the emergency coordinator function and maintains overall direction and control.

Corrective Actions and Support of Operations

On-Shift and Initial Augment

Upon determination by the Senior Nuclear Shift Supervisor that an emergency exists, the Operations Support Center (OSC) is activated. A representative of the fire department, a radwaste operator and an electrician or I&C technician report to either the OSC or other onsite location as directed.

This initial group of individuals initially are under the control of the Senior Nuclear Shift Supervisor. Additional support personnel are called in by the Senior Nuclear Shift Supervisor on an as-needed basis.

Short-Term Augment

The OSC Coordinator takes control of the corrective action and support function from the Senior Nuclear Shift Supervisor and acts as an interface between the Senior Nuclear Shift Supervisor and the OSC support teams. The OSC Coordinator assumes the responsibility for directing corrective action and support activities and is responsible for supplementing the OSC staff as needed. The OSC Coordinator ensures, through coordination with the Emergency Duty Officer, that adequate OSC staffing is available prior to accomplishing a site evacuation. In addition to the on-shift staffing, an additional electrician and I&C technician are called in.

Long-Term Augment

The long-term augment consists of additional radwaste operators, electricians and mechanics as necessary to support emergency response operations, and is under the control of the OSC Coordinator.

Offsite Radiological Accident Assessment

On-Shift and Initial Augment

The Shift Radiation Protection Technician (SRPT) is the individual responsible for radiological accident assessment on shift. The SRPT will report to the 137' elevation Control Point to obtain radiological and meteorological data from the Radiation Monitoring System (RMS) display terminal. Trained personnel are available on shift to do inplant, onsite, and offsite radiation surveys. The SRPT will make offsite dose projections using either computer or manual calculational methods. These dose projections are used as a basis for offsite protective action recommendations which the SRPT relays to the Senior Nuclear Shift Supervisor in the Control Room. The Senior Nuclear Shift Supervisor considers both the recommendation from the SRPT and his own evaluation of the plant status to derive an appropriate protective action recommendation to be communicated to offsite authorities. The SRPT also assigns onsite radiation protection and chemistry personnel to obtain radiation monitor data and coolant samples for analysis.

Short-Term Augment

As the on-shift organization is augmented, the SRPT ensures the setup of the Technical Support Center (TSC). The Radiological Assessment Coordinator (RAC) and additional support personnel report to the TSC to assume responsibility for offsite dose projection and monitoring. The Team Monitoring Coordinator directs onsite and offsite monitoring personnel and the ALARA Review Coordinator directs dose calculations. The SRPT returns to the Control Point for reassignment. The RAC or ALARA Review Coordinator also provides communicators to give the States of Delaware and New Jersey updates of the Station Status Checklist to enable the states to calculate an independent offsite dose projection.

Long-Term Augment

When the EOF is activated, the Radiological Support Manager

(FSM) has responsibility for, and directs, offsite dose projections and field monitoring. Communicators in the EOP assume the duties of providing offsite authorities with updates of the Station Status Checklist.

The offsite radiation monitoring teams transmit survey results to an RSM communicator. Radiological assessment staff members make offsite dose projections using either computer or manual calculational methods and/or offsite radiation monitoring team survey results. The dose projections are used as a basis for offsite protective action recommendations which the RSM relays to the Emergency Response Manager.

The Emergency Response Manager considers both the recommendation from the RSM and the evaluation of the plant status to derive an appropriate protective action recommendation which is provided to offsite authorities via a communicator. The RSM uses additional information from plant sample analysis, state offsite monitoring teams, and other support organizations to provide the best possible radiological dose assessment and protective action recommendation.

Radiation Protection Onsite

On-Shift and Initial Augment

The Shift Radiation Protection Technician (SRPT) is the individual responsible for radiation protection onsite. SRPT is supported by shift radiation protection personnel available to do inplant, onsite, and offsite radiation monitoring. Radiation protection personnel also support onsite corrective actions, access control, personnel monitoring, dosimetry, search and rescue and first aid.

Short-Term Augment

As the emergency organization is augmented, the SRPT ensures the set up of the Technical Support Center (TSC). Additional radiation protection personnel report to the Radiation Protection Coordinator at the Control Point. The RAC assumes overall responsibility for radiation protection onsite from the TSC and is assisted by the ALARA Review Coordinator, the Team Monitoring Coordinator, the Chemistry Coordinator, and various administrative support personnel. At that time, the SRPT returns to the Control Point for reassignment.

Long Term Augment

The Radiological Assessment Coordinator continues to be responsible for onsite radiation protection at the TSC. The radiation protection staff is augmented as required by the emergency conditions. Additional radiation protection personnel report to the Radiation Protection Coordinator at the Control Point who, in turn, reports to the Radiological Assessment Coordinator at the TSC.

Plant Systems Assessment and Engineering

On-shift and Initial Augment

The Nuclear Shift Technical Advisor (NSTA) and an additional individual experienced in core analysis and thermohydraulics go to the Control Room, and provide plant systems assessment and evaluate plant conditions relative to emergency action levels. Recommendations are made to the Senior Nuclear Shift Supervisor on protective action recommendations based on plant conditions.

Short-Term Augment

The NSTA normally remains in the control room and directly advises the Senior Nuclear Shift Supervisor on plant assessment. The short-term augment personnel for the areas of Core/Thermohydraulics, Mechanical Engineering and Electrical Engineering report to the Technical Support Supervisor in the TSC.

Long-Term Augment

At the TSC the Technical Support Supervisor (TSS) takes command and direction of a plant assessment group composed of the operational assessment engineers and engineering support. The TSS is responsible for making technical plant assessments and providing recommendations on protective actions to the Site Support Manager.

The Technical Support Team - TSC is a group of engineers from the station Technical Department and the PSE&G Corporate Nuclear Engineering Department. This group, under the direction of the Technical Support Team Leader - TSC, provides an assessment of plant systems and trends. The operational assessment engineer(s) are engineers who are familiar with plant operational specifics. Support for this group is coordinated via a Technical Support Team Leader - EOF. Technical Support Team Leader - EOF calls out

Nuclear Support Department personnel and supply the TSC with requested information.

The Technical Support Manager in the EOP directs and coordinates significant engineering and construction efforts required by the emergency response. He is supported by a Quality Assurance Support Team at the EOP. The Technical Support Team at the EOP also supports this effort and retains outside support as necessary.

3.3 Emergency Organization Job Descriptions

The following job descriptions are the responsibilities and duties of the emergency response organization personnel as delineated in Figures 3-1, 3-2 and 3-3.

A. EMERGENCY DIRECTION AND CONTROL

A.1 Emergency Response Manager

General Authority and Responsibility

The Emergency Response Manager has overall responsibility for management of onsite and offsite emergency response activities. The Emergency Response Manager has the authority to utilize the technical and financial resources of the company to mitigate an emergency event and limit radiological exposure to the public.

Specific Duties

- 1) An Emergency Response Manager is available 24 hours a day.
- 2) Under ALERT conditions, the Emergency Response Manager is responsible for making the decision to activate the Emergency Operations Facility (EOF) organization.
- 3) Under SITE AREA and GENERAL EMERGENCY conditions, the Emergency Response Manager automatically activates the EOF organization.
- 4) The Emergency Response Manager assumes the emergency coordinator function from the EDO. The following duties are those which are the responsibilities of the person with the emergency coordinator function, which cannot be delegated:
 - b) Has the authority to expend company funds in an emergency situation, as necessary, to implement the emergency plan procedures.
 - c) Has the responsibility for the decision to notify and make protective action recommendations to state and county officials.
- 5) Responsible, when acting in the emergency

coordinator function, for determining the emergency classification with respect to Alert, Site Area Emergency, or General Emergency.

- 6) The Emergency Response Manager has ultimate authority and responsibility in making corporate policy and decisions concerning all aspects of emergency response operations.
- 7) The Emergency Response Manager keeps corporate management advised of plant status and significant emergency response operations.
- 8) Upon arrival at the EOF, the Emergency Response Manager keeps a log of actions taken.
- 9) The Emergency Response Manager has ultimate authority and responsibility for the dissemination of technical information concerning plant conditions and emergency response operations. The Emergency Response Manager acts as an alternate principal media spokesman.
- 10) The Emergency Response Manager acts as the principal corporate interface between the company and all other organizations.
- 11) In carrying out the duties of the position, the Emergency Response Manager designates alternates or others to act in his behalf as he deems necessary.

A.2 Site Support Manager

General Authority and Responsibility

The Site Support Manager reports to the Emergency Response Manager and is responsible for the interface between the EOF Organization and the Emergency Duty Officer (TSC). The Site Support Manager is responsible for providing information to the Emergency Response Manager on plant conditions which may result in protective action recommendations to offsite authorities.

Specific Duties

- 1) The Site Support Manager reports to the Emergency Response Manager.

- 2) The Site Support Manager is notified of an emergency condition in accordance with Emergency Plan Procedures.
- 3) The Site Support Manager coordinates with and is the primary interface for onsite support between the Emergency Duty Officer (EDO) and the Emergency Response Manager.
- 4) The Site Support Manager communicates with the EDO and the Technical Support Supervisor (TSS) and is knowledgeable of the current plant status such that he can determine if emergency action levels exist to satisfy Protective Action Guidelines.
- 5) The Site Support Manager provides input information for plant condition protective action recommendations to the Emergency Response Manager.
- 6) The Site Support Manager is responsible for providing technical information and briefings to the Public Affairs Manager - Nuclear and the Public Information Technical Liaison.
- 7) Upon notification of an emergency, the Site Support Manager notifies any additional individuals needed to support the site support function.
- 8) The Site Support Manager keeps a log of actions taken, from the first notification of an emergency.
- 9) The Site Support Manager notifies the Emergency Response Manager when prepared to assume site support functions in accordance with Emergency Plan Procedures.
- 10) The Site Support Manager is responsible for coordination and assignment of offsite support to individuals within the emergency response organization.

A.4 Emergency Duty Officer

General Authority and Responsibility

The Emergency Duty Officer (EDO) relieves the Senior Nuclear Shift Supervisor of the emergency coordinator function and all accident management except plant operations. The EDO has the authority to immediately and unilaterally initiate any emergency actions until relieved of the emergency coordinator function by the ERM following activation of the EOP.

Specific Duties

- 1) Reports initially to the control room, if possible, to receive a turnover of the emergency coordinator function and responsibility for emergency direction and control from the Senior Nuclear Shift Supervisor.
- 2) Evaluates plant and radiological conditions.
- 3) Responsible, when acting in the emergency coordinator function, for ensuring accomplishment of the necessary assessment of offsite radiation concentrations resulting from a release.
- 4) Determines location to be used to assemble emergency personnel; ensures communications are established.
- 5) Responsible for activating the TSC.
- 6) May call in additional station management as necessary.
- 7) Reviews near-term and long-term actions taken by the Senior Nuclear Shift Supervisor and briefs the Senior Nuclear Shift Supervisor on all significant information and actions taken.
- 8) Responsible for providing the single source point of contact with the NRC.

- 9) Has the authority to order any required protective actions for onsite personnel. He also has the authority to recommend any protective actions for offsite agencies.
- 10) Ensures all injured personnel receive proper assistance.
- 11) Ensures the dispatch of emergency/survey teams as required by the emergency conditions.
- 12) Responsible for the following administrative requirements:
 1. Having a "Communicator(s)" assigned to receive and sort all incoming and outgoing calls, as required. The Communicator is located in the vicinity of the EDO either in the SNSS's office or TSC.
 2. Ensuring that the required offsite notifications are made.
- 13) Responsible for the timely completion of the EDO checklist.

A.5 Senior Nuclear Shift Supervisor

General Authority and Responsibility

The Senior Nuclear Shift Supervisor initially assumes the Emergency Coordinator function and is responsible for initiating the necessary immediate actions to limit the consequences of an accident and bring it under control.

The Assistant General Manager and Operations Manager are normally expected under accident conditions to report to the Control Room to oversee plant operations and provide guidance and direction, as appropriate, to the Senior Nuclear Shift Supervisor.

Specific Duties

- 1) Notifies and briefs the EDO of an emergency and determines, with concurrence of EDO, the need for summoning additional personnel.

- 2) Evaluates plant and radiological conditions when in the emergency coordinator function.
- 3) Responsible, when in the emergency coordinator function, for determining the emergency classification with respect to Unusual Event, Alert, Site Area and General Emergency.
- 4) Maintains all required records by the Emergency Plan Procedures.
- 5) Initiates the required telephone notifications of offsite agencies, unless the EDO assumes this responsibility.
- 6) Ensures timely completion of the Follow-up Message Form as required.
- 7) Keeps the EDO informed of plant status.
- 8) Directs the operation of the plant in compliance with all normal plant procedures, directives and technical specifications and emergency procedures.
- 9) Responsible for monitoring plant parameters and plant conditions.
- 10) Has the authority, when in the emergency coordinator function, to activate the TSC.

B. PLANT OPERATIONS

B.1 Nuclear Shift Technical Advisor

General Authority and Responsibility

The Nuclear Shift Technical Advisor is the accident assessment advisor to the Senior Nuclear Shift Supervisor during emergencies.

Specific Duties

- 1) Provides technical operational advice to the Senior Nuclear Shift Supervisor during emergency.
- 2) May be the same individual as the Nuclear Shift Supervisor or Senior Nuclear Shift Supervisor if all requirements are met.

B.2 Nuclear Shift Supervisor

General Authority and Responsibility

The Nuclear Shift Supervisor assists the Senior Nuclear Shift Supervisor during the emergency.

Specific Duties

- 1) Brief the Senior Nuclear Shift Supervisor and EDO as necessary.

B.3 Nuclear Control Operators

Specific Duties

- 1) Support the Nuclear Shift Supervisor in emergency assessment and plant emergency response.
- 2) Provide additional assistance as directed by the Nuclear Shift Supervisor to mitigate effects of an emergency situation.
- 3) Manipulate controls for routine and, if necessary, emergency operations for the unit in accordance with the operating and emergency instructions.

B.4,5 Control Room Communicators

Specific Duties

- 1) Relay official messages for the Senior Nuclear Shift Supervisor (SNSS), during an emergency.
- 2) At the request of the SNSS, deliver emergency notification messages to federal, state, and local authorities.
- 3) Maintain a log of official communications.
- 4) Call up additional personnel as requested.

B.6 Equipment and Utility Operators (listed as EO in the figures)

Specific Duties

- 1) Assist the Nuclear Shift Supervisor and Nuclear Control Operators in accident assessment and emergency response operations.
- 2) Operate plant equipment in support of emergency response and recovery operations.
- 3) Maintain equipment and associated logs.

C. CORRECTIVE ACTION AND SUPPORT OF OPERATIONS

C.1 Operations Support Center Coordinator

Specific Duties

- 1) Activates Operations Support Center (OSC), and assembles teams.
- 2) Directs plant personnel in support of repair and corrective actions: confirms that teams are briefed and radiologically equipped.
- 3) Advises/supports firefighting personnel during a fire emergency.
- 4) Provides the Senior Nuclear Shift Supervisor with status reports of repair and corrective actions.

C.2 Shift Instrument and Controls (I&C) Technician

The Shift I&C Technician assists in general engineering related tasks as requested by the Senior Nuclear Shift Supervisor, OSC Coordinator, or OSC Support Supervisor.

- 1) Activating equipment and monitoring equipment operation.
- 2) Developing, relaying or posting technical information related to the emergency response.

C.3 Shift Electrician

Specific Duties

- 1) Supports the repair and corrective actions for the instrumentation and control systems during emergency response and recovery operations or supports electrical repairs and corrective actions.
- 2) Receives direction from the OSC Coordinator.

C.4 OSC Support Supervisor - (Operations, I&C, and Maintenance Supervisors)

The OSC Support Supervisor reports to the OSC Coordinator. The OSC Support Supervisor is responsible for providing supervision in the OSC of on-shift support of Operations,

and Maintenance personnel including Instrument and Controls personnel.

Specific Duties

- 1) Assemble OSC teams as requested.
- 2) Coordinate corrective action.
- 3) Verify appropriate briefings, protective equipment, and dosimetry have been obtained by each team dispatched.

C.5 OSC Support Team Members - (Radwaste Operator, I&C, Electric, Boiler Repair Representative Support, Machinist)

OSC Support Team Members report to the OSC Support Supervisor at the OSC. Assignments and responsibilities vary, but all disciplines provide general technical/specialist support as requested. Members frequently are assigned as teams. First aid and health physics coverage is requested from the Radiation Protection Coordinator or Radiological Protective Action Technician (RPAT).

- 1) Activate or monitor equipment.
- 2) Assess damage, determine condition, or report status of plant/plant equipment.
- 3) Obtain and use dosimetry and protective clothing to allow mobility during an emergency response.
- 4) Conduct search and rescue operations.
- 5) Report progress of emergency actions to the OSC Coordinator.

C.6 OSC Clerk

The Operational Support Center (OSC) Clerk reports to the OSC Coordinator at the OSC. The OSC Clerk collects, posts, and update information, and also has some communicator responsibilities.

Specific Duties

- 1) Maintain logs and status boards for the OSC Coordinator.

D. RADIOLOGICAL ACCIDENT ASSESSMENT

D.1 Radiological Support Manager

General Authority and Responsibility

The Radiological Support Manager reports to the Emergency Response Manager and is responsible for offsite assessment of potential or actual radiological consequences to the public. The Radiological Support Manager provides assistance to the Radiological Assessment Coordinator, as necessary.

Specific Duties

- 1) The Radiological Support Manager (RSM) reports to the Emergency Response Manager.
- 2) The RSM is responsible for offsite dose assessment after the EOP has been activated. Prior to activation of the EOP organization, the Radiological Assessment Coordinator has this responsibility.
- 3) The RSM provides field monitoring teams for offsite radiological evaluation.
- 4) The RSM ensures radiological dose calculations are made.
- 5) The RSM provides input information on potential or actual radiological releases or consequences and protective action recommendations to the Emergency Response Manager. The Radiological Support Manager communicates with the States of Delaware and New Jersey, and relays protective action recommendations and other information to them.
- 6) The RSM initiates and coordinates long-term environmental monitoring. Long-term assistance may also be drawn from other nuclear power utilities and contractors.
- 7) The RSM establishes communication with the medical assistance facilities and personnel to put the Emergency Medical Assistance Plan into operation if necessary. Contact is established as defined in the Emergency Medical Assistance Plan.

- 8) After the emergency is under control and evacuation of the public is no longer likely, the RSM assists station personnel to determine efforts which may be used to further reduce exposures to the station operating personnel and to the public. The doses are evaluated for the duration of the exposure.

D.2 Radiological Assessment Staff - EOF

Specific Duties

- 1) Assesses the radiation releases and doses to protect occupational workers and members of the general public surrounding the power plant to determine whether or not shelter or evacuation is to be recommended to state and federal agencies.
- 2) Assists station personnel to determine efforts which may be used to further reduce exposures to the station operating personnel and to the public.
- 3) Completes the radiological portion of the Station Status Checklist.
- 4) Coordinates and directs offsite monitoring from the EOF.
- 5) Evaluates data provided by the field teams to track the plume and confirm the dose estimates.
- 6) Monitors the habitability of the EOF.

D.3 Radiation Assessment Liaison - TSC

Specific Duties

- 1) Maintains continuous communications between the control room and radiological accident assessment group both onsite and offsite from the TSC.
- 2) Establishes and maintains communications with the RSM and the Radiological Assessment Coordinator.
- 3) Maintains current data on the radiation monitoring system, meteorological system, and other inplant information pertinent to radiological assessment functions.

D.4 Radiation Protection Communicators - EOF

Specific Duties

- 1) Maintains continuous communications with the states of New Jersey and Delaware or with the TSC to obtain/relay emergency information.
- 2) Relays any requests for information to the appropriate EOF staff member for resolution.

D.5 Field Team Communicator

Specific Duties

- 1) Establishes and maintains communications with the offsite field monitoring teams.
- 2) Ensures that monitoring teams are kept up-to-date on the status of the emergency

D.6 Offsite Radiation Monitors

Specific Duties

- 1) Performs offsite radiation and air sampling surveys as directed by the Radiation Support Manager or Radiological Assessment Coordinator.
- 2) Informs EOF or TSC of survey results.

D.7 Administrative Support Coordinator

Specific Duties

- 1) Ensures that data and information, especially station status checklists, are routed to the appropriate staff members.
- 2) In the absence of supplemental personnel, ensures that plant and RMS data are available for use by the dose calculators and the appropriate status boards are maintained.

D.8 Administrative Support Staff*

Specific Duties

- 1) Transcribes data concerning plant parameters as the RMS to ensure their availability to the radiological assessment staff.
- 2) Obtains the appropriate status boards.

D.9 Assistant Radiological Support Manager.*

Specific Duties

- 1) Assists the RSM in the fulfillment of the RSM responsibilities.
- 2) Initiates the resolution of any special projects at the direction of the RSM.

* Denotes position which is staffed for optimal operations, not a staffing requirement.

E. RADIATION PROTECTION ONSITE

E.1 Radiological Assessment Coordinator (RAC)

General Authority and Responsibility

The Radiological Assessment Coordinator assists the Senior Nuclear Shift Supervisor (SNSS)/Emergency Duty Officer (EDO) in matters relating to radiological problems during the emergency and provides radiological assessment and recommendations for protective action recommendations to the EDO.

- 1) Responsible for ensuring radiation protection emergency actions are conducted in accordance with emergency procedures.
- 2) Responsible for the emergency functions of the Radiological Support Manager until such time as the Radiological Support Manager (RSM) assumes the RSM duties.
- 3) Responsible for the formation, dispatch and continued communication with onsite and offsite radiation monitoring teams until the EOP is activated.
- 4) Responsible for protective action recommendations related to onsite radiological conditions.
- 5) Responsible for initiating and supervising dose calculations.
- 6) Responsible for the calibration of all onsite radiological emergency equipment for the duration of the emergency.
- 7) Responsible for determining the habitability of the TSC, OSC, and Control Point.
- 8) Communicates directly with the Radiological Support Manager at the EOP to coordinate onsite and offsite dose assessment and environmental monitoring.

E.2 Radiation Protection Coordinator

Specific Duties

- 1) Activates and supervises the emergency Radiation

Protection organization at the Control Point.

- 2) Determines areas within the Radiologically Controlled Area (RCA) to be monitored/sampled and arranges for their analysis.
- 3) Responsible for dispatching inplant radiation monitoring technicians to perform surveys and take samples.
- 4) Supervises the implementation of access control, wherever necessary.
- 5) Responsible for protective action implementation within the Radiologically Controlled Areas.
- 6) Briefs the Radiological Assessment Coordinator, as necessary.
- 7) Ensures that personnel entering the RCA are equipped with required protective clothing and dosimetry.

E.3 Shift Radiation Protection Technician

Specific Duties

- 1) Activates the TSC and, if necessary, the emergency Control Point organization until the on-shift staff is augmented.
- 2) Responsible for initial offsite dose calculations using data obtained from effluent release point monitors and control instrumentation prior to assumption of these duties by the ALARA Review Coordinator.
- 3) Assumes the responsibilities of a Radiation Protective Action Technician after being relieved of duties at the TSC by the RAC.

E.4 Monitoring Team Coordinator

Specific Duties

- 1) Coordinates and directs onsite and offsite monitoring before the EOP is activated.

- 2) Evaluates data produced by the monitoring teams to track the plume and confirm dose estimates.
- 3) Informs the Radiological Assessment Coordinator of significant changes in survey results.

E.5 ALARA Review Coordinator

Specific Duties

- 1) Performs and/or reviews dose calculations.
- 2) Correlates dose calculations with the PAGs for protective action recommendations.
- 3) Completes the radiological portion of the Station Status Checklist.
- 4) Evaluates planned corrective actions/re-entry with Radiation Protection Department's ALARA policies.

E.6 Radioactive Materials Coordinator

- 1) Directs all decontamination operations.
- 2) Develops plans to store and ship all radwaste, including in-plant samples before and after analysis.
- 3) Ensures that radwaste storage areas are properly posted and/or locked.
- 4) Responsible for performing inventories of radwaste.
- 5) Evaluates the establishment of long-term storage areas for radioactive waste onsite.
- 6) Ensures that laundry supplies are maintained and disposed of properly.
- 7) Briefs the Radiological Assessment Coordinator, as necessary.

E.7 Dosimetry and Equipment Coordinator

Specific Duties

- 1) Responsible for the issuance of special personnel monitoring dosimeters to onsite emergency workers.
- 2) Responsible for analyzing air samples if necessary.
- 3) Ensures all the necessary dosimetry and counting room equipment is operable, calibrated and ready for use.
- 4) Responsible for the inventory control of portable instrumentation.
- 5) Ensures all necessary portable instruments are operable, calibrated and ready for use.

E.8 Chemistry Coordinator

Specific Duties

- 1) Evaluates the type and quantities of samples necessary to assess the emergency
- 2) Supervises the activities of the counting labs.
- 3) Keeps the Radiological Assessment Coordinator informed of analysis results.
- 4) Advises the EDO concerning the status of chemistry-related systems.

E.9 Chemistry Activities Coordinator

Specific Duties

- 1) Directs chemistry sample collection at the Control Point, in coordination with the Radiation Protection Coordinator.
2. Ensures that chemistry samples are analyzed and results are reported to the Chemistry Coordinator in the TSC.
- 3) Confers with the Chemistry Coordinator concerning the status of chemistry-related systems (i.e.,

condensate polisher).

E.10, 11 In-Plant Radiation Protection Technicians

Specific Duties

- 1) Perform inplant radiation and air sampling surveys.
- 2) Provide radiation protection coverage for search and rescue teams repair/corrective action teams, and the fire brigade.
- 3) Brief the Radiation Protection Coordinator of survey results.

E.12, 13 Onsite Radiation Monitoring Technicians

Specific Duties

- 1) Perform onsite radiation and air sampling surveys.
- 2) Brief the Team Monitoring Coordinator of survey results.

E.14, 15, 16 Radiation Protective Action Technicians

Specific Duties

- 1) Assist in access control of contaminated and/or radiation areas.
- 2) Brief the Radiation Protection Coordinator, as necessary.

E.17, 18 Chemistry Technicians (Chemistry Technicians or Assistants who are ANSI qualified)

Specific Duties

- 1) Support accident assessment efforts by analyzing plant radiochemistry and chemistry as directed by the Chemistry Activities Coordinator.
- 2) Report results to Chemistry Activities Coordinator or Chemistry Coordinator.

E.19 Radio Communicator*

Specific Duties

- 1) Establishes and maintains communications with the onsite and offsite field monitoring teams.
- 2) Ensures that monitoring teams are kept up-to-date on the status of the emergency.

E.20 Dose Calculator*

Specific Duties

- 1) Assists the ALARA Review Coordinator in calculating dose estimates.
- 2) Assists the ALARA Review Coordinator in completing the radiological portion of the Station Status Checklist.

E.21 Radiation Protection Support Runner*

Specific Duties

- 1) Ensures that data and information, especially station status checklists, are routed to the appropriate staff members.

E.22 Radiation Protection Status Board Plotter*

Specific Duties

- 1) Maintains the appropriate status boards in the TSC.

* Denotes position which is staffed for optimal operations, not a staffing requirement.

P. PLANT SYSTEMS ASSESSMENT AND ENGINEERING

P.1 Technical Support Supervisor

General Authority and Responsibility

The Technical Support Supervisor has overall responsibility for tracking and trending plant conditions, identifying plant condition emergency action levels and providing advice on protective action recommendations to the Emergency Duty Officer and when the EOF is activated, the Site Support Manager.

Specific Duties

- 1) The Technical Support Supervisor reports to the Emergency Duty Officer.
- 2) The Technical Support Supervisor evaluates the potential for an offsite radiological release based upon plant conditions in accordance with emergency action levels. Prior to activation of the Emergency Operations Facility (EOF), these evaluations are provided to the Emergency Duty Officer for action. After activation of the EOF, these evaluations are provided to the Site Support Manager for action and the Emergency Duty Officer for information.
- 3) The Technical Support Supervisor provides advice to the EDO on priorities for plant repair and corrective actions.
- 4) The Technical Support Supervisor is responsible for analysis and development of plans and procedures in direct support of operations personnel with the objective of placing the plant in a safe shutdown condition in a manner which minimizes any adverse health and safety effects on the public.
- 5) The Technical Support Supervisor obtains from the Technical Support Team Leader - TSC an evaluation of technical support required and then assists in developing responses.
- 6) The Technical Support Supervisor keeps a log of actions taken.

P.2 Technical Support Team Leader - TSC

General Authority and Responsibility

The Technical Support Team Leader - TSC directs the activities of the Technical Support Team - TSC in providing accident assessment and engineering analysis during an emergency.

Specific Duties

- 1) Initiates and directs troubleshooting requiring engineering analysis of the plant conditions.
- 2) Interfaces with the Technical Support Manager and Technical Support Team Leader - EOF.
- 3) Establishes engineering analysis priorities.
- 4) Makes engineering recommendations to the Technical Support Supervisor.
- 5) Provides mechanical systems accident assessment.
- 6) Analyzes plant mechanical systems requiring troubleshooting during an emergency.
- 7) Develops engineering recommendations concerning the impact of the emergency event upon mechanical systems.

P.3 Engineer - Electrical

Specific duties

- 1) Analyzes plant electrical systems and equipment to determine current operating condition.
- 2) Develops recommendations concerning plant operations relating to electrical systems and equipment.
- 3) Reviews proposed plant operations with respect to electrical systems.
- 4) Receives instructions from and reports findings to the Technical Support Supervisor.

F.4 Engineer - Mechanical

Specific Duties

- 1) Analyzes plant mechanical systems and equipment to determine current operating conditions.
- 2) Develops recommendations concerning plant operations relating to mechanical systems.
- 3) Reviews proposed plant operations with respect to mechanical systems.
- 4) Receives instructions from and reports findings to the Technical Support Supervisor.

F.5 Engineer - Controls

Specific Duties

- 1) Provides control systems accident assessment.
- 2) Analyzes plant control systems requiring trouble-shooting during an emergency.
- 3) Develops engineering recommendations concerning control systems impacted by an emergency.

F.6 Operations Assessment Engineer, Core-Thermal Hydraulics

Specific Duties

- 1) Analyzes core parameters to determine current conditions of the core.
- 2) Develops recommendations for plant operations that would affect safe core conditions.
- 3) Reviews proposed plant operations with respect to the effect on core conditions.
- 4) Receives instructions from and reports findings to the Technical Support Team Leader - TSC.

F.7 Engineer - Design

Specific Duties

- 1) Analyzes and reviews the development of plans for maintenance and corrective actions with respect to plant design during an emergency.
- 2) Develops engineering recommendations concerning the impact upon the plant design by the emergency event.

F.8 TSC Communications Coordinator

The TSC Communications Coordinator reports to the Technical Support Supervisor. The TSC Communications Coordinator is responsible for obtaining and routing operational and radiological data.

Specific Duties

- 1) Verify that required notifications are made.
- 2) Ensure that operational and radiological data are obtained.
- 3) Advise TSC on Emergency Operations Center activities as required.

F.9 TSC Communicator

The TSC Communicator reports to the TSC Communication Coordinator and is responsible, at direction of the TSC Communications Coordinator, to make official notifications, obtain, and transmit data.

F.10 Technical Support Manager

General Authority and Responsibilities

The Technical Support Manager is responsible for coordinating the need for engineering design changes and plant modifications.

Specific Duties

- 1) Receives direction from and reports results to the Emergency Response Manager.

F.11 Technical Support Team Leader - EOF

General Authority and Responsibilities

The Technical Support Team Leader - EOF directs the activities of the Technical Support Team - EOF in providing engineering analysis during an emergency.

- 1) Interfaces with the Technical Support Team Leader - TSC concerning the analysis of plant systems impacted by an emergency event.
- 2) Coordinates requests from the Technical Support Manager with respect to plant systems analysis.

F.12 Technical Support Team - EOF

Specific Duties

- 1) Analyzes plant systems impacted by an emergency event as requested by the Technical Support Team Leader - EOF.
- 2) Provides engineering and construction support for engineering and design changes and plant modifications as directed by the Technical Support Team Leader - EOF.

F.13 Licensing Support Team Leader

General Authority and Responsibility

The Licensing Support Team Leader is responsible for providing Licensing Department Support to the Technical Support Manager.

Specific Duties

- 1) Directs Licensing Department effort to support the Technical Support Manager.

F.14 Licensing Support Team Member

Licensing Support Team Member reports to (and when required, becomes) the Licensing Support Team Leader. The function supports the Technical Support Manager, at the Emergency Operations Facility.

Specific Duties

- 1) Advise Technical Support staff on applicable local, state, and federal, permit and regulatory commitments.
- 2) Assume position of Licensing Support Team Leader, if required.

F.15 Nuclear Fuel Team Leader - EOP

Specific Duties

- 1) Provides Nuclear Fuel Engineering Support to the Technical Support Manager.
- 2) Analyzes fuel performance and status.

F.16 Nuclear Fuel Support

Specific Duties

- 1) Conduct emergency response callouts.
- 2) Assess fuel performance and status.
- 3) Assist in making recommendations.

F.17 Quality Assurance Team Leader - EOP

Specific Duties

- 1) Provides Quality Assurance support for emergency procurement of items or services to which the Quality Assurance Program applies in addition to supporting any required emergency changes to safety-related procedures.
- 2) Receives direction from the Technical Support Manager.

F.18 Quality Assurance Team Members

Specific Duties

- 1) Report to the Quality Assurance Team Leader.
- 2) Assist in Quality Assurance functions as requested.

G. PUBLIC INFORMATION

G.1 Public Affairs Manager - Nuclear

General Authority and Responsibility

The Public Affairs Manager is responsible for administering media and public relations activities (in consultation with the Information Services Department) concerning the nuclear facilities at Artificial Island.

Specific Duties

- 1) Acts as official company spokesperson.
- 2) Coordinates dissemination of media information to the Emergency News Center (ENC) from the EOP.
- 3) Administers public affairs effort during emergency.

G.2 Public Affairs Technical Assistant

General Authority and Responsibility

The Public Affairs Technical Assistant is responsible for providing assistance of a technical nature to the Public Information Manager in the ENC.

Specific Duties

- 1) Communicates with the Public Affairs Manager - Nuclear and Public Information Technical Liaison and others as necessary to be thoroughly briefed on plant conditions and activities.
- 2) Assists the Public Affairs Manager in the ENC.
- 3) Assists in briefing the news media representatives at its technical aspects of an event.

G.3 Public Information Manager

General Authority and Responsibility

The Public Information Manager has overall responsibility for liaison with the news media and coordinates the activities of both the Information Services Department in Newark and the Emergency News Center. He is responsible for

providing accurate, consistent and timely information to the news media representatives at the Emergency News Center. The Public Information Manager serves as the primary contact for representatives of the news media and public information officials from Federal, State, and local agencies or any other organization responding to an event.

Specific Duties

- 1) Activates the Emergency News Center.
- 2) Establishes and maintains communications with the Public Information Technical Liaison (Public Affairs Manager - Nuclear).
- 3) Initiates and supervises the drafting of media releases.
- 4) Forwards all draft media releases to the Public Information Technical Liaison for the review and approval of the Public Affairs Manager - Nuclear and Emergency Response Manager.
- 5) Issues approved media releases.
- 6) Schedules and directs news conferences as frequently as conditions warrant.
- 7) Assists the Public Affairs Manager - Nuclear during news conferences or press briefings. Acts as an alternate company spokesperson as directed by the Public Affairs Manager.
- 8) Responsible for maintaining a log of events, actions, and communications.

G.4 Public Information Technical Liaison

General Authority and Responsibility

The Public Information Technical Liaison is responsible for transmitting accurate information concerning plant conditions and emergency response activities to the Emergency News Center and the Newark Information Services Department. The Public Information Technical Liaison acts as a liaison between the Emergency Response Manager and the Emergency News Center and/or the Information Services Department.

Specific Duties

- 1) Responsible for gathering accurate information concerning plant conditions and emergency response activities via briefings from the Status Boards in the EOP and the Emergency Response Manager.
- 2) Transmits information to the Emergency News Center and the Newark Information Services Department.
- 3) Reviews media releases.
- 4) Ensures all media releases are reviewed and approved by the Emergency Response Manager prior to an actual release to media representatives.
- 5) Maintains an accurate log of events, actions, and communications.

G.5 Public Information Coordinator

General Authority and Responsibility

Public Information Coordinator is responsible for providing ENC facilities and media support.

- 1) Coordinates physical support and maintains materials available to set up and operate the Emergency News Center (ENC).
- 2) Assists the Public Information Manager in the operation of the ENC.
- 3) Coordinates graphics and audiovisual support for media briefings.

G.6 Information Services Department

General Authority Responsibility

The Information Services Department is responsible for directing Information Services in Newark. This office serves as an alternate to the Salem ENC and maintains a state of readiness to assume all the functions of the ENC. Information Services Department is responsible for disseminating information prior to the activation of the EOP and the ENC.

Specific Duties

- 1) Establishes communications with the Public Information Technical Liaison and the Public Information Manager.
- 2) Responsible for initiating communications with Public Information Officials of the States of New Jersey and Delaware.
- 3) Responsible for maintenance of an accurate log of communications with the EOP, ENC and the States of New Jersey and Delaware Public Information Offices.

H. This letter is not assigned.

I. SITE ACCESS CONTROL AND ACCOUNTABILITY

I.1 Security Liaison

The Security Liaison responds to the TSC, but may report to the Emergency Duty Officer. The Security Liaison is responsible for coordinating aspects of site evacuation and personnel accountability.

Specific Duties

- 1) Verify accountability is established.
- 2) Assist in the coordination and control of site evacuation.

I.2 Site Support Manager (SSM) Staff - Nuclear Site Protection (NSP)

The SSM Staff, NSP, reports to the Site Support Manager (SSM). The SSM Staff, NSP, assist in conducting emergency response callouts and are responsible for some aspects of the Emergency Operations Facility.

Specific Duties

- 1) Conduct emergency response callouts.
- 2) Assist in setup of Emergency Operations Facility.

I.3 Security Force Member

Security Force Members report to the Site Support Manager. Security Force Members are responsible for the proper establishment and maintenance of access control.

Specific Duties

- 1) Maintain access control.
- 2) Assist in personnel accountability.

J. OTHER SUPPORT

J.1 Administrative Support Manager

General Authority and Responsibility

The Administrative Support Manager reports to the Emergency Response Manager, administers the provision of emergency support and provides administrative support for the emergency response effort.

Specific Duties

- 1) Provides general office support functions including typing, reproduction, office supplies and office furniture.
- 2) Functions as the EOF purchasing agent.
- 3) Administers the petty cash fund and expense accounts.
- 4) Coordinates personnel requests from the Emergency Response Manager and the other support managers.

J.2 EOF Administrative Support

Support personnel report to Administrative Support Supervisor at the Emergency Operations Facility.

Specific Duties

- 1) Provide administrative support to the EOF staff.

J.3 Administrative Support Supervisor

General Authority and Responsibility

The Administrative Support Supervisor is responsible for providing administrative support to the Emergency Duty Officer and has the authority to arrange for procurement of the necessary materials or personnel.

Specific Duties

- 1) Receives direction from the Emergency Duty Officer.
- 2) Coordinates activities with the Administrative

Support Manager.

- 3) Maintains records of purchases.

J.4 TSC Administrative Staff

The TSC Administrative staff report to the Administrative Support Manager. Staff members are responsible for functions normally associated with their specialties.

Specific Duties

- 1) Provide administrative support to the TSC.

J.5 Public Information Administrative Assistant

Specific Duties

- 1) Provide administrative support to Public Affairs.

3.4 Staffing Commitments

The commitment to staff in accordance with Table 3-2 is in accordance with Supplement 1 to NUREG-0737, Table 2.

Table 3-2 provides a correlation between major functional areas, major tasks, position title or expertise, as described in Table 2 of Supplement 1, NUREG-0737, and the similar tasks and titles in the emergency response organization. The alphanumeric codes which appear with staffing capability goals represent the emergency response organization positions used in 3.3. of this plan. Facility staffing capability goals are described in Section 9, Emergency Facilities and Equipment.

The response times of 30 and 60 minutes as shown in Table 3-2 are considered to be the goal for augmentation personnel as necessary for staffing of emergency response facilities as discussed in Section 9.

**TABLE
3-1**

**LINE OF SUCCESSION
EMERGENCY COORDINATOR DUTIES**

<u>1. Duty Position</u>	<u>2. Personnel Assigned Duty Position</u>	<u>3. Classification Requiring Activa- tion of Emergency Coordinator, Function</u>
		<u>UE A SAE GE</u>
Senior Nuclear Shift Supervisor	SNSS is a normal shift duty assignment per station tech spec	X
Emergency Duty Officer	Technical Manager I&C Engineer Operating Engineer	X ₂ X
Emergency Response Manager	General Manager-Nuclear Services Assistant Vice President Nuclear Operations Support General Manager- Nuclear Engineering	X ₃ X X

NOTES

- 1 - This indicates the level of emergency coordinator function activation required for the emergency level.
- 2 - The Emergency Duty Officer is contacted for all events classified as an Unusual Event or higher. He/she may or may not respond to the emergency coordinator function of this level event. His/her response would be based on the conditions of the incident.
- 3 - The Emergency Response Manager is contacted for all events classified as an Alert or higher. He/she may or may not respond to the emergency coordinator function to this level event. His/her response would be based on the conditions of the incident.

TABLE 1-2
HOPE CREEK NUCLEAR GENERATING STATION
CORRELATION TO SUPPLEMENT 1 OF NUREG-0737, TABLE 2
(NUREG-0656, TABLE 8-1)

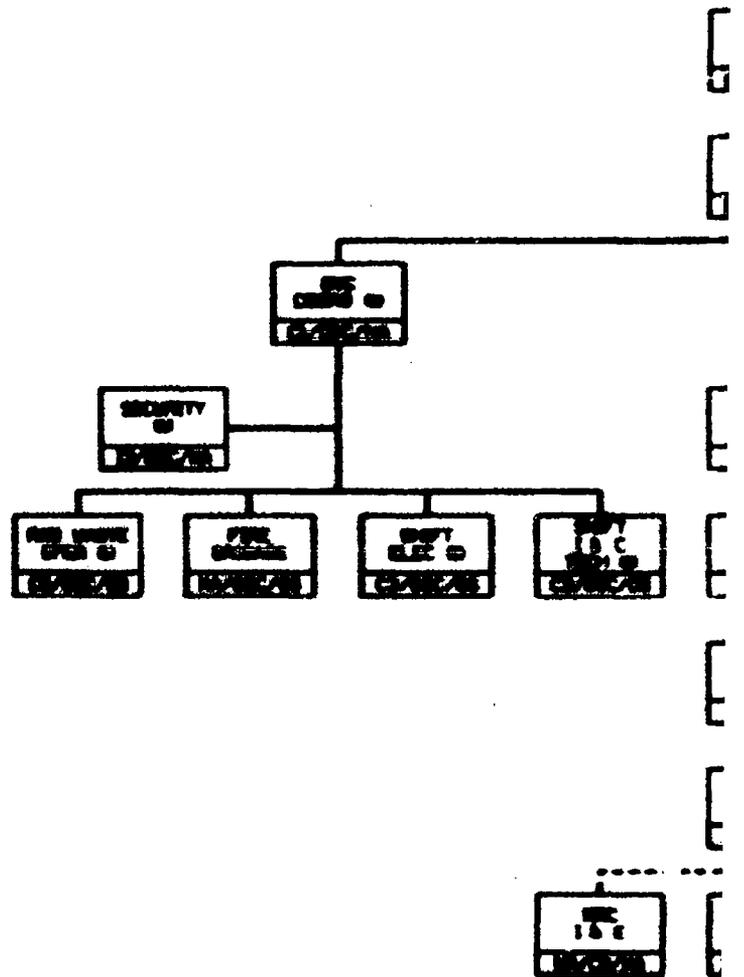
Major Functional Area	Major Tasks	Position Title or Expertise	On * Shift	Additional capability	
				10 min.	60 min.
Plant Operations and Assessment of Operational Aspects		Senior Nuclear Shift Supervisor (SRO)	1 A5		
		Nuclear Shift Supervisor (SRO)	1 B2		
		Control Operators	2 B3		
		Equipment/Utility Operators	2 B6		
Emergency Direction and Control (Emergency Coordinator)		Senior Nuclear Shift Supervisor	1** A5		
Notification/Communication	Notify licensees, State local and Federal personnel & maintain communication		1 B4	1 B5	2 F9
Radiological Accident Assessment and Support of Operational Accident Assessment	Rear-site ROP - Manager	Senior Manager			01
	Offsite Dose Assessment	Radiation Protection Supervisor (RP)		1 E1****	
	Offsite Surveys	Tech., Tech. Asst., or Tech. Helper, (RP)		2 D6	2 D6
	Onsite (out-of-plant)	Tech., Tech. Asst., or Tech. Helper, (RP)		1 E12	1 E12
	In-plant surveys	Tech., Tech. Asst., or Tech. Helper, (RP)	1 E10	1 E3	1 E11
	Chemistry/Radio-chemistry	Tech., Tech. Asst., or Tech. Helper, (Chem.)	1 E17		1 E10
Plant System Engineering, Repair and Corrective Actions	Technical Support	Nuclear Shift Technical Advisor Core/Thermal Hydraulics Electrical Mechanical	1 B1	1 P6*****	1 P3 1 P4
	Repair and Corrective Actions	Mechanical Maintenance/ Rad Waste Operator Electrical Maintenance/ Instrument and Control	1** C5 1** C3	1 C1 1 C2	1 C4 1 C5 1 C4
Protective Actions (In-Plant)	Radiation Protection:	Tech., Tech. Asst., or Tech. Helper (RP)	2** E14 E10	2 E14	2 E16
	a. Access Control b. RP Coverage for repair, corrective actions, search and rescue first-aid & firefighting c. Personnel monitoring d. Dosimetry				

TABLE 3-2 (continued)
 BOPF CORE NUCLEAR GENERATING STATION
 TO SUPPLEMENT 1 of WREG-0717, TABLE 1
 (WREG-0654, TABLE B-1)

Major Functional Area	Major Tasks	Position Title or Expertise	On * Shift	Additional capability 10 min.	60 min.
Firefighting			Fire Brigade per Technical Specifications		Local Support
Rescue Operations and First Aid			**		Local Support
Site Access Control and Personnel Accountability	Security, fire fighting, communications, personnel accountability	Security Personnel	All per Security - Plan		Local/State Support
			Total	10	11
					15

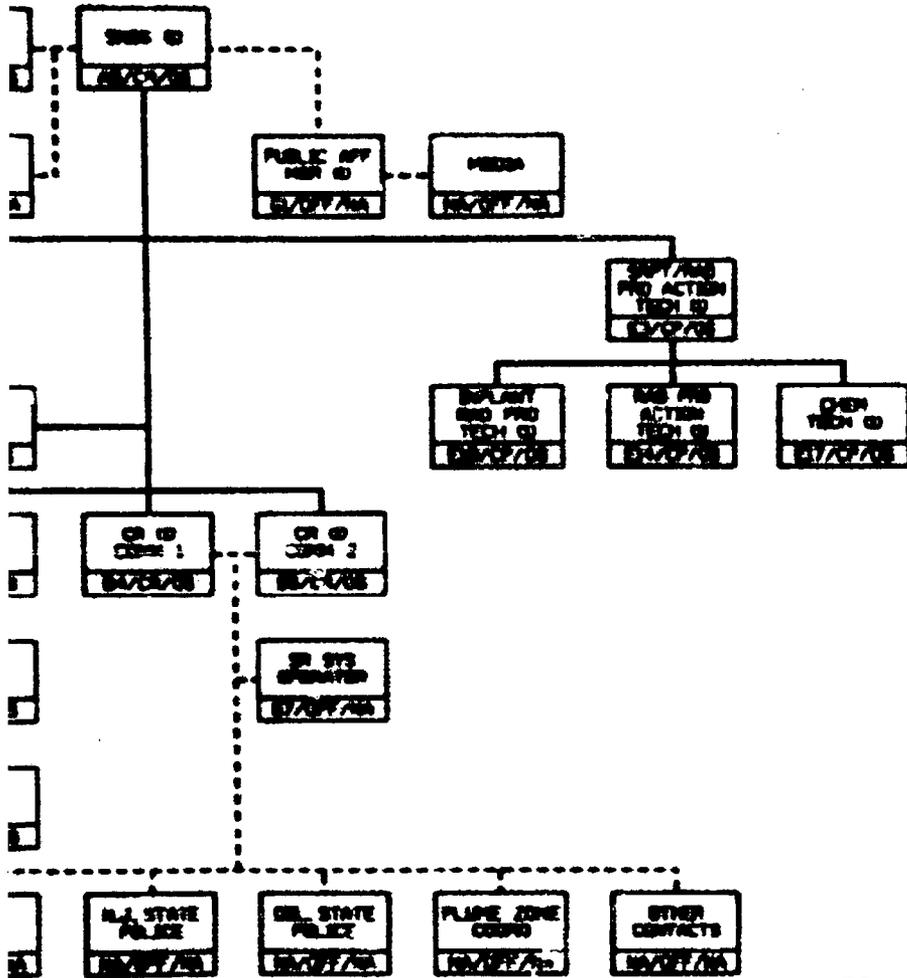
Notes:

- * For each unaffected nuclear unit in operation, maintain at least one Shift Supervisor, one Control Operator and One Equipment/Utility Operator.
- ** May be provided by Shift personnel assigned other functions.
- *** Overall directions of facility response to be assumed by near-site BOP Emergency Response Manager when all centers are fully manned. Direction of minute-to-minute facility operations remains with senior manager in technical support center or control room.
- **** Will be performed by the Shift Radiation Protection Technician (RT) until relieved by the Radiation Assessment Coordinator.
- ***** Performed by Nuclear Shift Technical Advisor until relieved by Core Thermal Engineer.

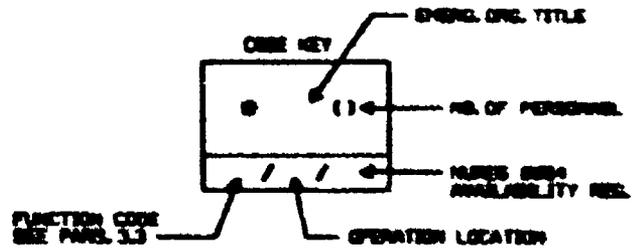


TI APERTURE CARD

Also Available On
Aperture Card



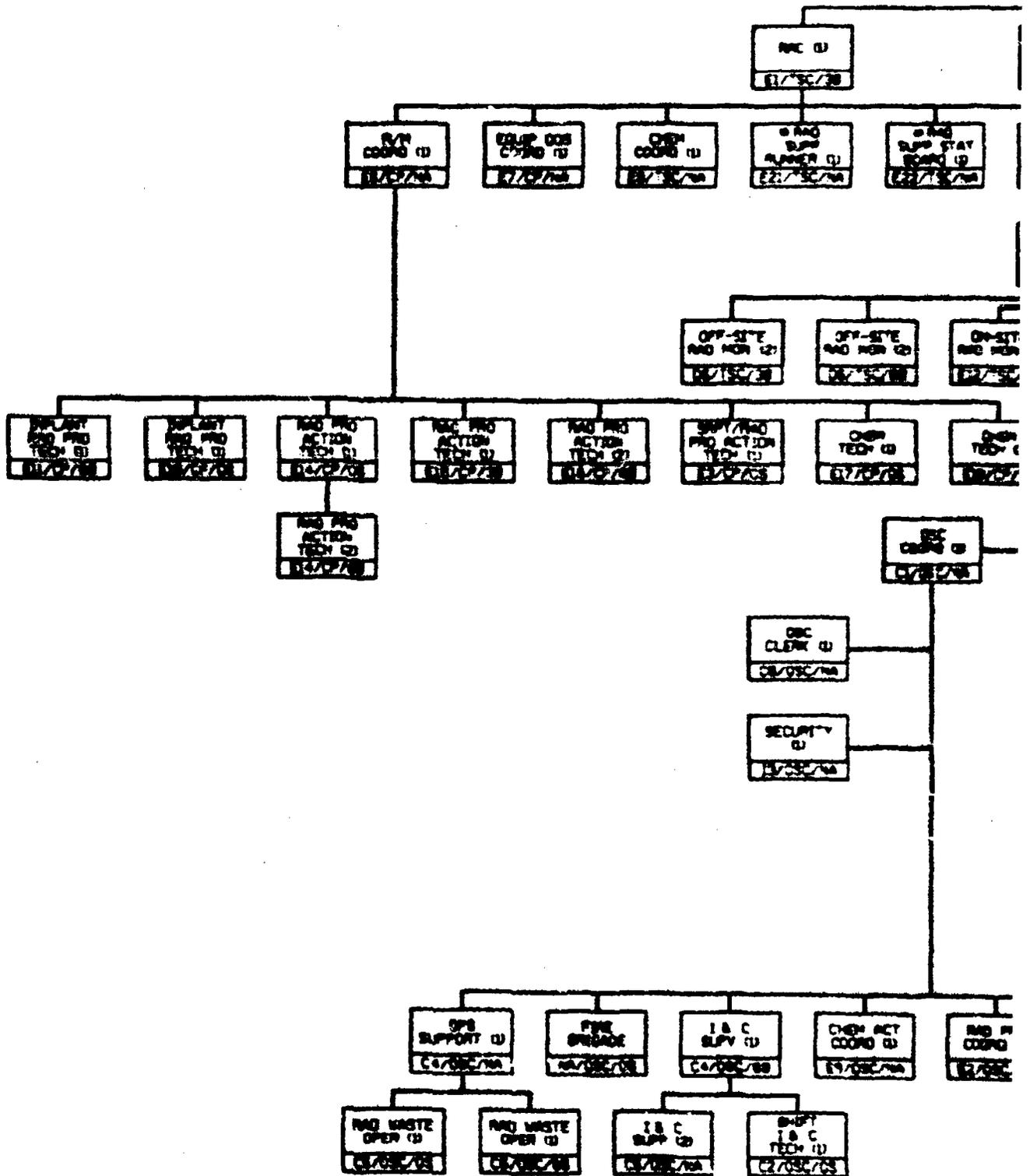
ON SHIFT AND INITIAL AUGMENT EMERGENCY RESPONSE ORGANIZATION



SOLID LINE — COMMAND AND CONTROL
DASHED LINE — COMMUNICATION FLOW

FIGURE 3-1

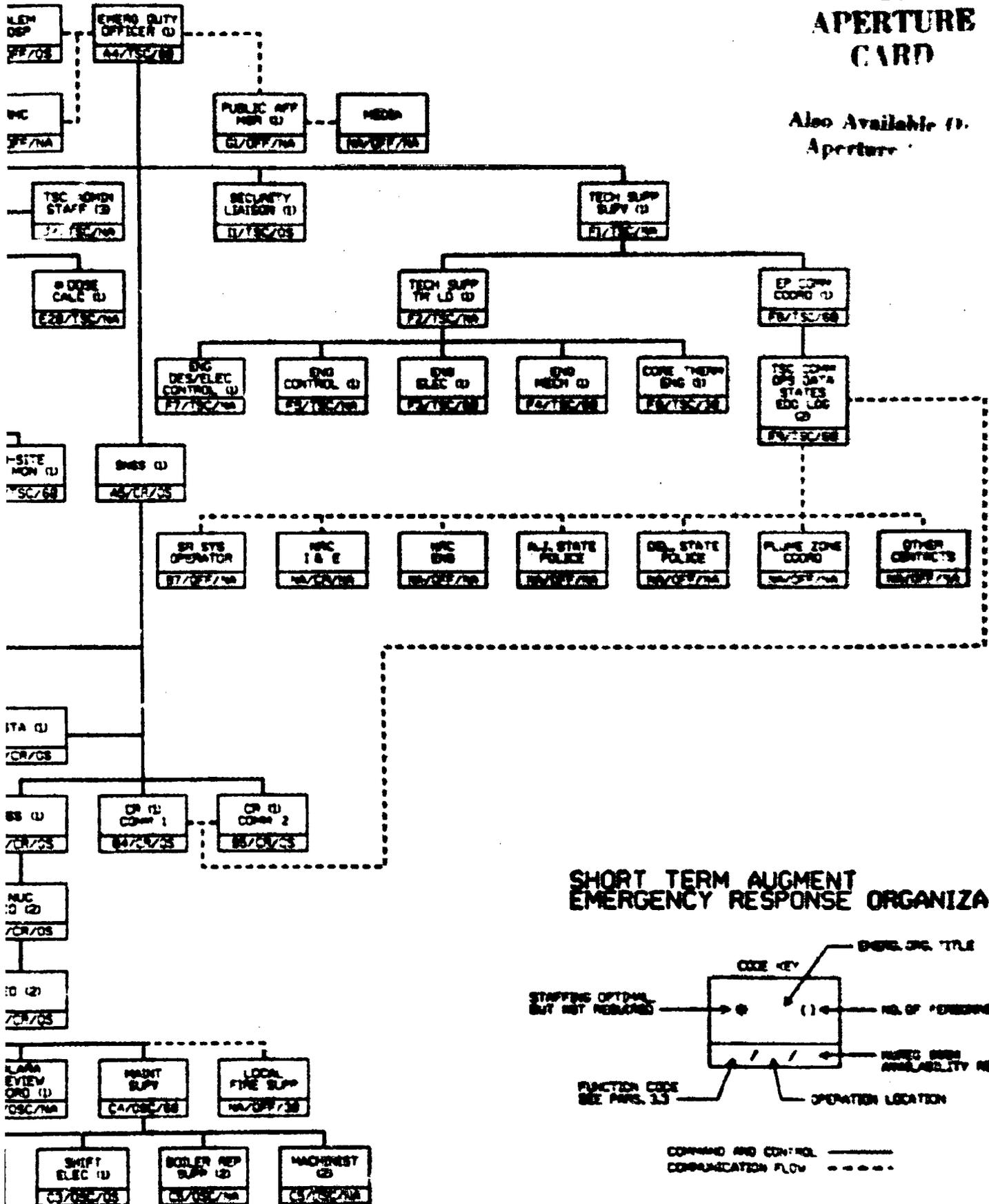
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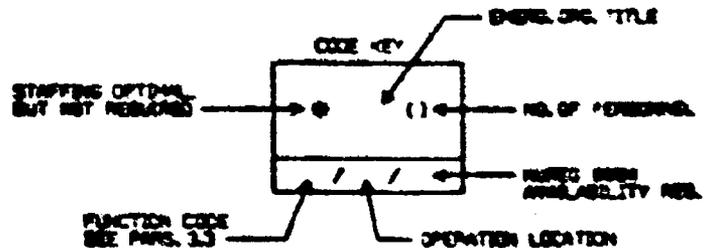
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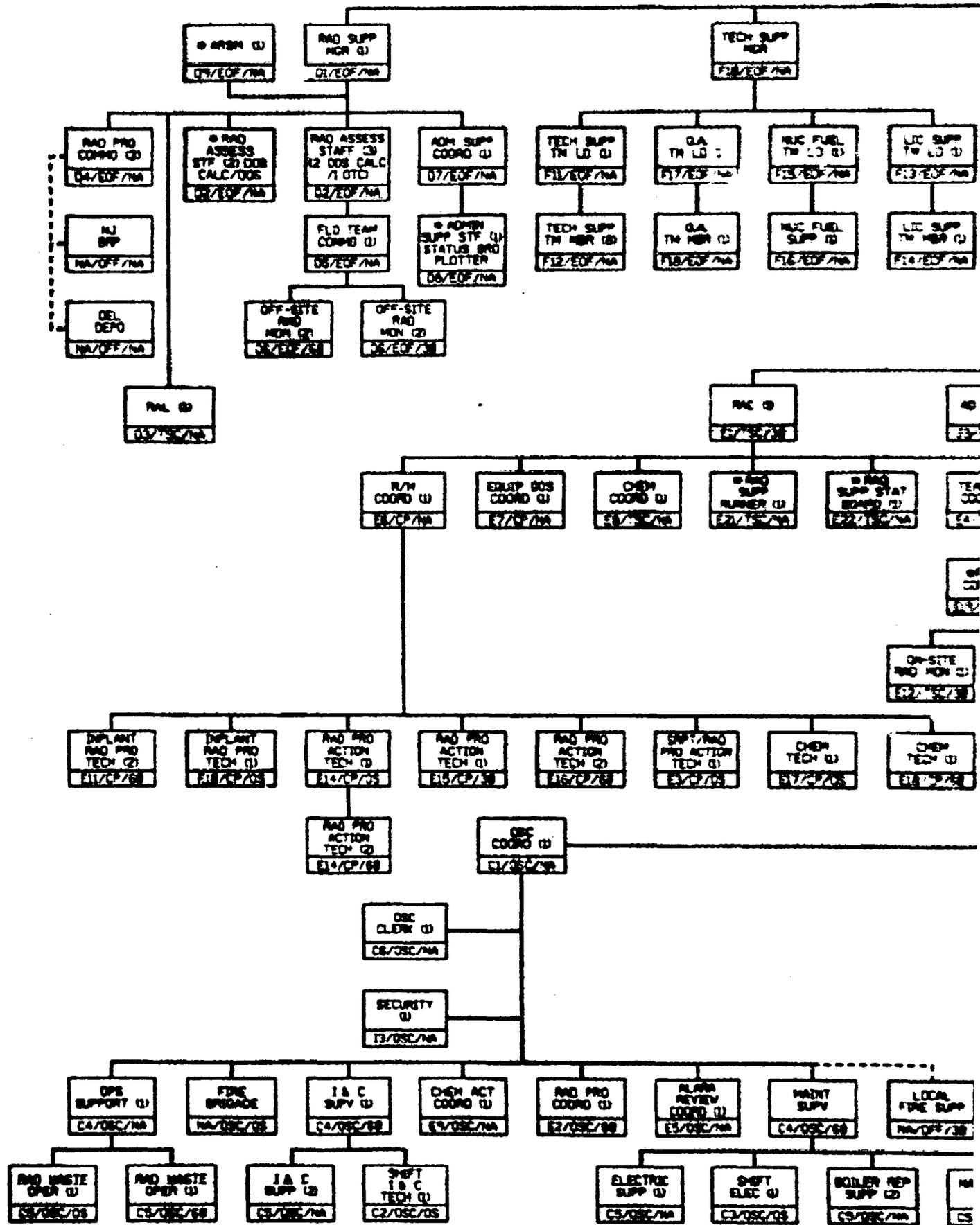
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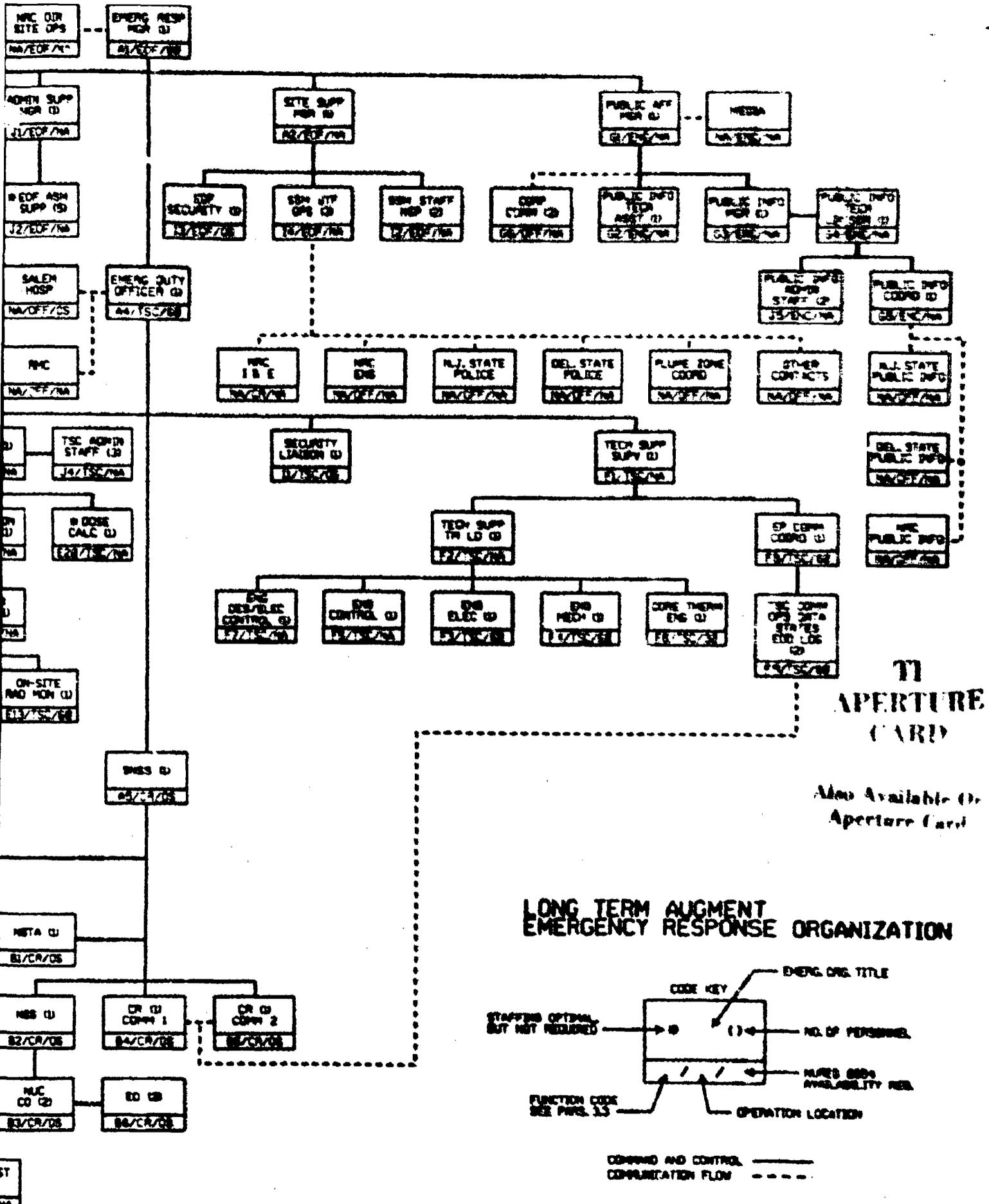
SHORT TERM AUGMENT EMERGENCY RESPONSE ORGANIZATION



COMMAND AND CONTROL ———
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SECTION 9.0

EMERGENCY FACILITIES AND EQUIPMENT

REVISION 8

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9.0 EMERGENCY FACILITIES AND EQUIPMENT

Emergency facilities and equipment were developed to meet the intent of NUREG-0737, Supplement 1, except as indicated in Sections 9.1 and 9.2 below.

9.1 Onsite Emergency Facilities and Equipment

Control Room Area

The Control Room (CR) area has been designed to meet the applicable habitability requirements. Typical emergency equipment to be provided in the Control Room area and Operations Support Center (OSC) is shown in Table 9-1.

The following communications are available in the Control Room:

- 1) Direct line to NRC (ENS) - Automatic ringdown private line to NRC, Bethesda, MD.
- 2) Direct Line to Electric System Operations Center (ESOC) - Automatic ringdown private line to ESOC via PSE&G Private Microwave System.
- 3) Three (3) Nuclear Emergency Telecommunications System (NETS) Telephones, located as follows:
 - Operators Console
 - Operators Console
 - Rad. Data Equipment area
- 4) Hope Creek Dimension 2000 Extension
- 5) ESSX I Extension - Telephone draws outside dial tone "Dial 9", from an ESSX I Central Office located in Newark, NJ via PSE&G Private Microwave System.
- 6) EMPAD (Emergency Radio) - radiofrequency communications
- 7) National Warning System (NAWAS)
- 8) Station paging system

Communications available from the adjacent Senior Nuclear Shift Supervisor's Office are as follows:

- 1) Three (3) NETS Telephones to be used for:
 - Operations Data
 - State/County Notification
 - TSC/OSC/EOP, etc.
- 2) ESSX I extension

- 3) Direct line to NRC (ENS)
- 4) Hope Creek Dimension 2000 extension
- 5) Emergency/Security radio communications

Operations Support Center

The Operations Support Center (OSC) is located in the conference room (Figure 9-1) adjacent to the Control Room. In the event of an emergency, operations personnel not on duty and other support personnel report to the OSC to form repairs and corrective actions teams. Additionally an OSC Coordinator is designated to coordinate the teams efforts.

The following communications are available in the OSC:

- 1) Four (4) NETS Telephones
- 2) Two (2) Dimension 2000 extensions

If personnel requirements exceed the capacity of the OSC, an alternate facility is used.

Technical Support Center

The Technical Support Center (TSC) for Hope Creek Generating Station provides a well equipped location onsite to support plant management during an emergency. The TSC functions as an augmented communication/analysis center of technical data to supplement the Control Room staff's technical analysis and to support plant operations personnel.

The TSC is used by members of the emergency response organization to relieve control room operators of (and remove from the control room) any plant specific duties not directly related to the direct handling of plant controls. Such duties include directing analysis and assessment of the emergency conditions and performing functions associated with the Emergency Operations Facility, when that is not activated.

The TSC is located on Elevation 132 in the reactor building (Figure 9-2) but isolated and shielded from the rest of the reactor building. The TSC meets all habitability requirements outlined in NUREG-0737, Supplement 1.

The TSC is used as the primary source of inplant information that is made available to offsite local, state, and federal agencies until the EOF is activated and assumes many of these information, data, and communications functions. The

analytical and assessment capabilities assigned to the TSC include:

- . Radiological Monitoring System (RMS)
- . Control Room Integrated Display System (CRIDS) which includes the Safety Parameter Display System (SPDS).
- . Computerized Dose Assessment.

Documentation available within the TSC assists in a variety of analyses and assessments. Document Groups include:

1. Emergency Plan Implementing Procedures.
2. Normal Operating Procedures.
3. (Emergency) Abnormal Operating Procedures.
4. Plant Technical Specifications.
5. Final Safety Analysis Report.
6. Selected Vendor Manuals.
7. Technical Drawings.

Additional documentation is immediately available at the nearby Technical Document Room.

The TSC is located within the protected area convenient to both the Control Room and Control Point and is used exclusively to support the HCGS. Access is controlled procedurally, by security, and structurally, through single-entry access. Other entries and exits are maintained locked.

Habitability is controlled to meet the same habitability standards as required in the Control Room. The heating, ventilating, and air conditioning (HVAC) systems include the use of high efficiency particulate absorber (HEPA) and charcoal filtration, which prolongs habitability should inplant conditions degrade.

Sufficient monitoring and protective equipment is kept in a secured area, the Radiation Protection Locker, of the TSC and available to the TSC staff.

The EDO or a designated person will be responsible for activating this center. Typical emergency equipment to be provided in the TSC is shown in Table 9-2.

The following communications are available in the TSC:

- 1) Twenty (20) NETS Telephones - (one used solely for facsimile equipment, the remaining nineteen for voice communications).

- 2) Four (4) ESSX I Extensions
- 3) Twelve (12) Dimension 2000 Extensions
- 4) EMRAD Radiofrequency Communications
- 5) NAWAS Telephone

The TSC is activated for Alert, Site Area Emergency, or General Emergency action levels. The TSC is used as the assembly point for utility personnel, onsite vendor support, NRC, or other personnel who are directly involved in assessment of an accident and mitigation.

It is estimated that this facility can be fully activated within one hour following initial notification of personnel assigned to the TSC. This estimate is only a target value and may vary based on initial notifications, travel, and other conditions.

Other Emergency Facilities and Equipment

1) Control Points

During normal operation, these areas located at the 124' and 137' elevations serve as the regular Access Control Points for personnel entering or leaving the Radiological Control Area. Emergency equipment is provided at the Main Control Point (137' Elevation) and is listed in Table 9-3.

The following communications links are available at the Main Control Point:

- 1) Two (2) NETs Telephones
- 2) Direct line to NRC/HPN

2) Emergency Vehicles

- a) An emergency van is also available. Equipment provided in the van is listed in Table 9-4.
- b) An ambulance is available to transport injured and/or contaminated personnel to Salem Memorial Hospital or other facility (see Table 9-5).

Onsite Emergency Equipment - Assessment

Onsite instrumentation, which can be used to initiate emergency measures, is described in the implementing procedures of this plan. Station assessment instrumentation

meets the intent of Regulatory Guide 1.97 as indicated in Hope Creek FSAR Section 1.8.1.97.

1) Geophysical Instruments

Seismic Monitoring

Control Room alarm is provided in the event of seismic activity associated with Operation Basis Earthquake (OBE). Seismic monitoring is performed by triaxial accelographs (with a range of +1g and sensitivity of 0.01g) multi-channel recorders and response spectrum analyzers. Time-history accelographs are placed in five (5) locations throughout the plant site. A complete discussion of seismic instrumentation is provided in Hope Creek Final Safety Analysis Report (FSAR), Section 3.7.4

River Level Monitoring

River water levels at each service water pump sump, upstream of the intake structure, are indicated at the Control Room. This system includes two (2) level sensing elements, two (2) transmitting/recording channels, and a signal conditioner.

The geophysical instrumentation monitors the parameters required for evaluating action levels contained in the Emergency Classification Guide (ECG) and Emergency Plan Implementing Procedures I-2 through I-4.

The geophysical instrumentation at the Salem Generating Station (SGS) provides backup capability.

2) Radiological Monitoring Instrumentation

The radiological monitors consist of process radiological monitors and area monitors. The system continuously displays and/or records the radiation levels in key areas.

The listing of the radiation monitoring channels which may be used to assess an accident are provided in Table 9-7. A complete description of the radiation monitoring program is provided in FSAR Sections 11.5 and 12.3.4. PSE&G also has portable hand-held instruments which can be used during an emergency.

Sampling of reactor coolant and containment gaseous activity will be performed using special sampling systems. The final release point will be continuously monitored by the RMS for

noble gases, and continuously sampled for particulates and iodines.

3) Process Monitors

In order to provide the operators with essential information on plant conditions during an emergency, various plant processes are continuously monitored. Many of these processes will involve Limiting Conditions for Operations (LCO) and are controlled by the Technical Specifications. If an LCO parameter "goes out of specification" it results in the declaration of an Unusual Event. The intent of this action is to rapidly identify abnormal conditions before they become more serious. These parameters would be monitored closely during an accident for assessment purposes.

4) Fire Detection

The station Fire Protection System is designed in general accordance with the National Fire Protection Association's standards. Any fire initiates emergency action. An alarm is initiated by automatic sprinkler actuation, smoke detector actuation or by manual action.

5) Gaseous Release Path Monitoring

All potential gaseous release pathways are through the north and south plant vents with the exception of the Reactor Building Filtration Recirculation Ventilation System (FRVS) which discharges at the top of the reactor building. The north plant vent serves the off-gas system, the solid radwaste exhaust system, and the chemistry lab exhaust system. The south plant vent serves the following systems:

- a. Reactor Building Ventilation System (RBVS)
- b. Radwaste Area Exhaust (RAE) System
- c. Service Area Exhaust (SAE) System
- d. Turbine Building Exhaust (TBE) System

- e. Turbine Building Compartment Exhaust (TBCE) System
- f. Turbine Building Oil Storage Room Exhaust (TBOE) System
- g. Gland Seal Exhaust
- h. Mechanical Vacuum Pump Discharge

The locations of the north and south plant vents are shown on the general arrangement drawings (Figures 1.2-1, 1.2-8 and 1.2-9 of Hope Creek FSAR).

Radiation monitors are provided in the exhaust ductwork to isolate normal heating, ventilating, air-conditioning (HVAC) of the reactor building and initiate the PRVS on high radiation. Upon reactor building isolation, the PRVS recirculation system recirculates the reactor building air through high-efficiency particulate adsorber (HEPA) and charcoal filters for cleanup. After reaching a steady state, approximately 250 cfm of air exhausted from the PRVS recirculation system is filtered again by the PRVS ventilation system equipped with HEPA and charcoal filters, and then released to the atmosphere through a vent at the top of the reactor building to maintain the building at a negative pressure of approximately 0.25-inch water gauge.

Continuous monitoring or sampling is provided for all potential pathways of airborne radioactive releases, with main control room annunciation to indicate when levels are higher than allowed limits.

9.2 Offsite Emergency Facilities and Equipment

The Emergency Operations Facility (EOF) for Hope Creek Generating Station is controlled and operated by Public Service Electric & Gas Company (PSE&G). It serves as the near-site support center for management of the aggregate response to a radiological emergency as defined by NUREG-0654, Revision 1, Appendix 1. PSE&G commits to operating the EOF so as to fulfill the functional requirements of paragraph 4.1 of NUREG-0737, Supplement 1. It should be noted that based on the backup EOF exemption granted for the Salem Generating Station Plan, and the fact that Artificial Island (the location of Salem and Hope Creek Generating Stations) is treated as a single site, it is assumed that the exemption is applicable to Hope Creek Generating Station.

The EOP provides facilities and equipment to support staff performance of four major functions:

- 1) Management of overall emergency response activities
- 2) Coordination of radiological and environmental assessment
- 3) Development of recommendations for protective actions for the public
- 4) Coordination of emergency response operations with Federal, state and local agencies in accordance with the Emergency Plan.

The following communications are available at the Emergency Operations Facility (EOP):

- 1) Forty-two (42) Nuclear Emergency Telecommunications System (NETS) telephones - (two (2) extensions used solely for Facsimile equipment, the remaining forty (40) used for voice communications). NETS telephone extensions provide the primary communications for the EOP to function under emergency conditions.
- 2) Sixteen (16) ESS I Extensions - ESSX I extensions provide reliable secondary communications. These telephones draw "Dial 9" dial tone from the Newark ESSX I Central Office via PSE&G Private Microwave System, thereby bypassing local telephone switching facilities.
- 3) EMRAD radiofrequency Communications
- 4) NAWAS telephones

Systems described in 1 & 2 above are DC Systems. Four-hour battery is provided for NETS Telephones and eight-hour battery for the PSE&G Private Microwave System for ESSX I telephone extensions.

Activation and use of the Emergency Operations Facility is at the option of PSE&G in the Unusual Event and Alert emergency classification. The option is exercised depending upon management's evaluation of the potential consequences of the situation based upon the nature of initiating conditions, trends subsequently perceived, and results of actions taken to mitigate potential consequences. EOF activation is mandatory in the event of declaration of a Site Area Emergency or General Emergency.

The activated EOF is managed by a PSE&G Vice President, who is designated Emergency Response Manager. He directs PSE&G's offsite response activities and coordinates actions with and provides appropriate support to the Technical Support Center Emergency Duty Officer. The EOF is staffed by PSE&G, Federal, state, and other emergency personnel designated by the HCGS Emergency Plan.

Equipment is provided in the EOF for acquisition, recording, display and evaluation of containment conditions and radiological releases and meteorological data. The data is analyzed and evaluated to determine the nature and scope of any protective measures which may be recommended to state and local officials for protection of the public health and safety, if the magnitude and potential effects of a radioactive release dictate. The equipment includes a display of information collected by the Radiological Monitoring System (RMS). All equipment, displays, and instrumentation to be used to perform essential EOF functions are located in the EOF. A Control Room Integrated Display System (CRIDS) data link supplies plant variables upon request via a typewriter log.

Facilities are provided in the EOF (as depicted in the EOF layout, Figure 9.3) for NRC, FEMA, New Jersey, Delaware and local emergency response agency personnel responsible for implementing emergency response actions for protection of the general public. This arrangement enhances coordination of activities and exchange of information among participating agencies and the PSE&G emergency response organization. The agencies also operate from other offsite control centers located at their respective agency facilities.

Facilities are provided for PSE&G, NRC, New Jersey, and Delaware public information offices. A Press Center is provided for periodic dissemination of information to the public through the news media by spokespersons designated in

the Emergency Plan (normally the Emergency Response Manager).

PSE&G provides normal industrial security for the EOF complex to ensure EOF activation readiness, including lock and key control, a personnel identification system, exterior lighting, and periodic patrols by police and/or private security guards. If the EOF is activated security protection is upgraded. At least one security guard is on duty at all times to control access. All access to the facility, with the exception of the Press Center, is through a single controlled portal. All other access points are secured. The Press Center is isolated from the remainder of the facility and a separate press entrance is provided (See Figure 9.3).

In accordance with the Emergency Plan, the EOF is activated periodically for personnel training and emergency preparedness exercises. Normal use of the facility, which is within PSE&G's Nuclear Training Center, does not degrade EOF activation readiness, operations or equipment reliability.

Location, Structure, and Habitability

The Emergency Operations Facility is located in PSE&G's Nuclear Training Center on Chestnut Street in Salem, New Jersey. This site is located 7.5 miles from the Technical Support Center. The site location is judged to provide operational and logistical benefits with regard to its relationship to the area's transportation system. Salem is at the intersection of the two state highways (Routes 45 and 49) in the area and to county and municipal emergency response offices and resources. Salem is approximately 8 miles by road from the New Jersey Turnpike and Interstate 295, via Route 49. Three county highways, Routes 557, 540, and 581 connect to Routes 45 and 49.

The city of Salem is served by a freight-only railroad and an airfield capable of accommodating small commercial aircraft. In addition, the Nuclear Training Center and the Nuclear Department Administration Building (adjacent to Hope Creek Generating Station) have helicopter landing pads. There is also a landing pad at the Salem Generating Station. This will make possible rapid movement of personnel between the station and the EOF. This transportation network makes the EOF readily accessible by road and air to designated personnel of all agencies and activities assigned an emergency response role by the emergency plan.

The physical structure of the facility has been well engineered for the design life of the plant. The building is a 65,000 square foot structure on reinforced concrete footings and floor slab, with supporting steel columns, beams and joists. The built-up roofing material is supported on a steel deck.

The EOF conforms to all applicable building codes and has been designed to withstand winds and floods with 100-year recurrence frequency. The State of New Jersey Department of Environmental Protection identifies the 10-year and 100-year high-water levels at the EOF site as 7.1 feet and 8.9 feet above mean sea level, respectively. The floor elevation of the EOF is 9.0 feet. The elevation of the road to the EOF is slightly over 4 feet. Thus, record high water levels would flood the access road and preclude access to the EOF by vehicle and could hamper activities of mobile monitoring teams in some areas. The EOF would continue to be accessible by helicopter. Internal EOF operations would continue without adverse impact.

The SGS Final Safety Analysis Report, Environmental Report, Operating License Stage, Appendix B-Report, Site Environmental Studies, identifies high winds with a 100-year recurrence frequency as having a maximum velocity of 100 miles per hour. It is not anticipated that such winds will significantly affect self-contained internal EOF operations. This is due to the strength of building construction and the availability of backup power.

However, activities of mobile monitoring teams would have to be suspended. Under such conditions, extremely high radiation exposures would be correspondingly low. Remote monitoring would continue to be available to the extent transmission lines survive. Similarly, data transmission could be adversely impacted by damage to microwave and radio antennae and transmission lines, particularly if winds were accompanied by electrical storms, which are often associated with squall lines, tornadoes and hurricanes. Under such circumstances, atmospheric conditions could be expected to intermittently affect data transmission and communications.

Twenty sets of protective clothing are maintained at the EOF, in accordance with the emergency plan. In addition, mutual support agreements with other utilities in the region include providing emergency equipment, including radiation survey devices and protective clothing. Sufficient potassium iodide for the staff is also stored in the EOF

emergency equipment locker.

Additional supplies are available from Radiation Management Corporation, Philadelphia, Pennsylvania. A description of the dual channel analyzer used to determine airborne I-131 concentrations is presented in Section 10 of the emergency plan. Detection limits for I-131 are less than 1E-7 micro ci/cc if not masked by noble gases. Masking is not expected to be a factor due to use of silver zeolite filter cartridges in sample collections.

Ten full-face respirators with charcoal filters are maintained in the EOF. However, airborne contamination is not expected to present a major problem at the EOF due to its location and the upgraded ventilation system.

Size

The EOF meets or exceeds the space requirements of paragraph 8.4.1c of NUREG-0737, Supplement 1. Approximately 18,170 square feet of floor space in the Nuclear Training Facility is designated for use as the Emergency Operations Facility. This area includes a 2650 square feet Press Center. Of the remaining 15,520 square feet, 12,509 square feet provide 75 square feet of work space per person for a staff of up to 164 persons and 2432 square feet for conference rooms.

Additional space is available in the building to accommodate another 100 persons in the unlikely event of a situation in which a greatly augmented staff would be required. Normal EOF occupancy by all concerned parties/agencies is not expected to exceed 80 persons. The Emergency Plan designates a minimum total of 71 emergency personnel assignments.

The functional layout of the EOF (Figure 9.3) depicts designated work spaces:

- (1) Space for EOF data system equipment for data transmission and reception (Data Center, Communications Center)
- (2) Space to repair, maintain and service equipment displays and instrumentation (in Nuclear Training Center workshops and labs)
- (3) Space to accommodate communications equipment and its use by EOF personnel to perform their assigned functions

- 4) Space for ready access to functional displays of EOP data (Data Center; provisions for installation of remote terminals in the Dose Assessment Area)
- 5) Space for storage of plant records and historical data or space for the means to readily acquire and display the records (Nuclear Training Center Library)
- 6) Space for PSE&G emergency response activities
- 7) Office space for state, local, and FEMA personnel
- 8) Separate office space to accommodate a minimum of ten NRC personnel during emergency activation of the EOP (NRC offices).

Figure 9-3 depicts the EOP functional layout and illustrates that work areas are situated to facilitate the effective interaction necessary to accomplish operational objectives. Personnel are assigned to work areas in functional groups. Groups which perform related tasks and therefore would have the most need for face-to-face interaction are, in most cases, located adjacent to one another. Each work station is equipped and staffed as appropriate to its function.

The following list identifies functional areas which are provided with maps, diagrams, and/or drawings as appropriate for performance of assigned functions and provides the minimum wall space, in linear feet available for their display:

- | | |
|---|-----|
| 1) PSE&G Radiation Monitoring and Dose Assessment | 56' |
| 2) State and Federal Radiation Monitoring and Dose Assessment | 45' |
| 3) PSE&G Emergency Response Manager | 32' |
| 4) NRC Management | 32' |
| 5) FEMA | 32' |
| 6) NJ Bureau of Radiation Protection | 32' |
| 7) NJ State Police | 32' |
| 8) Delaware Emergency Planning & Operations | 32' |
| 9) PSE&G Public Information Office | 32' |
| 10) NRC Public Information Office | 32' |
| 11) Press Center | 64' |

Radiological Monitoring

The EOF complies with the radiation protection provisions of paragraph 8.4.1B of NUREG-0737, Supplement 1 by providing radiological monitoring equipment in the EOF. This equipment provides the capability to monitor airborne radioactivity (gross beta, gamma, iodine and particulates) to ensure that EOF personnel are not subjected to adverse radiological conditions. Available equipment sensitivity permits detectors to distinguish the presence or absence of radioiodines at concentrations as low as 10^{-7} microcuries/cc. The monitors are portable units which are moved to various points in the facility during an emergency to ensure comprehensive coverage. Survey meters are provided which have sensitivity ranges up to 1000 R/hr. Additional EOF radiation monitoring equipment includes self-reading dosimeters (both high range and low range), TLDS, air samplers and a dual channel analyzer. Radiation monitoring equipment is stored in the emergency equipment locker (Table 9-6).

Instrumentation for continuous monitoring of beta air concentrations is equipped with a strip chart recorder, an alarm light, and bell. The alarm setting is variable and will be set slightly above background to give an early warning of adverse conditions which may affect EOF habitability. In addition, the alarm light provides visual warning of radiation levels. The instrumentation is maintained and calibrated on a regular schedule by station personnel. The Radiological Support Manager's staff at the EOF monitors the habitability when the EOF is activated.

Personnel assigned to the Radiological Support Manager's office have a variety of radiological health physics experience, including nuclear reactor power plant experience.

In addition to the dual channel analyzer for iodine air sample analysis, a beta counter is provided in the EOF for particulate and swipe sample analysis. The counting room is counting equipment is stored in the EOF. Backup counting and more definite analysis is available at the station (emergency situation permitting), the PSE&G Research and Test Laboratory in Maplewood, NJ, and at Radiation Management Corporation in Philadelphia, PA.

Communications

EOF Communications Systems are in compliance with the

SECTION 3

ORGANIZATION

3.1 Normal OrganizationManagement Organization

Public Service Electric & Gas Company (PSE&G) is an investor-owned, public utility, franchised by the State of New Jersey. Its primary purpose is to provide safe, adequate and reliable electric and gas service to its customers at reasonable rates. The Senior Vice President Nuclear as shown in Figure 2-1 reports to the Chairman of the Board, President, and Chief Executive Officer.

The Assistant Vice President - Nuclear Operations Support reports to the Senior Vice President Nuclear. The General Manager - Licensing and Reliability reports to the Assistant Vice President - Nuclear Operations Support. The Emergency Preparedness Manager reports to the General Manager - Licensing and Reliability. The Emergency Preparedness Manager has been delegated the responsibility for developing, implementing, and maintaining a comprehensive program for emergency preparedness, which is designed to protect the health and safety of the public during a nuclear plant accident and interfacing with federal, state and local agencies to coordinate the development of offsite and onsite plans.

The station management organization for both Salem and Hope Creek Generating Stations is divided into four major functional departments. These are the Operations, Maintenance, Technical and Radiation Protection/Chemistry Departments. Charts showing PSE&G organizations are provided as figures in the Facility Technical Specifications.

Shift OrganizationOperations

The Senior Nuclear Shift Supervisor (SNSS) is normally the senior shift member of the station organization. The Senior Nuclear Shift Supervisor has the primary management responsibility for safe operation of the station during the shift. The Senior Nuclear Shift Supervisor maintains an overview of the unit's condition, makes decisions, and directs operations by giving specific directions and

responsibilities to the shift personnel. The Senior Nuclear Shift Supervisor holds a Senior Reactor Operator's License and meets or exceeds the qualifications required by the Facility Technical Specifications.

The Nuclear Shift Supervisor is an extension of the authority and responsibility of the Senior Nuclear Shift Supervisor. The Nuclear Shift Supervisor maintains an overview of the unit's status and condition. In the areas of operation to which he/she is assigned, the Nuclear Shift Supervisor is given the authority and responsibility to make decisions and direct operations by giving specific direction and responsibility to the shift personnel. All operations personnel are subject to the orders, directions and instructions of the Nuclear Shift Supervisor as though he/she were the Senior Nuclear Shift Supervisor.

The Nuclear Shift Supervisor coordinates the activities of the shift personnel with the Senior Nuclear Shift Supervisor to avoid conflicts and to ensure that all operations are performed according to the orders, directions, and instructions of the Senior Nuclear Shift Supervisor. The Nuclear Shift Supervisor holds a Senior Reactor Operator's License and meets or exceeds the qualifications required by Facility Technical Specifications. In the event that the Senior Nuclear Shift Supervisor or Shift Support Supervisor (Operations Support Center Coordinator) is unable to complete a shift, the Nuclear Shift Supervisor fills these positions until that position can be recalled from offsite.

Nuclear Control Operators are assigned to the Control Room in accordance with the requirements of the Facility Technical Specifications. They are responsible for manipulating controls for startup, changing electrical output and reactor power, and plant shutdown, as required. Nuclear Control Operators take directions from the Senior Nuclear Shift Supervisor and Nuclear Shift Supervisor.

The Equipment and Utility Operators perform duties outside the main control room necessary for safe continuous operation of the plant. Their duties include maintaining equipment logs, initiating actions to maintain assigned equipment in a safe condition, and operating auxiliary equipment as necessary to support plant operations. The Equipment and Utility Operators take directions from the Nuclear Control Operators or Nuclear Shift Supervisor.

Fire Brigade and First Aid Team

The on-shift fire department is maintained in accordance with Facility Technical Specifications and is staffed by full-time fire protection operators and firefighters who have received firefighting and first-aid training. The

fire department's staff reports to the senior fire protection supervisor for normal assignments and directions but receives on-shift direction from the Senior Nuclear Shift Supervisor concerning priority response.

The First Aid Team is a collateral duty of the Fire Department. The First Aid Team is staffed by personnel who have received Red Cross multi-media training or its equivalent.

Maintenance

The shift electricians are the members of the Maintenance Department who are available to perform surveillance and preventive and corrective maintenance on electrical distribution equipment. This position reports to the Maintenance Department for normal assignments and supervision but receives on-shift direction from the Nuclear Shift Supervisor concerning priority repairs to support plant operations.

Maintenance on valves, pumps and other mechanical components is the responsibility of the Maintenance Department mechanics. These individuals are not included as part of a shift's normal staffing complement but are available, as needed, to support the required repairs.

The scheduled I&C technicians are the members of the Maintenance Department who are responsible for preventive and corrective maintenance on any instrumentation and controls. This position reports to the Maintenance Department for normal assignments and supervision but receives on-shift direction from the Nuclear Shift Supervisor concerning priority repairs to support plant operations.

Technical

The technical engineers with specialties in controls, electrical, mechanical, and core thermal engineering, who are assigned to the Technical Support team, are members of the station Technical Department and/or PSE&G Corporate Nuclear Engineering Department. The Technical Department provides primary system engineering support during normal operations.

Security Organization

The Security Shift Lieutenant and the Security Force are responsible for station security. These persons are assigned in accordance with the Station Security Plan and

report to the security force supervisor for normal assignments and directions, but receive on-shift direction from the Senior Nuclear Shift Supervisor, concerning special access control requirements or accountability.

Radiation Protection/Chemistry Organization

The Salem Generating Station backshift Radiation Protection/Chemistry Organization consists of two Radiation Protection Technicians and one Chemistry Technician. Hope Creek has a similar organization but also uses an additional Chemistry Technician.

When Radiation Protection supervision is not present, the Radiation Protection Technicians/Assistants report to the Senior Nuclear Shift Supervisor. Radiation Protection personnel on the backshift are normally responsible for conducting routine and special surveys, operating counting room instrumentation, maintaining access control at the control points, writing Radiation Work Permits and providing job coverage as required.

The Chemistry Technicians/Assistant are the members of the station Radiation Protection/Chemistry Department who are responsible for performing reactor coolant chemistry sampling and analysis. This position reports to the Radiation Protection/Chemistry Department for normal assignments and supervision, but receives on-shift direction from the Senior Nuclear Shift Supervisor concerning sampling required to support station operations.

3.2 Emergency Organization Functional Description

The emergency organization is explained by functional areas in this section and in Figures 3-1, 3-2, and 3-4. Figures 3-1 and 3-2 indicate onsite staffing for both stations. Only the OSC and TSC staff for the affected station will be initially activated. Detailed job descriptions for each box shown in the figures are provided in Section 3.3 below.

Emergency Direction and Control

The responsibility for emergency direction and control, the decision to notify and recommend offsite protective action and commitment of corporate resources is held by the individual with the emergency coordinator function. This function passes from the Senior Nuclear Shift Supervisor to the Emergency Duty Officer and finally to the Emergency Response Manager as these individuals augment the emergency

organization. The responsibilities associated with the emergency coordinator function are non-delegatable.

On-Shift and Initial Augment

The Senior Nuclear Shift Supervisor (SNSS) initially has the emergency coordinator function and provides emergency direction and control (unless relieved by an Emergency Duty Officer qualified member of Station Management). The Senior Nuclear Shift Supervisor has the authority and responsibility to immediately and unilaterally initiate any emergency actions. The Nuclear Shift Supervisor (NSS) takes operational control of the unit while the SNSS is fulfilling the emergency coordinator function emergency response duties.

The Nuclear Shift Technical Advisor (NSTA) provides an independent engineering assessment of plant conditions and advises the Senior Nuclear Shift Supervisor of potential problems recognized as a result of the assessment. (The NSTA and the NSS may be the same individual)

Short-Term Augment

Following the assumption of the emergency coordinator function (from the SNSS) by an Emergency Duty Officer (EDO) qualified member of station management, the EDO has the authority and responsibility to immediately and unilaterally initiate any emergency actions. The Senior Nuclear Shift Supervisor then takes control of the unit and is responsible for issuing all orders concerning operations which require direction by a senior operator licensed individual. The Nuclear Shift Supervisor assists the Senior Nuclear Shift Supervisor.

The Nuclear Shift Technical Advisor provides an engineering assessment of plant conditions and advises the SNSS.

Long-Term Augment

Following the assumption of the emergency coordinator function (from the EDO) by the Emergency Response Manager (ERM), the ERM has the authority and responsibility to immediately and unilaterally initiate emergency actions. The Site Support Manager (SSM) provides normal direction to the EDO from the ERM. The SSM is also responsible for assessing and advising plant-related protective action recommendations to the ERM. The SSM receives plant condition information from the Technical Support Supervisor located in the TSC.

The EDO retains the authority and responsibility for immediately and unilaterally initiating measures to protect the plant and onsite personnel.

Plant Operations

During an emergency, the normal control room staff is maintained. A more senior member of the station management, who holds a Senior Reactor Operators license, such as the Operations Manager, may assume direct control of the shift after completing proper relief procedures while the SNSS shall maintain the emergency coordinator function until relieved by the EDO.

Corrective Actions and Support of Operations

On-Shift and Initial Augment

Upon determination by the Senior Nuclear Shift Supervisor that an emergency exists (Alert classification or higher), the Operations Support Center (OSC) is activated. A representative of the fire department, a radwaste operator, equipment/utility operators, an electrician, and a scheduled I&C technician report to either the OSC or other onsite location as directed.

This initial group of individuals is under the control of the Shift Support Supervisor. Additional support personnel are called in by the Senior Nuclear Shift Supervisor.

Short-Term Augment

The OSC Coordinator takes control of the corrective action and support function from the Senior Nuclear Shift Supervisor and acts as an interface between the Senior Nuclear Shift Supervisor and the OSC support teams. The OSC Coordinator assumes the responsibility for directing corrective action and support activities and is responsible for supplementing the OSC staff as needed. The OSC Coordinator ensures through coordination with the Emergency Duty Officer, that adequate OSC staffing is available prior to accomplishing a site evacuation. In addition to the on-shift staffing, an additional electrician and I&C technician are called in.

The augment shall also consist of a supervisory group and respective support personnel functioning under the direction of the OSC Coordinator. The supervisory group consists of representatives from Maintenance, Operations, and Radiation Protection/Chemistry. These supervisors shall operate from the OSC. Support personnel shall report to the Ready Room until required for corrective actions. The Radiation Protection Supervisor for exposure control (OSC) shall additionally serve as a liaison between Radiation Protection at the Control Point and the OSC staff.

Long-Term Augment

The long-term augment consists of additional radwaste operators, electricians and mechanics as necessary to support emergency response operations, and is under the control of the OSC Coordinator. This augment may include additional contractual assistance as established through the Administrative Support Manager in the EOF.

Offsite Radiological Accident Assessment

On-Shift and Initial Augment

The Shift Radiation Protection Technician (SRPT) is the individual responsible for radiological accident assessment on shift. The SRPT will report to the Control Point (or Control Room) to obtain radiological and meteorological data from the Radiation Monitoring System (RMS). Trained personnel are available on shift to do inplant and out-of-plant radiation surveys. The SRPT will make offsite dose projections using prescribed methods. These dose projections are used as a basis for offsite protective action recommendations (radiological), which the SRPT relays to the Senior Nuclear Shift Supervisor in the Control Room. The Senior Nuclear Shift Supervisor considers both the recommendation from the SRPT and his own evaluation of the plant status (predetermined protective action recommendation) to derive an appropriate protective action recommendation to be communicated to offsite authorities. The SRPT also assigns onsite radiation protection and chemistry personnel to obtain radiation monitor data and coolant samples for analysis.

Short-Term Augment

The Radiological Assessment Coordinator (RAC) and additional support personnel report to the TSC to assume responsibility for offsite dose projection and monitoring. The Radiation Protection Supervisor Offsite directs onsite and offsite monitoring personnel and performs/directs dose calculations. The RAC provides information to the communicators to give the States of Delaware and New Jersey updates of the Station Status Checklist to enable the states to calculate an independent offsite dose projection.

Long-Term Augment

When the EOF is activated, the Radiological Support Manager (RSM) has responsibility for, offsite dose projections and offsite field monitoring. The RSM directs offsite dose projection

and field monitoring from the Emergency Operations Facility (EOF). Communicators in the EOF assume the duties of providing offsite authorities with updates of the Station Status Checklist.

The Offsite Teams radio survey results to an RSM communicator. Radiological assessment staff members make offsite dose projections using either computer or manual calculational methods and/or Offsite Team survey results.

The dose projections are used as a basis for offsite protective action recommendations, which the RSM provides to the Emergency Response Manager.

The Emergency Response Manager considers both the recommendation from the RSM and the evaluation of the plant status to derive an appropriate protective action recommendation to offsite authorities via a communicator. The RSM uses additional information from plant sample analysis, State offsite monitoring teams, and other support organizations to provide the best possible radiological dose assessment and protective action recommendation.

Radiation Protection Onsite

On-Shift and Initial Augment

The SNSS is the individual responsible for radiation protection onsite. The SNSS is supported by shift radiation protection/chemistry personnel (both Hope Creek and Salem), available to do inplant, onsite radiation monitoring, PASS system preparation, and PASS sampling and analysis. Radiation Protection/Chemistry personnel also support onsite corrective actions, access control, personnel monitoring, dosimetry, search and rescue and first aid.

Short-Term Augment

As the emergency organization is augmented, additional Radiation Protection personnel report to the Control Point and/or the TSC. The Shift Radiation Protection Technician (SRPT) continues with dose assessment and reports/gives results to the SNSS/EDO until relieved by the RAC. When relieved (turnover completed), the SRPT assists with Radiation Protection activities at the Control Room/Control Point as needed.

The Radiation Assessment Coordinator assumes responsibility for Onsite Radiation Protection/Chemistry personnel from the TSC. Radiation Protection personnel at the Control Point report to the Radiation Protection Supervisor - Inplant who in turn reports to the RAC. Chemistry personnel at the control point report to the Chemistry Supervisor at the control point. Additional support personnel are shown in Emergency Organization Figure 3-2.

Long Term Augment

The Radiological Assessment Coordinator continues to be responsible for onsite radiation protection at the TSC. The radiation protection staff is augmented as required by the emergency conditions. Additional radiation protection personnel report to the Radiation Protection Supervisor - Inplant at the Control Point who, in turn, reports to the Radiological Assessment Coordinator at the TSC. This augment may include additional contractual assistance as established through the Administrative Support Manager in the EOF.

Plant Systems Assessment and Engineering

On-shift and Initial Augment

The Nuclear Shift Technical Advisor (NSTA) an individual experienced in core analysis and thermohydraulics provides plant systems assessment and evaluates plant conditions relative to emergency action levels. Recommendations for protective actions are made to the Senior Nuclear Shift Supervisor on plant conditions.

Short-Term Augment

The NSTA normally remains in the control room and directly advises the Senior Nuclear Shift Supervisor on plant assessment. The short-term augment personnel for the areas of Core/Thermohydraulics, Nuclear Fuels, Mechanical Engineering and Electrical Engineering report to the Technical Support Supervisor in the TSC.

At the TSC the Technical Support Supervisor (TSS) takes command and direction of the plant assessment group composed of the operational assessment engineers. The TSS is responsible for making technical plant assessments and providing recommendations on protective actions to the EDO.

The technical support team in the TSC is a group of engineers providing engineering support for the TSC and Control Room. This group, under the direction of the Technical Support Supervisor, provides an assessment of plant systems and trends. The operational assessment engineer(s) are engineers who are familiar with plant operational specifics.

Long-Term Augment

Assistance for the technical support team in the TSC will be coordinated via the Technical Support Manager in the EOF. The Technical Support Manager shall callout Nuclear Support Department personnel and supply the TSC with requested support and information.

The Technical Support Manager in the EOF directs and coordinates engineering support (requested from TSC) and construction efforts required by the emergency response. He is supported by an engineering staff at the EOF. The Technical Support Staff at the EOF provides this support and retain outside support as necessary.

3.3 Emergency Organization Job Descriptions

The following job descriptions are the responsibilities and duties of the emergency response organization personnel as delineated in Figures 3-1, 3-2, 3-3, and 3-4. An asterisk following a position title indicates that the position is optimal, but not required.

A. EMERGENCY DIRECTION AND CONTROL

A.1 Emergency Response Manager

General Authority and Responsibility

The Emergency Response Manager has overall responsibility for management of onsite and offsite emergency response activities. The Emergency Response Manager has the authority to utilize the technical and financial resources of the company to mitigate an emergency event and limit radiological exposure to the public.

Specific Duties

- 1) An Emergency Response Manager is available 24 hours a day.
- 2) Under ALERT conditions, the Emergency Response Manager is responsible for making the decision to activate the Emergency Operations Facility (EOF) organization.
- 3) Under SITE AREA and GENERAL EMERGENCY conditions, the Emergency Response Manager automatically activates the EOF organization.
- 4) The Emergency Response Manager assumes the emergency coordinator function from the EDO. The following duties are those which are the responsibilities of the person with the emergency coordinator function, which cannot be delegated:
 - a) Has the authority and responsibility to immediately and unilaterally initiate emergency actions.
 - b) Has the authority to expend company funds in an emergency situation, as necessary, to implement the emergency plan procedures.

- c) Has the responsibility for the decision to notify and make protective action recommendations to state and county officials.
- d) Has the responsibility for the direction and control of the EOF.
- 5) Responsible, when acting in the emergency coordinator function, for determining the emergency classification with respect to Alert, Site Area Emergency, or General Emergency.
- 6) Has ultimate authority and responsibility in making corporate policy and decisions concerning all aspects of emergency response operations.
- 7) Keeps corporate management advised of plant status and significant emergency response operations.
- 8) Upon arrival at the EOF, the Emergency Response Manager keeps a log of actions taken.
- 9) Has ultimate authority and responsibility for the dissemination of technical information concerning plant conditions and emergency response operations. The Emergency Response Manager may act as an alternate Company Spokesman.
- 10) Acts as the principal corporate interface between the company and all other organizations.
- 11) In carrying out the duties of the position, the Emergency Response Manager designates alternates or others to act in his behalf as he deems necessary except for those functions not delegatable.

A.2 Site Support Manager

General Authority and Responsibility

The Site Support Manager reports to the Emergency Response Manager and is responsible for the interface between the EOF Organization and the Emergency Duty Officer (TSC). The Site Support Manager is responsible for providing information to the Emergency Response Manager on plant conditions which may result in protective action recommendations to offsite authorities, or classification escalation.

Specific Duties

- 1) Reports to the Emergency Response Manager.
- 2) Notified of an emergency condition in accordance with Emergency Plan Procedures.

- 3) Coordinates with and is the primary interface between the Technical Support Center (TSC) and the Emergency Response Manager.
- 4) Communicates with the EDO and the Technical Support Supervisor (TSS) and is knowledgeable of the current plant status such that he can determine if emergency action levels have been exceeded and/or require issuance of Protective Action Recommendations.
- 5) Provides input information for plant condition protective action recommendations to the Emergency Response Manager. Also directs callouts for PARS transmitted to the states.
- 6) Responsible for providing technical information and briefings to the Public Information Liaison.
- 7) Upon notification of an emergency, the Site Support Manager notifies any additional individuals needed to support the site support function.
- 8) Keeps a log of actions taken, from the first notification of an emergency.
- 9) Notifies the Emergency Response Manager when prepared to assume site support functions in accordance with Emergency Plan Procedures.
- 10) Responsible for coordination and assignment of offsite support to individuals within the emergency response organization.

A.3 Emergency Duty Officer

General Authority and Responsibility

The Emergency Duty Officer (EDO) relieves the Senior Nuclear Shift Supervisor of the emergency coordinator function and all accident management except plant operations. The EDO has the authority to immediately and unilaterally initiate any emergency actions (non-delegatable duties of 3.3.A.1) until relieved of the emergency coordinator function by the ERM following activation of the EOF.

Specific Duties

- 1) Reports initially to the control room, if possible, to receive a turnover of the emergency coordinator function and responsibility for emergency direction and control from the Senior Nuclear Shift Supervisor.

- 2) Evaluates plant and radiological conditions.
- 3) Responsible, when acting in the Emergency Coordinator function, for ensuring accomplishment of the necessary assessment of offsite radiation concentrations resulting from a release. He also has the authority to recommend any protective actions for offsite agencies.
- 4) Determines location to be used to assemble emergency personnel; ensures communications are established.
- 5) Responsible for activating the TSC.
- 6) May call in additional station management as necessary.
- 7) Reviews near-term and long-term actions taken by the Senior Nuclear Shift Supervisor and briefs the Senior Nuclear Shift Supervisor on all significant information and actions taken.
- 8) Responsible for providing the single source point of contact with the NRC onsite.
- 9) Has the authority to order any required protective actions for onsite personnel.
- 10) Ensures all injured personnel receive proper assistance.
- 11) Ensures the dispatch of emergency/survey teams as required by the emergency conditions.
- 12) Responsible for the following administrative requirements:
 1. Having a "Communicator(s)" assigned to receive and sort all incoming and outgoing calls, as required. The Communicator is located in the vicinity of the EDO either in the SNSS's office or TSC.
 2. Ensuring that the required offsite notifications are made.

A.4 Senior Nuclear Shift Supervisor

General Authority and Responsibility

The Senior Nuclear Shift Supervisor initially assumes the Emergency Coordinator function and is responsible for

initiating the necessary immediate actions to limit the consequences of an accident and bring it under control.

The Operations Manager and/or Operations Engineer are normally expected under accident conditions to report to the Control Room of the affected unit to oversee plant operations and provide guidance and direction, as appropriate, to the Senior Nuclear Shift Supervisor.

Specific Duties

- 1) Notifies and briefs the EDO of an emergency and determines, with concurrence of EDO, the need for summoning additional personnel.
- 2) Evaluates plant and radiological conditions when in the emergency coordinator function.
- 3) Responsible, when in the emergency coordinator function, for determining the emergency classification with respect to Unusual Event, Alert, Site Area and General Emergency.
- 4) Maintains all required records by the Emergency Plan Procedures.
- 5) Initiates the required telephone notifications of offsite agencies, until the EDO assumes this responsibility.
- 6) Ensures timely completion of the Follow-up Message Form as required.
- 7) Keeps the EDO informed of plant status.
- 8) Directs the operation of the plant in compliance with all normal plant procedures, directives and technical specifications and emergency procedures.
- 9) Responsible for monitoring plant parameters and plant conditions.

A.5 Emergency Preparedness Coordinator* General Authority and Responsibility

The Emergency Preparedness Coordinator assists the Emergency Response Manager in evaluating the overall emergency response. He or she assists in the assignment of response actions and provides resource and action guidance with respect to the emergency plan and emergency response commitments.

Specific Duties

- 1) Reviews all data transmitted to offsite organizations.
- 2) Assists ERM in review of applicable procedures.
- 3) Provides guidance on offsite interface.
- 4) Assists ERM in developing/reviewing protective action recommendations.

B. PLANT OPERATIONS

B.1 Nuclear Shift Technical Advisor

General Authority and Responsibility

The Nuclear Shift Technical Advisor is the accident assessment advisor to the Senior Nuclear Shift Supervisor during emergencies.

Specific Duties

- 1) Provides technical operational advice to the Senior Nuclear Shift Supervisor during emergency.
- 2) May be the same individual as the Nuclear Shift Supervisor or Senior Nuclear Shift Supervisor if all requirements are met.

B.2 Nuclear Shift Supervisor

General Authority and Responsibility

The Nuclear Shift Supervisor assists the Senior Nuclear Shift Supervisor during the emergency.

Specific Duties

- 1) Brief the Senior Nuclear Shift Supervisor and EDO as necessary.

B.3 Nuclear Control Operators

Specific Duties

- 1) Support the Nuclear Shift Supervisor in emergency assessment and plant emergency response.
- 2) Provide additional assistance as directed by the Nuclear Shift Supervisor to mitigate effects of an emergency situation.

- 3) Manipulate controls for routine and, if necessary, emergency operations for the affected unit in accordance with the operating and emergency instructions.

B.4 Control Room Communicators

Specific Duties

- 1) Relay official messages for the Senior Nuclear Shift Supervisor (SNS), during an emergency.
- 2) At the request of the SNS, deliver emergency notification messages to federal, state, and local authorities.
- 3) Maintain a log of official communications.
- 4) Call up additional personnel as requested.

B.5 Equipment and Utility Operators (listed as EO in the figures)

Specific Duties

- 1) Assist the Nuclear Shift Supervisor and Nuclear Control Operators in accident assessment and emergency response operations.
- 2) Operate plant equipment in support of emergency response and recovery operations.
- 3) Maintain equipment and associated logs.
- 4) Conduct search and rescue operations, if needed.

C. CORRECTIVE ACTION AND SUPPORT OF OPERATIONS

C.1 Operations Support Center Coordinator

Specific Duties

- 1) Activates Operations Support Center (OSC), and assembles team.
- 2) Directs plant personnel in support of repair and corrective actions: confirms team is briefed and radiologically equipped.
- 3) Directs firefighting personnel during a fire emergency.

- 4) Provides the Senior Nuclear Shift Supervisor with status reports of repair and corrective actions.

C.2 Scheduled Instrument and Controls (I&C) Technician

The Scheduled I&C Technician assists in repair tasks as requested by the Senior Nuclear Shift Supervisor, OSC Coordinator, or OSC Support Supervisor.

- 1) Activating equipment and monitoring equipment operation.
- 2) Receives direction from the Maintenance Supervisor or OSC Coordinator.

C.3 Shift Electrician

The Shift Electrician assists in repair related tasks as requested by the Senior Nuclear Shift Supervisor, OSC Coordinator, or OSC Support Supervisor.

Specific Duties

- 1) Supports the repair and corrective actions during emergency response and recovery operations.
- 2) Receives direction from the OSC Coordinator.

C.4 OSC Support Supervisor - (Operations and Maintenance Supervisors)

The OSC Support Supervisors report to the OSC Coordinator. The OSC Support Supervisor is responsible for providing supervision of on-shift support in the OSC of operations, instrument and Controls, and Maintenance personnel.

Specific Duties

- 1) Assemble OSC teams as requested.
- 2) Coordinate corrective action.
- 3) Verify appropriate briefings, protective equipment, and dosimetry have been obtained by each team dispatched.

C.5 OSC Support Team Members - (Rad Waste Operator, I&C, Electric, Boiler Repair Representative Support, Machinist)

OSC Support Team Members report to the OSC Support Supervisor at the OSC. Assignments and responsibilities vary, but all disciplines provide general technical/specialist support as requested. Members frequently are assigned as teams, but first aid and health physics coverage is requested from the Radiation Protection Supervisor or Radiation Protection Technician (RPT).

Specific duties

- 1) Activate or monitor equipment.
- 2) Assess damage, determine condition, or report status of plant/plant equipment.
- 3) Receive direction from the Maintenance Supervisor.

C.6 Fire Department

Specific Duties

- 1) Provide firefighting and first aid support.
- 2) Conduct search and rescue operations.
- 3) Conduct survey, repair and corrective actions.

D. RADIOLOGICAL ACCIDENT ASSESSMENT

D.1 Radiological Support Manager

General Authority and Responsibility

The Radiological Support Manager reports to the Emergency Response Manager and is responsible for offsite assessment of potential or actual radiological consequences to the public. The Radiological Support Manager provides assistance to the Radiological Assessment Coordinator, as necessary.

Specific Duties

- 1) The Radiological Support Manager (RSM) reports to the Emergency Response Manager.

- 2) The RSM is responsible for offsite dose assessment after the EOF has been activated. Prior to activation of the EOF organization, the Radiological Assessment Coordinator has this responsibility.
- 3) The RSM provides field monitoring teams for offsite radiological evaluation.
- 4) The RSM ensures radiological dose calculations are made.
- 5) The RSM provides input information on potential or actual radiological releases or consequences and protective action recommendations to the Emergency Response Manager. The Radiological Support Manager communicates with the States of Delaware and New Jersey, and relays radiological information and other pertinent information to them.
- 6) The RSM initiates and coordinates long-term environmental monitoring. Long-term assistance may also be drawn from other nuclear power utilities and contractors.
- 7) The RSM establishes communication with the medical assistance facilities, and personnel to put the Emergency Medical Assistance Plan into operation if necessary. Contact is established as defined in the Emergency Medical Assistance Plan.
- 8) After the emergency is under control and evacuation of the public is no longer likely, the RSM assists station personnel to determine efforts which may be used to further reduce exposures to the station operating personnel and to the public. The doses are evaluated for the duration of the exposure.

D.2 Radiological Assessment Staff - EOF

Specific Duties

- 1) Performs dose calculations and dose assessments to be used in determining protective action recommendations.
- 2) Assists station personnel to determine efforts which may be used to further reduce exposures to the station operating personnel and to the public.
- 3) Complete the radiological portion of the Station Status Checklist.

- 4) Coordinates and directs offsite monitoring from the EOF.
- 5) Evaluates data provided by the field teams to track the plume and confirm the dose estimates.
- 6) Monitors the habitability of the EOF.
- 7) Updates the radiological status boards.
- 8) Issue dosimetry and TLDs to offsite monitoring teams dispatched from the EOF.
- 9) Perform source term calculations.
- 10) Provide radiological assessment data to the SSM communicators for the states.

D.3 Field Team Communicator

Specific Duties

- 1) Establishes and maintains communications with the Offsite Teams.
- 2) Ensures that Offsite Teams are kept up-to-date on the status of the emergency.

D.4 Offsite Team Members

Specific Duties

- 1) Performs offsite radiation and air sampling surveys as directed by the Radiation Support Manager or Radiological Assessment Coordinator.
- 2) Informs EOF or TSC of survey results.

E. RADIATION PROTECTION ONSITE

E.1 Radiological Assessment Coordinator (RAC)

General Authority and Responsibility

The Radiological Assessment Coordinator, usually located in the TSC, assists the Senior Shift Supervisor/EDO in matters relating to radiological problems during the emergency and provides radiological assessment and recommendations for protective action recommendations to the Emergency Duty Officer.

Specific Duties

- 1) Supervise the onsite Radiation Protection Organization.
- 2) Supervise the onsite Chemistry Organization.
- 3) Ensure that the TSC is activated for radiological response.
- 4) Ensure adequate emergency response staff for radiological and chemistry assessment.
- 5) Advise EDO on all station/site radiological issues.
- 6) Advise EDO on all offsite radiological issues.
- 7) Make final EAL recommendations to EDO on radiological issues.
- 8) Make final Protective Action Recommendations (PARs) to EDO for onsite personnel (including onsite evacuation and administration of potassium iodide).
- 9) Make final PARs to EDO for offsite considerations until assumption of control at EOF.
- 10) Advise/recommend applicable dose authorization extensions.
- 11) Provide the Station Status Checklist Radiological Data Section to EDO until assumption of control at EOF.
- 12) Interface directly with RSM at EOF.
- 13) Interface directly with NRC (in TSC or phone) on specific radiological issues.
- 14) Direct/review dose calculation/assessment at the TSC.
- 15) Ensure appropriate contamination controls are established.
- 16) Direct personnel and vehicle surveys and direct decontamination as required.
- 17) Direct effluent sampling and analysis.

- 18) Recommend expenditures for additional equipment/staff to support accident response.
- 19) Directs all onsite radiological and clinical sampling.
- 20) Ensures that the TSC is activated for radiological response.

E.2 Radiation Protection Supervisors (RP Supervisors)

RPS - Inplant (Control Point)

General Authority and Responsibility

Responsible for inplant radiological activities

Specific Duties

- 1) Support Repair and Corrective Action Missions (RCAM) with personnel and equipment (medical, search and rescue, fire brigade, escort, etc.).
- 2) Direct count room/instrument issue activities.
- 3) Assist in radwaste activities.
- 4) Coordinate inplant surveys, obtain inplant samples (noble gas/iodine), and effluent grab samples.
- 5) Direct access control and dosimetry issue.
- 6) Request dosimetry/WB count support for inplant personnel.
- 7) Coordinates decon of personnel and equipment.
- 8) Assess RMS readings for inplant habitability and protective equipment use.

RPS - Offsite (TSC)

General Authority and Responsibility

Responsible for maintaining dose calculations (until relieved by EOF) assessing those calculations with respect to the proper implementation of EALs and evaluate radiological conditions for the development of protective actions within the owner controlled area.

Specific Duties

- 1) Advise RAC of all radiological conditions.
- 2) Perform dose calculations and provide recommendations for onsite protective actions for the owner controlled area as appropriate.
- 3) Coordinate effluent analysis, steam lines, liquid, plant vent.
- 4) Direct onsite readings for projection purposes and provide findings to EDO/RSM staff.
- 5) Interface with Control Point on plant vent samples.
- 6) Monitor radiological EALs and advise RAC if EALs reached.
- 7) Supervise Radio Operator and two RP technicians for radio control of onsite monitoring teams. Onsite radiological monitoring for evacuees or personnel gathered at assembly stations. Escorting onsite groups being moved or evacuated. Assume control of offsite teams until control assumed by EOF.

RPS - Exposure Control (OSC)*

General Authority and Responsibility

Coordinate with OSC Staff in order to facilitate timely RACM actions.

Specific Duties

- 1) Interface directly with OSC Coordinator and SNSS on RACMs.
- 2) Support radiation work permits and approve authorization reviews for RACMs.
- 3) Coordinate RP support personnel for RACM with RPS - Inplant at Control Point.
- 4) Provide radiological planning for RACMs.
- 5) Provide mission and status information to RPS - Onsite.
- 6) Implementation of protective actions concerning contamination and habitability for OSC/CR.
- 7) Coordinate dose extension authorization to support RACMs.
- 8) Supervise RP Technicians assigned to the OSC.

- 9) Assist RP Technician assigned to the Control Room.
(Salem Only)

3 Radiation Protection Technicians/Assistants (*TSC Radio Operator)

General Authority and Responsibility

Perform radiological support for RCAM, search and rescue, and medical support.

Specific Duties

- 1) Perform onsite radiation and air sampling surveys.
- 2) Conduct operational checks on all equipment.
- 3) Perform dose calculations.
- 4) Perform access control, dosimetry issue.
- 5) Decontamination personnel and equipment.
- 6) Provide sampling results to appropriate RPS.
- 7) Assist in RWP preparation.
- 8) Support RACMs as required.
- 9) Maintain communication with the control point.
- 10) Provide communications to onsite and offsite radiation monitors.
- 11) Perform onsite/offsite radiological monitoring.
- 12) Issue radiological monitoring equipment.

E.4 Radiation Protection Technician (CR)

General Authority and Responsibility

Responsible for initial dose assessment. Assist and advise SNSS with respect to radiological conditions prior to TSC activation.

Specific Duties

- 1) Responsible for initial dose assessment.

- 2) Advises SNSS on radiological matters prior to being relieved by an RPS.
- 3) Evaluate radiation monitoring system and provide long term radiological monitoring system information to all Emergency Response Facilities.
- 4) Provide Control Room contamination control/habitability monitoring.

E.5 Chemistry Supervisors

Chemistry Supervisor (TSC)

General Authority and Responsibility

The Chemistry Supervisor (TSC) usually located in the TSC, coordinates the chemistry section's response for sampling and analysis functions. He reports directly to the RAC.

Specific Duties

- 1) Coordinates chemistry personnel activities.
- 2) Directs high activity, PASS, plant vent and main steam sampling.
- 3) Coordinates activation of PASS in the recirculation mode and PASS sample room ventilation.
- 4) Relays sample analysis data initially, to the RAC and then the RSM once the EOF is activated.
- 5) Initiates source term calculations performed by the Chemistry Group.
- 6) Coordinates sample results with the Nuclear Fuels Group Team Leader when the EOF is activated.
- 7) Initiates sample log.
- 8) Updates Chemistry Status Board.
- 9) Augments Chemistry Staff when necessary.
- 10) Coordinates with Engineer - Nuclear Fuels in TSC.

Chemistry Supervisor (CP/OSC)*

General Authority and Responsibility

The Chemistry Supervisor (CP/OSC) Sampling Coordinator supervises sampling teams and activities from the Control Point. He reports directly to the Chemistry Supervisor at the TSC.

Specific Duties

- 1) Coordinates PASS, plant vent, and main steam sampling.
- 2) Coordinates analysis of collected samples.
- 3) Updates the Chemistry Supervisor at the TSC on sampling and analysis results.

E.6 Chemistry Technician/Assistant

General Authority and Responsibility

Specific Duties

- 1) Initiates/performs PASS, plant vent, and main steam sampling.
- 2) Disassembles, assembles and operates the multi-channel analyzer.
- 3) Establishes backup laboratory facility.
- 4) Initiates PASS to recirculation, if TSC is not activated.

F. PLANT SYSTEMS ASSESSMENT AND ENGINEERING

F.1 Technical Support Supervisor

General Authority and Responsibility

The Technical Support Supervisor has overall responsibility for tracking and trending plant conditions, identifying plant condition emergency action levels and providing advice on protective action recommendations to the Emergency Duty Officer and when the EOF is activated, the Site Support Manager.

Specific Duties

- 1) The Technical Support Supervisor reports to the Emergency Duty Officer.
- 2) The Technical Support Supervisor evaluates the potential for an offsite radiological release based

upon plant conditions in accordance with emergency action levels. Prior to activation of the Emergency Operations Facility (EOF), these evaluations are provided to the Emergency Duty Officer for action. After activation of the EOF, these evaluations are provided to the Site Support Manager for action and the Emergency Duty Officer for information.

- 3) The Technical Support Supervisor provides advice to the EDO on priorities for plant repair and corrective actions.
- 4) The Technical Support Supervisor is responsible for analysis and development of plans and procedures in direct support of operations personnel with the objective of placing the plant in a safe shutdown condition in a manner which minimizes any adverse health and safety effects on the public.
- 5) The Technical Support Supervisor obtains an evaluation of instrument and controls problems from the technical support team, determines alternatives, and coordinates the installation of short-term instrument and controls modifications.
- 6) The Technical Support Supervisor directs the actions of the technical support team in the TSC.

F.2 Engineer - Electrical

Specific duties

- 1) Analyzes plant electrical systems and equipment to determine current operating condition.
- 2) Develops recommendations concerning plant operations relating to electrical systems and equipment.
- 3) Reviews proposed plant operations with respect to electrical systems.
- 4) Receives instructions from and reports findings to the Technical Support Supervisor.

F.3 Engineer - Mechanical

Specific Duties

- 1) Analyzes plant mechanical systems and equipment to determine current operating conditions.

- 2) Develops recommendations concerning plant operations relating to mechanical systems.
- 3) Reviews proposed plant operations with respect to mechanical systems.
- 4) Receives instructions from and reports findings to the Technical Support Supervisor.

F.4 Engineer - Controls

Specific Duties

- 1) Provides control systems accident assessment.
- 2) Analyzes plant control systems requiring trouble-shooting during an emergency.
- 3) Develops engineering recommendations concerning control systems impacted by an emergency.
- 4) Receives instructions from and reports findings to the Technical Support Supervisor.

F.5 Core/Thermal Hydraulics/And Nuclear Fuels Engineer

Core-Thermal Hydraulics Engineer

Specific Duties

- 1) Analyzes core parameters to determine current conditions of the core.
- 2) Develops recommendations for plant operations that would affect safe core conditions.
- 3) Reviews proposed plant operations with respect to the effect on core conditions.
- 4) Receives instructions from and reports to the Technical Support Supervision.

Engineer - Nuclear Fuels (The Engineer - Nuclear Fuels may be the same individual as the Core Thermal Hydraulics Engineer)

Specific Duties

- 1) Evaluates fuel damages based core thermal conditions and/or specific chemistry samples

- 2) Provide fuel damage assessment information to the TSS, RAC, TSM, and RSM.
- 3) Assists Core Thermal Hydraulics Engineer.

F.6 Emergency Preparedness Advisor - TSC*

The Emergency Preparedness Advisor (EPA) reports to the Technical Support Supervisor. The EPA is responsible for obtaining and routing operational and radiological data.

Specific Duties

- 1) Verify that required notifications are made.
- 2) Ensure that operational and radiological data are obtained.
- 3) Advise TSC on State/Local Emergency Operations Center activities as required.

F.7 TSC Communicator

The TSC Communicator reports to the EPA/TSC at the TSC and is responsible, at direction of the EPA/TSC, to make official notifications, obtain, and transmit data.

Specific Duties

- 1) Makes required notifications.
- 2) Obtains operational data and radiological data.
- 3) Transmits data when requested.

F.8 Technical Support Manager

General Authority and Responsibilities

The Technical Support Manager is responsible for coordinating the need for engineering design changes and plant modifications.

Specific Duties

- 1) Receives direction from and reports results to the Emergency Response Manager.
- 2) Conducts emergency response callout for the Technical Support Organization, as needed.
- 3) Makes recommendations concerning event mitigation.
- 4) Determines core damage and engineering protective action recommendations.

F.9 Technical Support Team - EOF (* 2 Members)

Specific Duties

- 1) Analyzes plant systems impacted by an emergency event (with respect to individual specialization refer to Figure 3-3) as requested by the Technical Support Supervisor in the TSC.
- 2) Provides engineering and construction support for engineering and design changes and plant modifications as directed by the Technical Support Manager.

F.10 Licensing Support*

General Authority and Responsibility

Licensing Support is responsible for providing Licensing Department Support to the Technical Support Manager.

Specific Duties

- 1) Directs Licensing Department effort to support the Technical Support Manager and Technical Support Supervisor.

G. PUBLIC INFORMATION

G.1 Company Spokesperson

General Authority and Responsibility

The Company Spokesperson is a senior management representative responsible for representing PSE&G in news media briefings.

Specific Duties

- 1) Acts as official company spokesperson.
- 2) Counsels PSE&G top corporate management on status of accident and ENC briefings.
- 3) Gives direction to ENC technical advisors and ENC Manager.

G.2 Emergency News Center (ENC) Manager/ENC Communications Supervisor

ENC Manager

The Emergency News Center Manager is responsible for the overall operation of the ENC including the dissemination of information; media monitoring.

Specific Duties

- 1) Coordinates the dissemination of media information from the ENC.
- 2) Acts as alternate company spokesperson.
- 3) Ensures information is coordinated with State and Federal representatives before it is released to the media.
- 4) Coordinates media briefings with State and Federal representative.
- 5) Maintains contact with EOF Public Information Liaison and Emergency Response Manager as to status of event and plant conditions.

ENC Communications Supervisor

The ENC Communications Supervisor coordinates the dissemination of information from the ENC to company employees; co-owners; industry; stockholders; the rumor control operations and the media information line.

Specific Duties

- 1) Ensures approved ENC news releases are distributed to PSE&G corporate offices, co-owners, and the industry.
- 2) Supervises rewriting of news release information into format for employee call-in lines and rumor control operations.
- 3) Provides information to media information line operators for dissemination to news outlets.

G.3 Public Information Liaison/Technical Writer/Staff Writer

The Public Information Liaison is responsible for gathering accurate accident information at the EOF, getting it approved, and transmitting it to the ENC.

Specific Duties

- 1) Summarizes plant conditions and emergency response activities.
- 2) Reviews or writes press releases.
- 3) Ensures all media releases are reviewed and approved by the Emergency Response Manager.

- 4) Ensures transmittal of news releases and supporting data/documents to ENC.
- 5) Responds to requests for additional information from/in ENC.

G.4 ENC Operations Supervisor

The ENC Operations Supervisor reports to the ENC Manager. The ENC Operations Supervisor is responsible for the administrative functions of the ENC.

Specific Duties

- 1) Arranges for activation and set up of the ENC.
- 2) Supervises clerical support, security, and badging functions.
- 3) Maintains contact with EOF Administrative Support Manager.

G.5 Technical Advisor

Assists ENC Manager and Company Spokesperson with answers to technical questions. Provides assistance in conducting briefings to the media with respect to general technical information on the affected unit.

Specific Duties

- 1) Answers/addresses specific technical questions of the media.
- 2) Assists ENC Manager in providing general technical information to the media.
- 3) Assists in the set up and operation of the ENC.

G.6 Media Monitor/Employee Information Coordinator/ Media Information Operator (* 3 Members)

Assist ENC Communications Supervisor in receiving and answering external communications. Monitors media reports for accuracy.

Specific Duties

- 1) Assists in answering external communications
- 2) Assists in monitoring media reports of the incident
- 3) Assists in the set up and operation of ENC

H. This letter is not used.

I. SITE ACCESS CONTROL AND ACCOUNTABILITY

I.1 Security Liaison (TSC)

The Security Liaison reports to the Emergency Duty Officer. The Security Liaison is responsible for coordinating aspects of site evacuation and personnel accountability.

Specific Duties

- 1) Verify accountability is established.
- 2) Assist in the coordination and control of site evacuation.
- 3) Maintain personnel entry log at the TSC.
- 4) Conduct site evacuation.
- 5) Provide emergency vehicle support.

I.2 Security Liaison (EOF)

The Security Liaison (EOF) reports to the Site Support Manager. The Security Liaison is responsible for coordinating aspects of security at the EOF and coordinating support for onsite security.

Specific Duties

- 1) Open the EOF.
- 2) Assist in the coordination and control of EOF access.
- 3) Conduct site evacuation.
- 4) Provide emergency vehicle support.

I.3 Emergency Preparedness Advisor/EOF (EPA/EOF)*

The EPA at the EOF reports to the Site Support Manager. The EPA assists in conducting emergency response callouts and is responsible for some aspects of the set up and activation of the Emergency Operations Facility.

Specific Duties

- 1) Conduct emergency response callouts.

- 2) Assist in setup of Emergency Operations Facility.
- 3) Advise EOF staff on state EOC operations and provide assistance in executing their duties.

I.4 Security Force Member

Security Force Members report to the Site Support Manager/Emergency News Center Manager. Security Force Members are responsible for the proper establishment and maintenance of access control.

Specific Duties

- 1) Maintain access control at the EOF/ENC.
- 2) Assist in personnel accountability.
- 3) Open the EOF/ENC.

I.5 Site Support Staff - OPS

Specific Duties

- 1) Make emergency notifications in accordance with the ECG.
- 2) Obtain operational data.
- 3) Advise the SSM on the operational condition of the affected unit.

J. ADMINISTRATIVE SUPPORT

J.1 Administrative Support Manager

General Authority and Responsibility

The Administrative Support Manager reports to the Emergency Response Manager, administers the provision of emergency support and provides administrative support for the emergency response effort.

Specific Duties

- 1) Provides general office support functions including typing, reproduction, office supplies and office furniture.
- 2) Functions as the EOF purchasing agent.

- 3) Administers the petty cash fund and expense accounts.
- 4) Coordinates personnel and equipment requests from the Emergency Response Manager and the other support managers.
- 5) Performs Administrative Support Organization callout.

J.2 EOF Administrative Support

Support personnel report to Administrative Support Supervisor at the Emergency Operations Facility.

Specific Duties

- 1) Provide administrative support to the EOF staff.

J.3 Administrative Support Supervisor*

General Authority and Responsibility

The Administrative Support Supervisor is responsible for providing administrative support to the Emergency Duty Officer and has the authority to arrange for procurement of the necessary materials or personnel.

Specific Duties

- 1) Receives direction from the Emergency Duty Officer.
- 2) Coordinates activities with the Administrative Support Manager.
- 3) Maintains records of purchases.

J.4 TSC Administrative Staff*

The TSC Administrative staff reports to the Administrative Support Manager. Staff members are responsible for functions normally associated with their specialties.

Specific Duties

- 1) Provide administrative support to the TSC/OSC as directed.

J.5 Public Information Administrative Support*

Specific Duties

- 1) Provide administrative support to Public Information Liaison and Company Spokesperson.

3.4 Staffing Commitments

The commitment for minimum staffing will be in accordance with Supplement 1 to NUREG-0737, Table 2.

Table 3-1 provides a correlation between major functional areas, major tasks, position title or expertise, as described in Table 2 of Supplement 1, NUREG-0737, and the similar tasks and titles in the emergency response organization. The alphanumeric codes which appear with staffing capability goals represent the emergency response organization positions used in paragraph 3.3. of this plan. Facility activation goals/response times are described in Section 9, Emergency Facilities and Equipment.

TABLE 3-1

LINE OF SUCCESSION
EMERGENCY COORDINATOR DUTIES

<u>Duty Position</u> ¹	<u>Personnel Assigned</u> <u>Duty Position</u> ²	Classification Requiring Activa- tion of Emergency Coordinator Function ³			
		<u>UE</u>	<u>A</u>	<u>SAE</u>	<u>GE</u>
Senior Nuclear Shift Supervisor	SNSS is a normal shift duty assignment per station tech spec	X			
Emergency Duty Officer	Station Department Manager/Station Department Engineers	X ₂	X		
Emergency Response Manager	Assistant Vice President Nuclear Operations Support General Manager- Engineering and Plant Betterment Senior VP-Nuclear VP-Nuclear Operations Station General Manager		X ₃	X	X

NOTES:

1. This indicates the level of emergency coordinator function activation required for the emergency level.
2. The Emergency Duty Officer is contacted for all events classified as an Unusual Event or higher. He/she may or may not respond to the emergency coordinator function of this level event. The response would be based on the conditions of the incident.
3. The Emergency Response Manager is contacted for all events classified as an Alert or higher. He/she may or may not respond to the emergency coordinator function to this level event. The response would be based on the conditions of the incident.

TABLE 3-2

ARTIFICIAL ISLAND
CORRELATION TO SUPPLEMENT 1 of NUREG-0737, TABLE 2
(NUREG-0654, TABLE B-1)

Functional Area	Major Tasks	Position Title or Expertise	On * Shift	Additional Capability	
				30 min.	60 min. (Note 1)
Plant Operations and Assessment Operational Aspects		Senior Nuclear Shift Supervisor (SRO) Shift Supervisor (SRO) Control Operators Equipment/Utility Operators	1 A4 1 B2 2 B3 2 B5		
Emergency Direction and Control (Emergency Coordinator)		Senior Nuclear Shift Supervisor	1** A4		
Notification/Communication	Notify licensee, State local and Federal personnel & maintain communication		1 B4	1 B4	2 F7
Biological Accident Assessment Support of Operational Accident Assessment	Near-site EOP - Manager Offsite Dose Assess- ment	Senior Manager*** Radiation Protection Supervisor (HP)			1 A1
	Offsite Surveys	Tech., Tech. Asst., or Tech. Helper, (HP)		1 E4 (Note 2)	
	Onsite (out-of-plant)	Tech., Tech. Asst., or Tech. Helper, (HP)		2 D4	2 D4
	In-plant surveys	Tech., Tech. Asst., or Tech. Helper, (HP)	1 (Note 4) E3	1 (Note 6)	1 E3
	Chemistry/Radio- chemistry	Tech., Tech. Asst., or Tech. Helper, (Chem.)	1 E6	1 (Note 6)	1 E3
					1 E6

TABLE 3-2 (cont)
 ARTIFICIAL ISLAND
 CORRELATION TO SUPPLEMENT 1 OF NUREG-0737, TABLE 2
 (NUREG-0654, TABLE B-1)

Major Functional Area	Major Tasks	Position Title or Expertise	On * Shift	Additional Capability		
				30 Min.	60 Min.	
Plant System Engineering, Repair and Corrective Actions	Technical Support	Nuclear Shift Technical Advisor	1 B1 (Note 5)	1 F6 (Note 3)		
		Core/Thermal Hydraulics			1 F5	
	Repair and Corrective Actions	Electrical				1 F2
		Mechanical				1 F3
		Mechanical Maintenance/ Rad Waste Operation		1** C5		1 C4
		Electrical Maintenance/ Instrument and Control		1** C3	1 C3	1 C2
Protective Actions (In-Plant)	Radiation Protection	Tech., Tech. Asst., or Tech. Helper (HP)	2** (Note 6)	2 (Note 6)	2	
		a. Access Control b. HP Coverage for repair, corrective actions, search and rescue firstaid and firefighting c. Personnel monitoring d. Dosimetry				
Firefighting			Fire Brigade per Technical Specifications		Local Support	

TABLE 3-2 (cont)

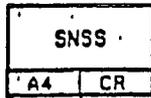
ARTIFICIAL ISLAND
CORRELATION TO SUPPLEMENT 1 OF NUREG-0737, TABLE 2
(NUREG-0654, TABLE B-1)

Major Functional Area	Major Tasks	Position Title or Expertise	On * Shift	Additional Capability 30 Min.	Additional Capability 60 Min.
Rescue Operations and First Aid			2**		Local Support
Site Access Control and Personnel Accountability	Security, fire fighting communications, personnel accountability	Security Personnel	All per Security - Plan		Local State Support
Total			10	11	15

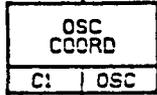
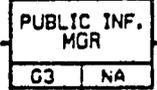
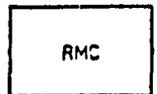
Notes:

- * For each unaffected nuclear unit in operation, maintain at least one Shift Supervisor, one Control Operator and One Equipment/Utility Operator.
- ** May be provided by Shift personnel assigned other functions.
- Overall directions of facility response to be assumed by near-site EOP Emergency Response Manager when all centers are fully manned. Direction of minute-to-minute facility operations remains with senior manager in Technical Support Center or Control Room (as discussed in Section 3.3).
- e 1: Staffing times for these positions are not necessarily implied under Additional Capability. This chart provides a table which easily correlates the emergency response organization to the position guidance of Table 2, NUREG-0737, Supplement 1. Staffing response times are as discussed in paragraph 3.4 and Section 9.
- e 2: Will be performed by the Shift Radiation Protection Technician (E4) until relieved by the Radiation Protection Supervisor - Offsite.
- e 3: Performed by Nuclear Shift Technical Advisor until relieved by the Core Thermal Hydraulics Engineer.
- e 4: Additional radiation protection/chemistry personnel available from unaffected station to support implant activities.
- e 5: STA can also be assigned the duties of the unit Shift Supervisor in accordance with technical specification provisions.
- e 6: If needed, these personnel will be supplied by unaffected station onshift Rad Pro/Chem Staff.

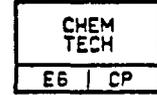
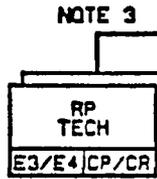
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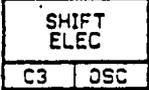
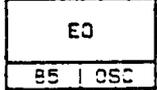
NOTES 1,2



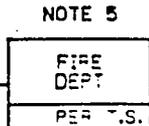
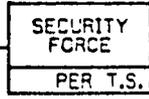
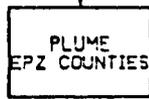
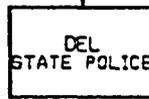
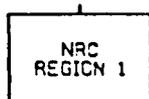
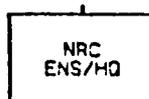
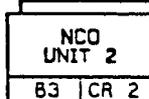
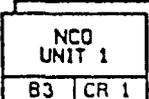
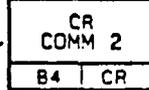
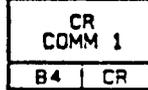
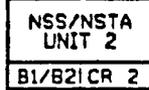
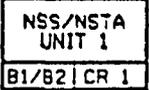
NOTE 4



NOTE 3



NOTES 6,7



ATED UNIT SNSS WILL ASSUME EMERGENCY COORDINATOR (EC) DUTIES
 HS AND CHEM TECHS FROM UNAFFECTED STATION WILL BE AVAILABLE TO
 TO AFFECTED UNIT
 OSC COORD WILL BE SHIFT SUPPORT SUPERVISOR UNTIL RELIEVED
 /OSC AUGMENTATION STAFF
 TY FORCE AS SPECIFIED IN SECURITY PLAN
 DEPARTMENT AS SPECIFIED IN TECH SPECS

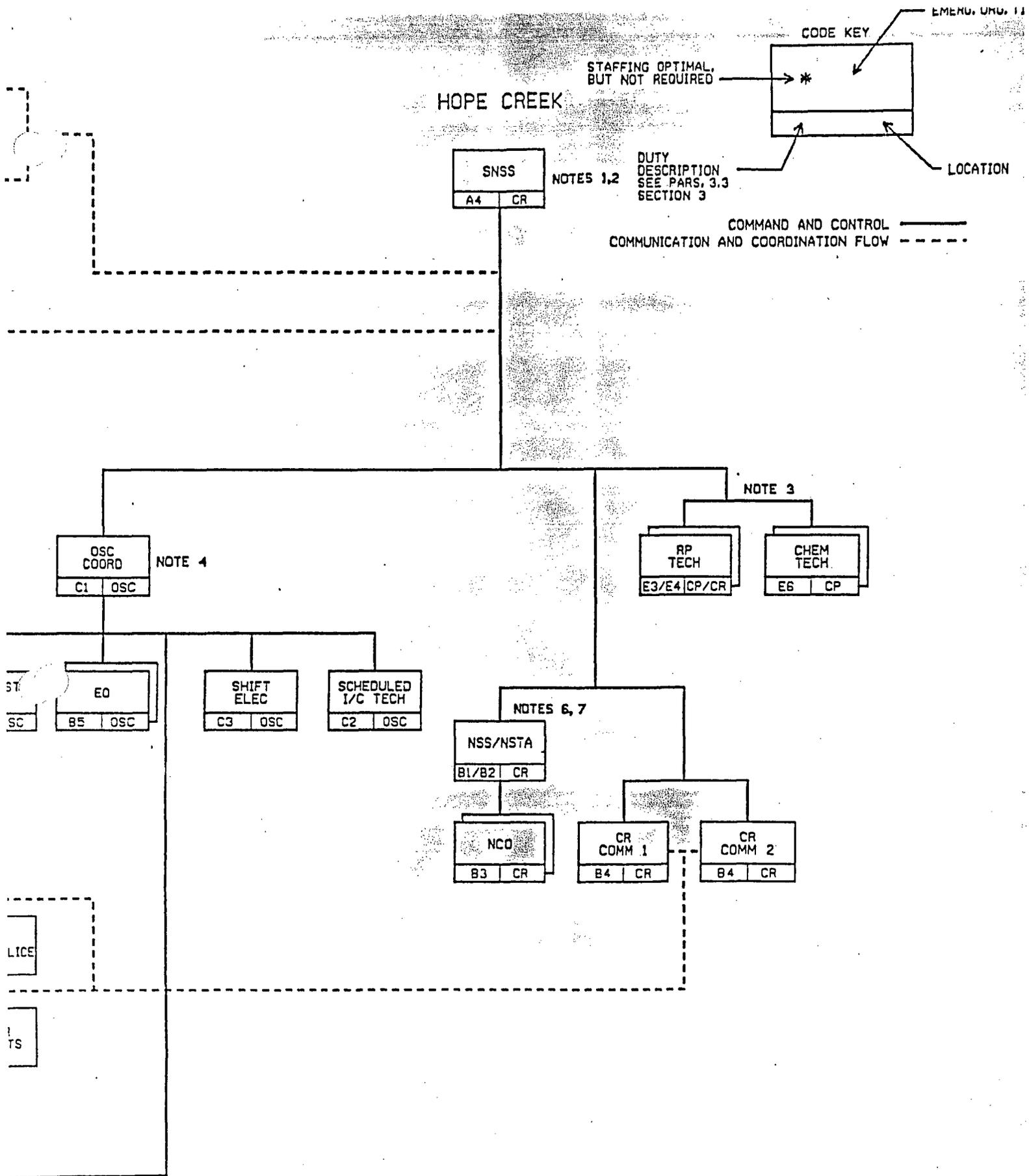
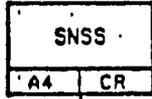
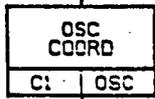


FIGURE 3-1
 ARTIFICIAL ISLAND
 ON SHIFT STAFFING
 EMERGENCY RESPONSE
 ORGANIZATION

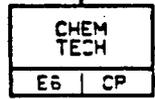
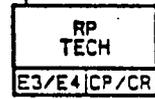
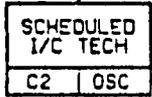
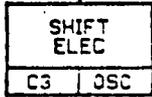
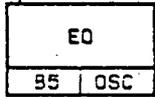
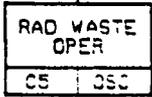
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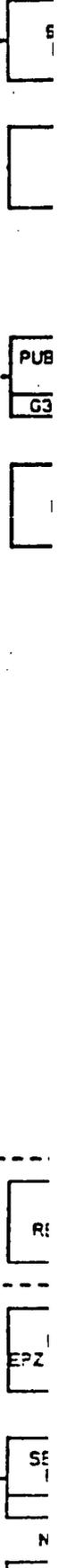
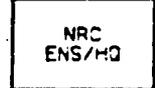
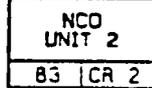
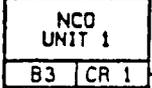
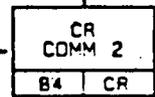
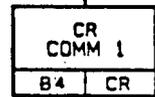
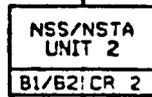
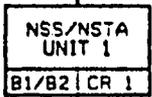
NOTES 1,2



NOTE 4



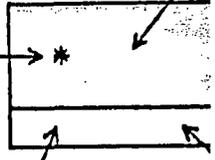
NOTE 3



HOPE CREEK

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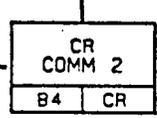
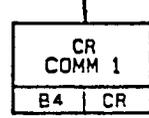
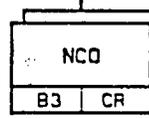
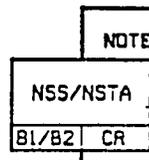
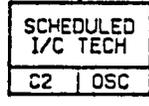
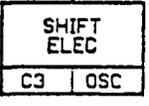
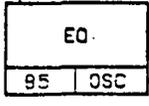
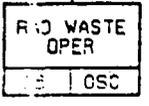
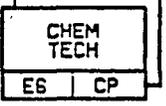
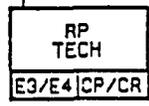
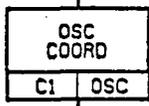
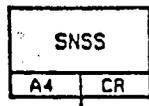
STAFFING OPTIMAL,
BUT NOT REQUIRED



NOTES 1,2

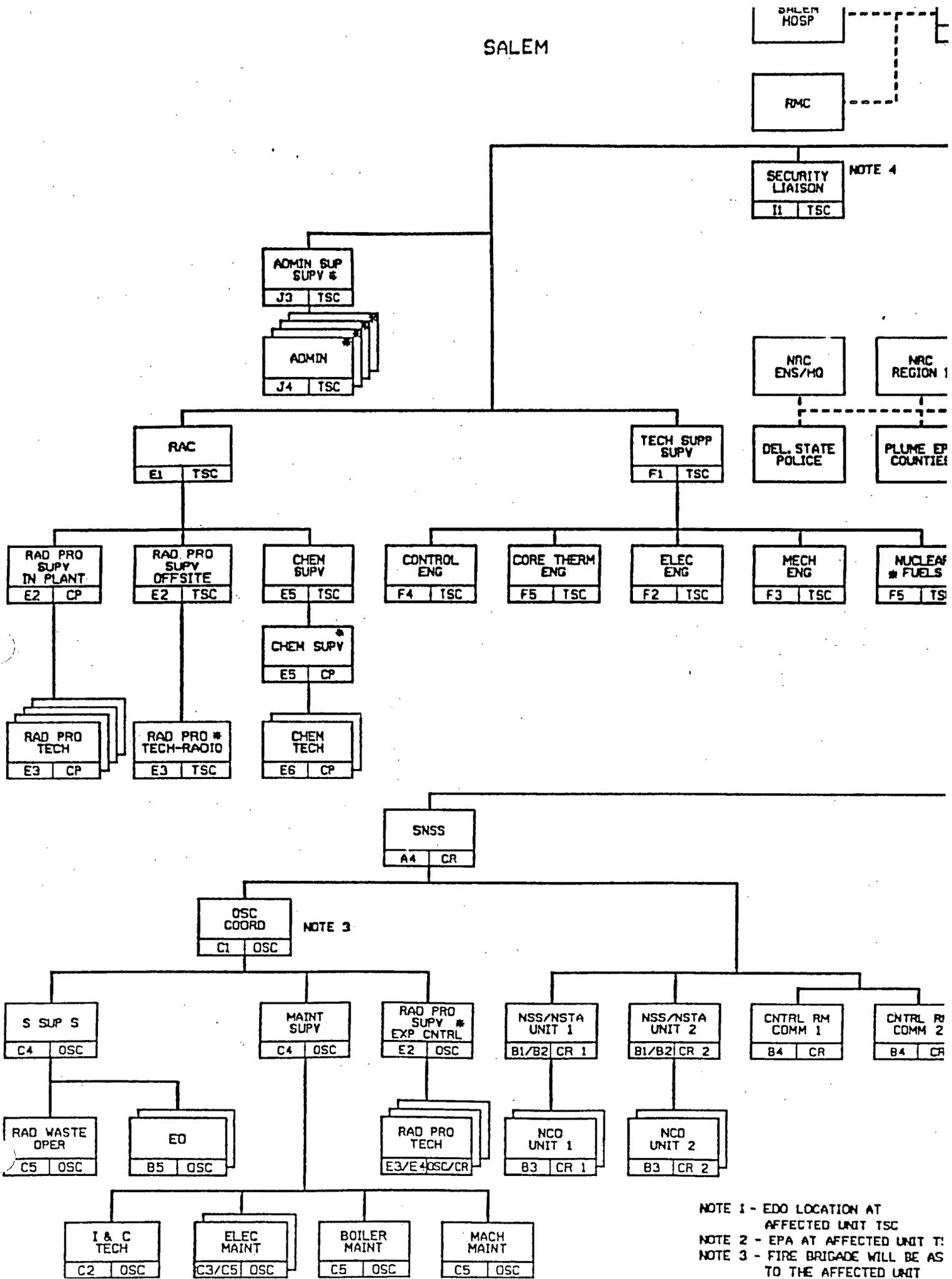
DUTY
DESCRIPTION
SEE PARS. 3.3
SECTION 3

COMMAND AND CONTROL
COMMUNICATION AND COORDINATION FLOW



1
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SALEM



NOTE 1 - EDO LOCATION AT AFFECTED UNIT TSC
 NOTE 2 - EPA AT AFFECTED UNIT TSC
 NOTE 3 - FIRE BRIGADE WILL BE AS TO THE AFFECTED UNIT

HOPE CREEK

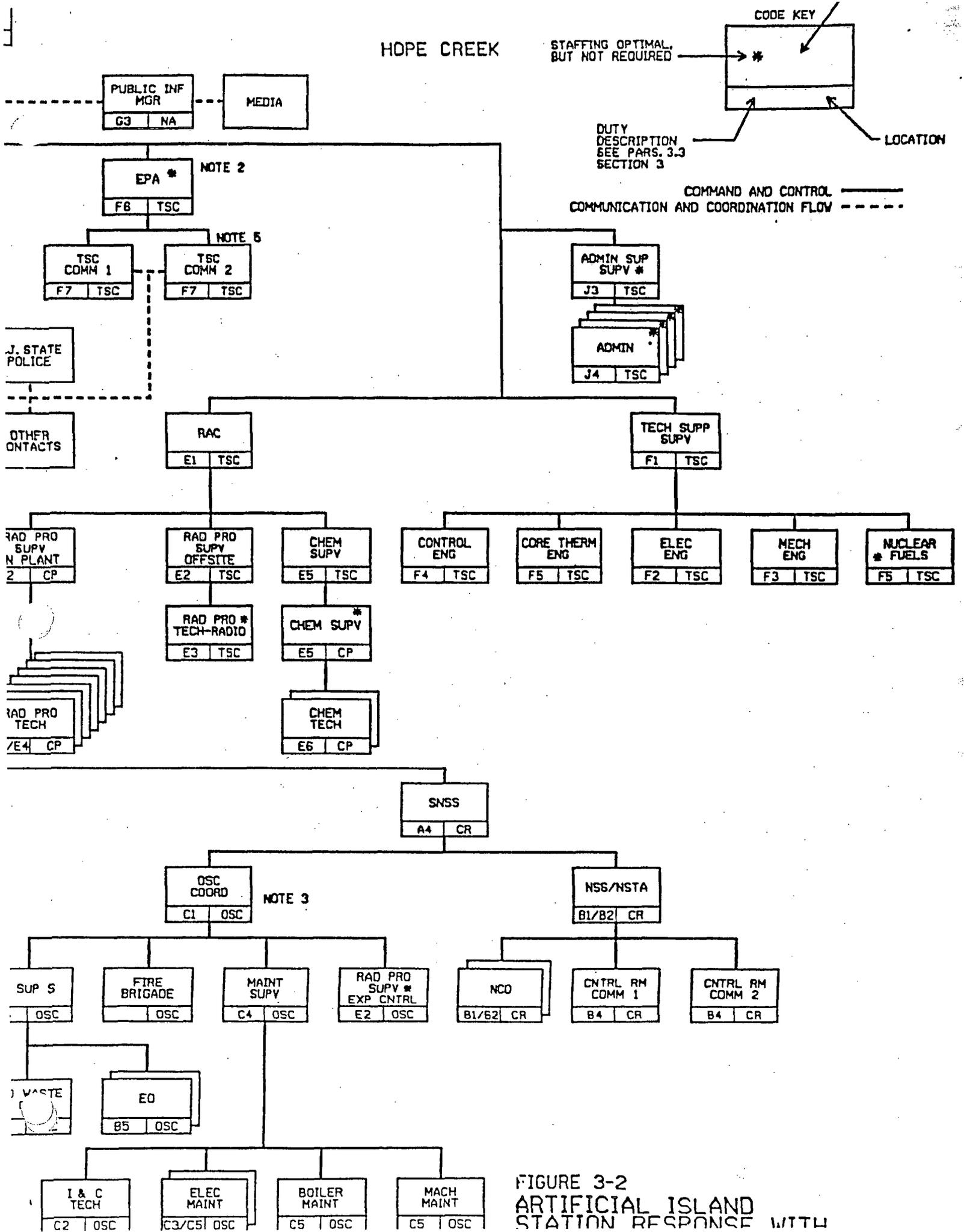
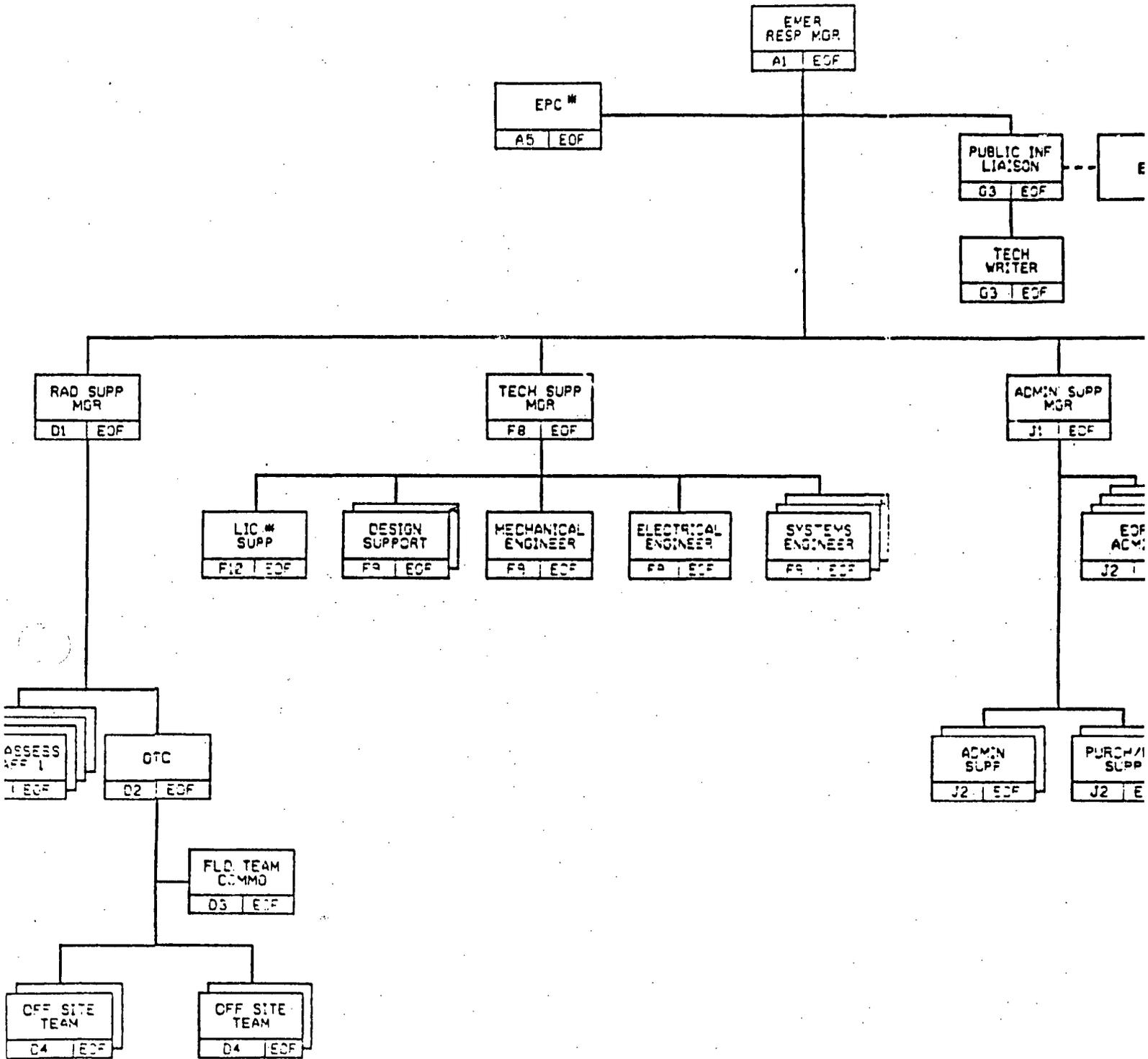


FIGURE 3-2
ARTIFICIAL ISLAND
STATION RESPONSE WITH



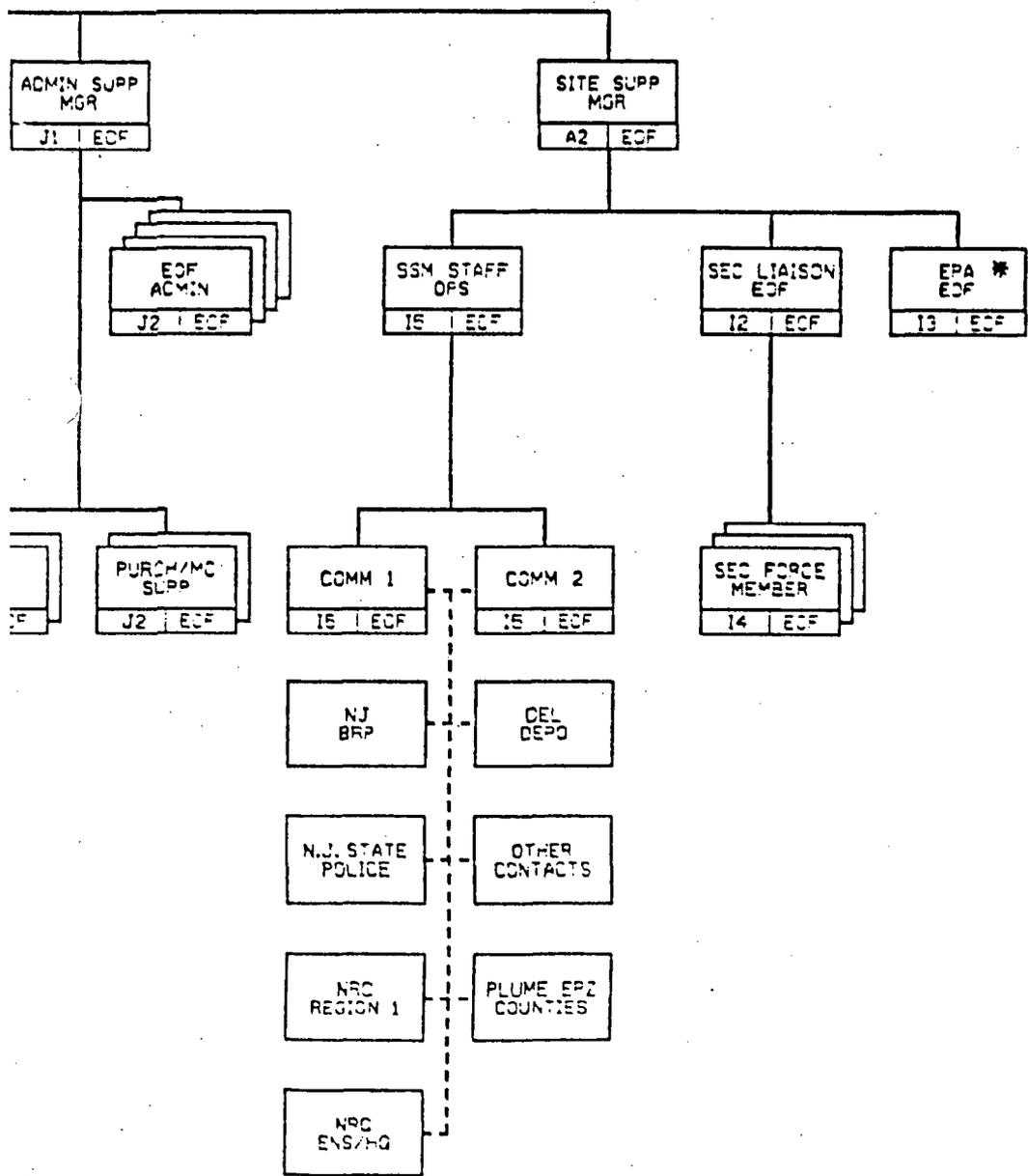
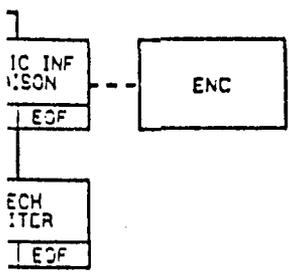
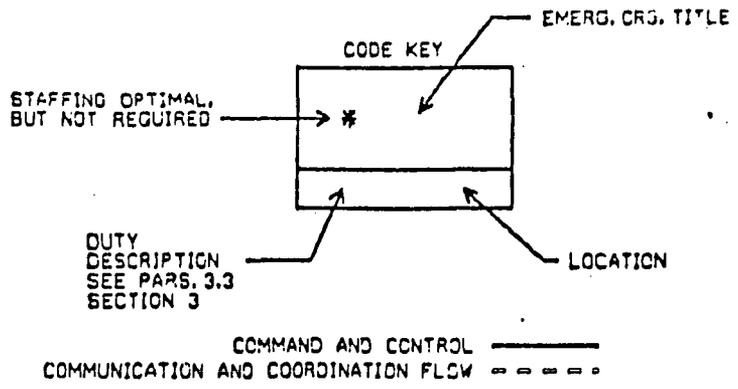
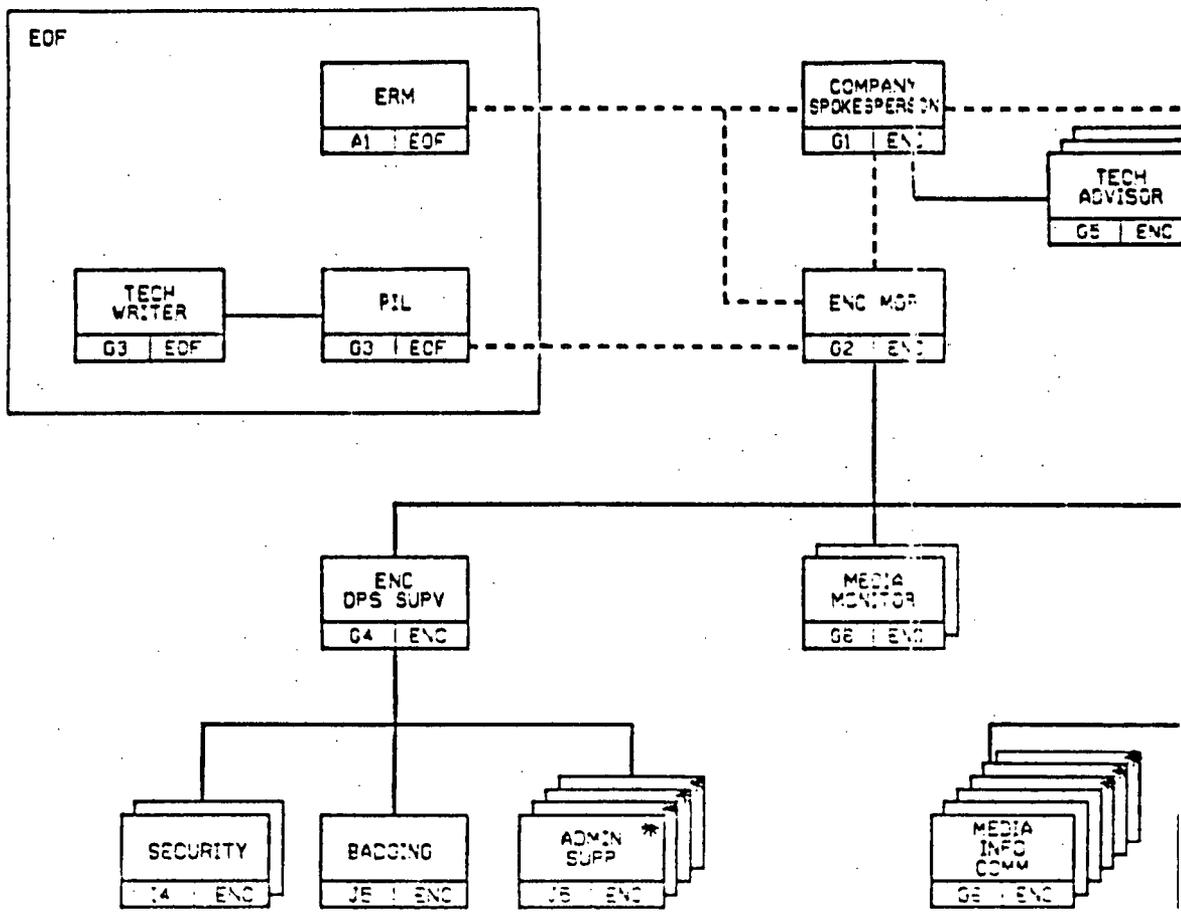


FIGURE 3-3
 ARTIFICIAL ISLAND
 EMERGENCY OPERATIONS FACILITY
 EMERGENCY RESPONSE ORGANIZATION



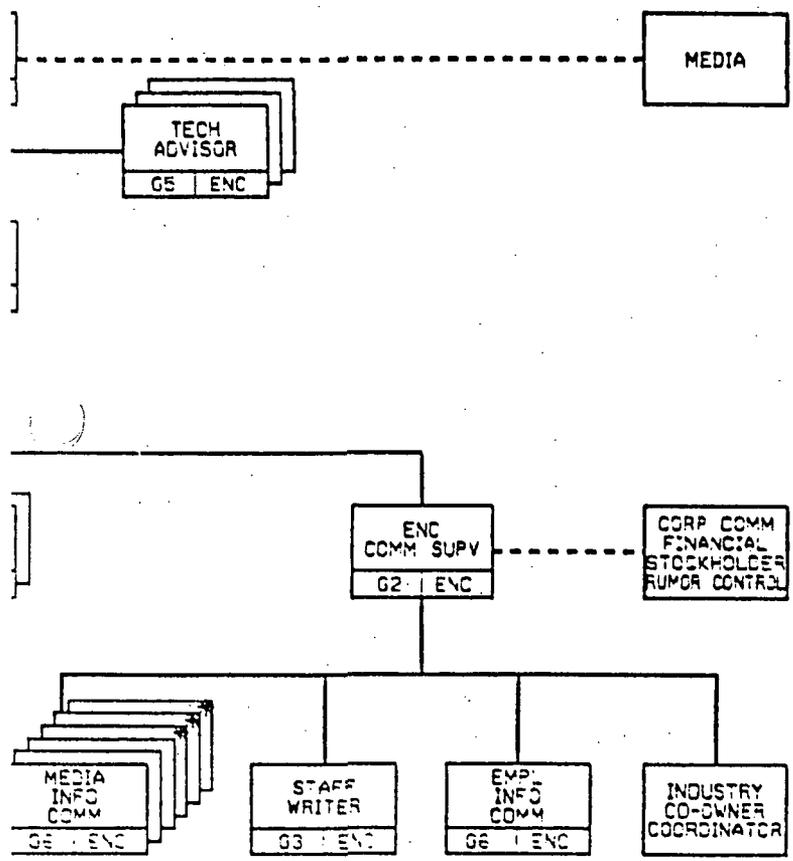
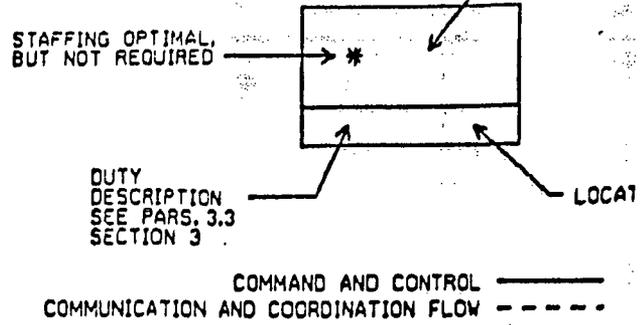


FIGURE 3-4

ARTIFICIAL ISLAND
EMERGENCY NEWS CENTER
ORGANIZATION
WITH EXTERNAL INTERFACE

SECTION 3

SIGNATURE PAGE

Prepared By: Kate Seroffin 4/13/87
(If Editorial Revisions Only, Last Approved Revision) Date

Reviewed By: C.W. Bann 4/13/87
Station Qualified Reviewer Date

Significant Safety Issue
() Yes (x) no
Reviewed By: [Signature] 4/13/87
Department Manager Date

Reviewed By: [Signature] 4/13/87
Emergency Preparedness Manager Date

Reviewed By: [Signature] 4/13/87
General Manager - Nuclear Quality Assurance
(Emergency Plan Only) Date

Reviewed By: NA
General Manager - Nuclear Safety Review
(If Applicable) Date

SORC Review and Station Approvals

87-032 [Signature]
Mtg. No. Salem Chairman
4/30/87
Date

87-047 [Signature]
Mtg. No. Hope Creek Chairman
4/15/87
Date

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General Manager - Salem
4/30/87
Date

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General Manager - Hope Creek
4/16/87
Date

SECTION 9

EMERGENCY FACILITIES AND EQUIPMENT

Artificial Island - Emergency Facilities and Equipment

Emergency facilities and equipment are maintained for Artificial Island both on and offsite. Equipment specifically for monitoring and assessment of operational radiological and geophysical events, and similar instrumentation is described in Section 10, Accident Assessment. The Emergency Operations Facility and Emergency News Center are offsite facilities that serve Artificial Island.

Although onsite facilities are described separately in Sections 9.1 and 9.2, to reflect station specifics, they have common functions, and fulfill the same organizational and operational commitments.

Control Rooms

Control Rooms continue their control functions during emergency response. Additional classification and notification responsibilities are met from the control room until other emergency facilities are activated. The emergency equipment and communications support that are available to each control room are shown in Table 9-1 and 7-1. The specific features of major communications systems are described in Section 7, Communications.

Operations Support Centers

Operations Support Centers (OSC) function as information relay stations, dispatching offices, assembly and assignment points, and also as accountability stations for teams assigned from the OSC. Emergency equipment and communication system that are available to the OSC are presented in Table 9-1 and Table 7-1. Specific features of the communications systems are described in Section 7, Communications.

Technical Support Centers

The Technical Support Centers (TSCs) also have common functions and similar equipment and support. The TSC provides a well equipped location onsite to support plant management during an emergency. The TSC functions as an augmented communication/analysis center of technical data to supplement the Control Room staff's technical analysis and to support plant operations personnel.

The TSC is used by members of the emergency response organization to relieve control room operators of (and remove from the control room) any plant specific duties not directly related to the direct handling of plant controls. Such duties include directing analysis and assessment of the emergency conditions and performing functions associated with the Emergency Operations Facility, when that is not activated.

The TSC is activated for Alert, Site Area Emergency, or General Emergency action levels. The TSC is used as the assembly point for utility personnel, onsite vendor support, NRC, or for the personnel who are directly involved in assessment of an accident and mitigation.

It is estimated that a TSC facility can be fully activated within one hour following initial notification of personnel assigned to the TSC. This estimate is only a target value and may vary based on initial notifications, travel, and other conditions.

Emergency equipment and communications support that are available to the TSC are presented in Table 9-1 and Table 7-1. The specific features of the communications systems are described in Section 7, Communications.

Emergency Vehicles - Artificial Island

An ambulance is available to transport injured and/or contaminated personnel to Memorial Hospital of Salem County or another facility.

9.1 Onsite Emergency Facilities and Equipment - Salem Generating Station

Emergency facilities and equipment were developed to meet the intent of NUREG-0737, Supplement 1, except as indicated.

9.1.1 Control Room Area

The Salem Control Rooms (Figure 9-1) have been designed to meet the habitability requirements of the General Design Criteria 19 and Standard Review Plan Section 6.4. The emergency equipment provided in the Control Rooms and Operations Support Center is shown in Table 9-1.

9.1.2 Operations Support Center (OSC)

The Operational Support Center (OSC) (Figure 9-1) is that area encompassed by the Senior Shift Supervisor's office, file room, and the aisleway between the Control Rooms. In

the event of an emergency, the operating personnel (not on duty in the Control Rooms) and support personnel will report to the aisleway for personnel accountability. The Senior Shift Supervisor will be responsible for deactivating this center when it is no longer required. At the Alert level or greater, an OSC Coordinator will be designated to coordinate repair and corrective action teams. If personnel requirements exceed the capacity of the OSC, the Clean Facilities (B) Building machine shop will become the alternate OSC.

9.1.3 Technical Support Center (TSC)

The Salem Technical Support Center (TSC) is located on the third floor of the Clean Facilities (B) Building (Figure 9-2) isolated from the rest of the reactor building. The TSC meets all habitability requirements outlined in NUREG-0737, Supplement 1. This center supplies technical support to the operations personnel in the Control Room area. The EDO is responsible for activating this center.

The analytical and assessment capabilities assigned to the Salem TSC include:

- Computerized Dose Assessment
- Plant Engineering Support

Documentation available within the TSC supports emergency classification, procedures, and assessments. Document groups include:

- Emergency Plans and Procedures
- Operating Procedures (Emergency and Normal)
- Departmental Support Documents
- Technical Specification
- Engineering Support Material
- Final Safety Analysis Report

The Salem TSC is in close proximity to the Technical Document Room, which maintains an inventory of several thousand plant-specific documents or drawing groups as well as applicable codes, standards, and regulations. The TSC is convenient to other support facilities within the B Building.

9.1.4 Other Emergency Facilities and Equipment - Control Point

During normal operations, this area serves Salem as the access control point for personnel entering or leaving the controlled access area. The emergency equipment provided at this location is shown in Table 9-1. Communications equipment is described in Section 7.

9.2 Onsite Emergency Facilities and Equipment - Hope Creek

Emergency facilities and equipment were developed to meet the intent of NUREG-0737, Supplement 1, except as indicated.

9.2.1 Control Room Area

The HCGS Control Room (CR) areas (Figure 9-3) have been designed to meet the applicable habitability requirements. Typical emergency equipment in the Control Room area and Operations Support Center (OSC) is shown in Table 9-1.

9.2.2 Operations Support Center

The Operations Support Center (OSC) is located in the conference room (Figure 9-4) adjacent to the Control Room. In the event of an emergency, operations personnel not on duty and other support personnel report to the OSC to form repairs and corrective actions teams. Additionally an OSC Coordinator is designated to coordinate the teams efforts. The office space above the Hope creek TSC will serve as a back-up OSC if required.

9.2.3 Technical Support Center

The Hope Creek TSC is located on Elevation 132 in the reactor building (Figure 9-5), but isolated and shielded from the rest of the reactor building. The TSC meets all habitability requirements outlined in NUREG-0737, Supplement 1.

The analytical and assessment capabilities assigned to the TSC includes:

- Radiological Monitoring System (RMS)
- Control Room Integrated Display System (CRIDS) which includes the Safety Parameter Display System (SPDS)

Documentation available within the TSC assists in a variety of analyses and assessments. Document groups include:

- Emergency Plan Implementing Procedures.
- Normal Operating Procedures.
- (Emergency) Abnormal Operating Procedures.
- Plant Technical Specifications.
- Final Safety Analysis Report.
- Selected Vendor Manuals.
- Technical Drawings.

Additional documentation is immediately available at the nearby Technical Document Room.

The TSC is located within the protected area convenient to both the Control Room (OSC) and Control Point and is a dedicated emergency response Facility. Access is controlled through single-entry access. Other entries and exits are maintained locked.

Habitability is controlled to meet the same habitability standards as required in the Control Room. The heating, ventilating, and air conditioning (HVAC) systems include the use of high efficiency particulate absorber (HEPA) and charcoal filtration, which prolongs habitability should inplant conditions degrade.

Sufficient monitoring and protective equipment is kept in a secured area, the Radiation Protection Locker, of the TSC and available to the TSC staff.

9.2.4 Other Emergency Facilities and Equipment

Control Points

During normal operation, these areas located at the 124' and 137' elevations serve as the regular Access Control Points for personnel entering or leaving the Radiological Control Area. Emergency equipment is provided at the Main Control Point (137' Elevation) and is listed in Table 9-1.

9.3 Offsite Emergency Facilities and Equipment

9.3.1 Emergency Operations Facility - General Description

The Emergency Operations Facility (EOF) (Figure 9-6) for Artificial Island is controlled and operated by Public Service Electric & Gas Company (PSE&G). It serves as the near-site support center to form management of the aggregate response to a radiological emergency as defined by NUREG-0654, Revision 1, Appendix 1. PSE&G commits to operating the EOF so as to fulfill the functional requirements of paragraph 4.1 of NUREG-0737, Supplement 1. It should be noted that based on the backup EOF exemption granted for the Salem Generation Station Plan, and the fact that Artificial Island (the location of Salem and Hope Creek Generating stations) is treated as a single site, it is assumed that the exemption is applicable to all EOF requirements for Artificial Island.

The EOF provides facilities and equipment to support staff performance of four major functions:

1. Management of overall emergency response activities
2. Coordination of radiological and environmental assessment
3. Development of recommendations for protective actions for the public
4. Coordination of emergency response operations with Federal, state, and local agencies in accordance with the Emergency Plan.

The communications systems available at the EOF are presented in Table 7-1. Specific features of those systems are described in Section 7, Communications.

Activation and use of the Emergency Operations Facility is at the option of PSE&G at the Alert emergency classification. The option is exercised depending upon management's evaluation of the potential consequences of the situation based upon the nature of initiating conditions,

trends subsequently perceived, and results of actions taken to mitigate potential consequences. EOF activation is mandatory in the event of declaration of a Site Area Emergency or General Emergency.

The activated EOF is managed by an individual who is designated as the Emergency Response Manager. He directs PSE&G's offsite response activities and coordinates actions with and provides appropriate support to the Technical Support Center (Emergency Duty Officer). The EOF is staffed by PSE&G and other, Federal, state, and support personnel as required emergency personnel designated by the Artificial Island Emergency Plan.

Equipment is provided in the EOF for acquisition, recording, display and evaluation of containment and operational conditions, radiological releases, and meteorological data. The data is analyzed and evaluated to determine the nature and scope of any protective measures which may be recommended to state and local officials for protection of the public health and safety, if the magnitude and potential effects of a radioactive release dictate. The equipment includes a display of information collected by the Radiological Monitoring System (RMS). All equipment, displays, and instrumentation to be used to perform essential EOF functions are located in the EOF.

Facilities are provided in the EOF (as depicted in the EOF layout, Figure 9.6) for NRC, FEMA, New Jersey, Delaware and local emergency response agency personnel responsible for implementing emergency response actions for protection of the general public. This arrangement enhances coordination of activities and exchange of information among participating agencies and the PSE&G emergency response organization. The agencies also operate from other offsite control centers located at their respective agency facilities.

To ensure EOF activation readiness, PSE&G provides normal industrial security for the EOF complex including lock and key control, a personnel identification system, exterior lighting, and periodic patrols by police and/or private security guards. If the EOF is activated, security

protection is upgraded. At least one security guard is on duty at all times to control access. All access to the facility is through a single controlled portal. All other access points are secured.

9.3.2 Location, Structure, and Habitability

The Emergency Operations Facility is located in PSE&G's Nuclear Training center on Chestnut Street in Salem, New Jersey. This site is located 7.5 miles from the Technical Support Center. The site location is judged to provide operational and logistical benefits with regard to its relationship to the areas transportation system. Salem is at the intersection of the two state highways (Routes 45 and 49). Three county highways, Routes 557, 540, and 581, connect to Routes 45 and 49.

The city of Salem is served by a freight-only railroad and an airfield capable of accommodating small commercial aircraft. In addition, the Nuclear Training Center and the Nuclear Department Administration Building (adjacent to Hope Creek Generating Station) have helicopter landing pads. There is also a landing pad at the Salem Generating Station. This makes possible rapid movement of personnel between the station and the EOF.

This transportation network makes the EOF readily accessible by road and air to designated personnel of all agencies and activities assigned an emergency response role by the emergency plan.

The physical structure of the facility has been well engineered for the design life of the plant. The building is a 65,000 square foot structure on reinforced concrete footings and floor slab, with supporting steel columns, beams, and joists. The built-up roofing material is supported on a steel deck.

The EOF conforms to all applicable building codes and has been designed to withstand winds and floods with 100-year recurrence frequency. The State of New Jersey Department of Environmental Protection identifies the 10-year and 100-year high-water levels at the EOF site as 7.1 feet and 8.9 feet above mean sea level, respectively. The floor elevation of the EOF is 9.0 feet. The elevation of the road to the EOF is slightly over 4 feet. Thus, record high water levels

would flood the access road and preclude access to the EOF by vehicle and could hamper activities of mobile monitoring teams in some areas. The EOF would continue to be accessible by helicopter. Internal EOF operations would continue without adverse impact.

The SGS Final Safety Analysis Report, Environmental Report, Operating License Stage, Appendix B-Report, Site environmental studies, identifies high winds with a 100-year recurrence frequency as having a maximum velocity of 100 miles per hour. It is not anticipated that such winds will significantly affect self-contained internal EOF operations. This is due to the strength of building construction and the availability of backup power.

However, activities of mobile monitoring teams would have to be suspended. Under such conditions, radiation exposures would be correspondingly low. Remote monitoring would continue to be available to the extent transmission lines survive. Similarly, data transmission could be adversely impacted by damage to microwave and radio antennae and transmission lines, particularly if winds were accompanied by electrical storms, which are often associated with squall lines, tornadoes and hurricanes. Under such circumstances, atmospheric conditions could be expected to intermittently affect data transmission and communications.

Protective clothing is maintained at the EOF, in accordance with the emergency plan. In addition, mutual support agreements with other utilities in the region include providing emergency equipment, including radiation survey devices and protective clothing. Sufficient potassium iodide for the staff is also stored in the EOF emergency equipment locker.

Additional supplies are available from Radiation Management Corporation, Philadelphia, Pennsylvania. A description of the methodology to determine airborne I-131 concentrations is presented in Section 10 of the Emergency Plan. Detection limits for I-131 are less than $1E-7$ uci/cc if not masked by noble gases. Masking is not expected to be a factor due to use of silver zeolite filter cartridges and adequate purge times in sample collections.

Ten full-face respirators with charcoal filters are maintained in the EOF. However, airborne contamination is not expected to present a major problem at the EOF due to its location and the upgraded ventilation system.

9.3.3 Size

The EOF meets or exceeds the space requirements of paragraph 8.4.1c of NUREG-0737, Supplement 1. Approximately 18,170 square feet of floor space in the Nuclear Training Center is designated for use as the Emergency Operations Facility. This provides more than 75 square feet of work space per person for a staff of up to 164 persons and 2,432 square feet for conference rooms.

Additional space is available in the building to accommodate another 100 persons in the unlikely event of a situation in which a greatly augmented staff would be required. Normal EOF occupancy by all concerned parties and agencies is not expected to exceed 80 persons.

The functional layout of the EOF (Figure 9.6) depicts designated work spaces:

1. Space for EOF data system equipment for data transmission and reception (Data Center, Communications Center)
2. Space to repair, maintain and service equipment displays and instrumentation (in Nuclear Training Center workshops and labs)
3. Space to accommodate communications equipment and its use by EOF personnel to perform their assigned functions.
4. Space for ready access to functional displays of EOF data (Data Center; provisions for installation of remote terminal in the Dose Assessment Area)
5. Space for storage of plant records and historical data or space for the means to readily acquire and display the records (Nuclear Training Center Library)
6. Space for PSE&G emergency response activities
7. Office space for state, local and FEMA personnel
8. Separate office space to accommodate a minimum of ten NRC personnel during emergency activation of the EOF (NRC offices)

Figure 9-6 depicts the EOF functional layout and illustrates work areas that are situated to facilitate the effective interaction necessary to accomplish operational objectives. Personnel are assigned to work areas in functional groups. Groups which perform related tasks and therefore would have the most need for face-to-face interaction are, in most cases, located adjacent to one another. Each work station is, assigned sufficient display space, equipped and staffed as appropriate to its function.

9.3.4 Radiological Monitoring

The EOF complies with the radiation protection provisions of paragraph 8.4.1B of NUREG-0737, Supplement 1 by providing radiological monitoring equipment in the EOF. This equipment provides the capability to monitor airborne radioactivity (gross beta, gamma, iodine, and particulates) to ensure that EOF personnel are not subjected to adverse radiological conditions. Available equipment sensitivity permits detectors to distinguish the presence or absence of radioiodines at concentration as low as 10^{-7} microcuries/cc. The monitors are portable units which are moved to various points in the facility during an emergency to ensure comprehensive coverage. Survey meters are available which have sensitivity ranges up to 1000 R/hr. Additional EOF radiation monitoring equipment includes self-reading dosimeters (both high range and low range), TLDS, air samplers and dual channel analyzer. Radiation monitoring equipment is stored in the emergency equipment locker (Table 9-1).

Instrumentation for continuous monitoring of beta air concentrations is equipped with a strip chart recorder, an alarm light, and bell. The alarm setting is variable and will be set slightly above background to give an early warning of adverse conditions which may affect EOF habitability. In addition, the alarm light provides visual warning of radiation levels. The instrumentation is maintained and calibrated on a regular schedule by station personnel. The Radiological Support Manager's staff at the EOF monitors the habitability when the EOF is activated.

Personnel assigned to the Radiological Support Manager's office have a variety of radiological health physics experience, including nuclear reactor power plant experience.

In addition to the equipment used for iodine air sample analysis, a beta counter is provided in the EOF for particulate and swipe sample analysis. The counting room and counting equipment used for training at the Nuclear Training Center is also available for EOF use. Backup counting and more definite analysis is available at the station (emergency situation permitting), the PSE&G Research and Test Laboratory in Maplewood, NJ, and at Radiation Management Corporation in Philadelphia, PA.

9.3.5 Instrumentation, Data System Equipment , and Power Supplies

The EOF complies with the provisions of paragraph 8.4 1G NUREG-0737, Supplement 1 by providing an EOF data system consisting of an Radiological Monitoring System and operational parameter data information which provides plant variables to a typewriter.

The system performs its functions independently of personnel actions in the Control Room and the TSC and will not degrade or interfere with Control Room and plant functions.

Backup power is provided to ensure data system availability. Backup power is supplied by a natural gas-driven engine generator in conjunction with an automatic transfer switch which activates the generator upon loss of power. The generator provides electrical output sufficient to supply all facility lighting, the telephone system and all EOF data and communications systems described in this document. Electrical equipment load in the EOF does not affect any safety-related power source. The data system has been designed to preclude loss of any stored data vital to EOF functions due to power supply failure or circuit transient (Reference SPDS, Section 5).

9.3.6 Technical Data and Data System

The EOF Technical Data set is capable of reliable collection, storage, analysis, display, and communication of information on containment conditions, radiological releases, and meteorology sufficient to determine site and regional status, determine changes in status, forecast status and take appropriate actions. Variables from the following categories that are essential to EOF functions are available in the EOF.

- a. Appropriate variables from Table 1 of Regulatory Guide 1.97 (Rev. 2) and;
- b. The meteorological variables in Regulatory Guide 1.97 (Rev. 2) for site vicinity and regional data available via communication from the National Weather Service.

9.4 Emergency News Center

Emergency News Center (ENC) facilities are maintained in leased premises. The ENC provides space for media briefings, media work area, and telephone access. Separate work areas are maintained for PSE&G, NRC, State and County personnel. The facility is convenient to major highways. Designed for public use, the building has sufficient facilities to support use by 200 or more media personnel.

The communications equipment is described in Section 7 and summarized in Table 7-1. For media use, commercial telephone lines have been assigned from a physically distant exchange, which would reduce the load on local telephone services during an emergency.

Under appropriate circumstances, space for a limited number of press representatives may be made available at the Emergency Operations Facility.

9.5 Additional Offsite Capabilities

9.5.1 Offsite Environmental Radiological Monitoring

Section 10, Accident Assessment presents a discussion of other assessment capabilities and instrumentation. The Stations are located on an Artificial Island which, within four miles, is surrounded by tidal marshlands or river. The thermoluminescent dosimeter (TLD) points of the routine off site environmental radiological monitoring program include TLDs in neighboring towns and cities and at schools and public assembly points, and at distances sufficiently close to the station to provide meaningful data in the event of an accident. No TLDs were deployed on marshlands where no serviceable roads existed. The Operational Radiological Monitoring program for the Station conforms to the NRC Radiological Assessment Branch Technical Position is described in Section 10.

9.5.2 Meteorological Monitoring

A meteorological program in accordance with the recommendation of NRC Regulatory Guide 1.23 "Onsite Meteorological Program" and Section 2.3.3 of NUREG 75/087 (Rev. 1) has been established. Monitoring and assessment capabilities are discussed in Section 10.

The dose calculation methodology of Section 10 of this Plan, concerning the transport and diffusion of gaseous effluents, is consistent with the characteristics of the Class A model outlines in NUREG-0654 (November 1980).

9.6 Field Assessment and Monitoring

The EOF, once operational, is the location for collection and assessment of all offsite radiological monitoring information from the survey teams. Periodically the information on doses calculated in accordance with Section 10 of the Plan is multiplied by the sector population data from Attachment 2 to provide an integrated dose to the affected population.

9.7 Administration and Maintenance of Emergency Facilities and Equipment

The emergency equipment listed in Table 9-1 is inventoried and operationally checked quarterly, and after each use to allow for replacement in the event of normal servicing and calibration. The instrument calibration frequency has been established in accordance with the appropriate technical guidance.

Table 9-1 is a generic listing of typical equipment maintained both on and offsite. Detailed listings are part of emergency preparedness inventory procedures.

TABLE 9-1
TYPICAL EMERGENCY EQUIPMENT

EQUIPMENT	CR/ OSC	CP	TSC	FMK EOF
RO2A Survey Meter*	L	L	L	L
RM14/E140N*	L	L	L	L
Teletector	L	L	L	
E-520 Survey Meter	L	L	L	L
R0-7	L	L		
High Range Dosimeter	L	L	L	A
Low Range Dosimeter	L	L	L	A
Dosimeter Charger	L	L	L	L
Air Sampler	L	L	L	L
Marinelli Beaker with sample head	L	L		
Charcoal Cartridges for Air Sampler	L	L	L	L
Silver Zeolite Cartridges for A/S	L	L	L	
Particulate Filter Papers for A/S	L	L	L	L
Envelopes for Particulate Samples	L	L	L	L
Flashlights with Battery(s)	A	L	A	
Spare Batteries (Replacement set for each Instrument)	L	L	L	L
Sample Containers or Small Bags	L	L	L	L
Smears	L	L	L	L
Rad Info Signs	L	A	L	

Notes appear at end of table

TABLE 9-1 (cont)

TYPICAL EMERGENCY EQUIPMENT

EQUIPMENT	CR/ OSC	CP	TSC	FMK/ EOF
Barricade Rope or Ribbon/Stanchions	L	A	L	
Tape	L	A	L	
Large Plastic Bags	L	L	L	L
Step Off Pads (SOPs)	L	A	L	
Paper or Cloth Coveralls	L	L	L	L
Shoe Covers	L	L	L	L
Rubber Gloves	L	L	L	L
Hoods and Caps	L	L	L	L
Respirators and Charcoal/Particulate Cartridges	A	A	A	
Emergency Plan Procedures - as applicable	A	L	L	A
SCBAs	L	A		
Check source (button)	L	L	L	A
KI Tablets	L	L	L	L
Absorbent Material		L	L	L
Calculator/Portable Computer	A	L	L	L
Thermoluminescent Dosimeters (TLD's)				A
Logs, Paper Supplies, Pens, (Clip Boards, etc.)	L		L	L
Plastic Sheeting			L	A
SAM-2, RD19 & Attachments			H	
First Aid Kit	L	L		

TABLE 9-1 (cont)

TYPICAL EMERGENCY EQUIPMENT

NOTES/LOCATION DESCRIPTIONS

- L = Location (Both Hope Creek and Salem)
- A = Accessible
- H = Only Hope Creek Applicable
- S = Only Salem Applicable
- * = "or equivalent"

1. The Control Room/Operations Support Center (CR/OSC) area comprises adjacent hallways, lockers, and storage areas.
2. Control Point comprises adjacent and accessible area including lockers, equipment issue areas, and dress out areas.
3. Technical Support Centers (TSC) are dedicated facilities.
4. Field Monitoring Kits/Emergency Operations Facility (FMK/EOF) describes materials reserved for Field Monitoring and maintained in locked storage separate from other EOF inventories.

FIGURE 9-1

SALEM GENERATING STATION
CONTROL ROOM AND OPERATIONS SUPPORT CENTER

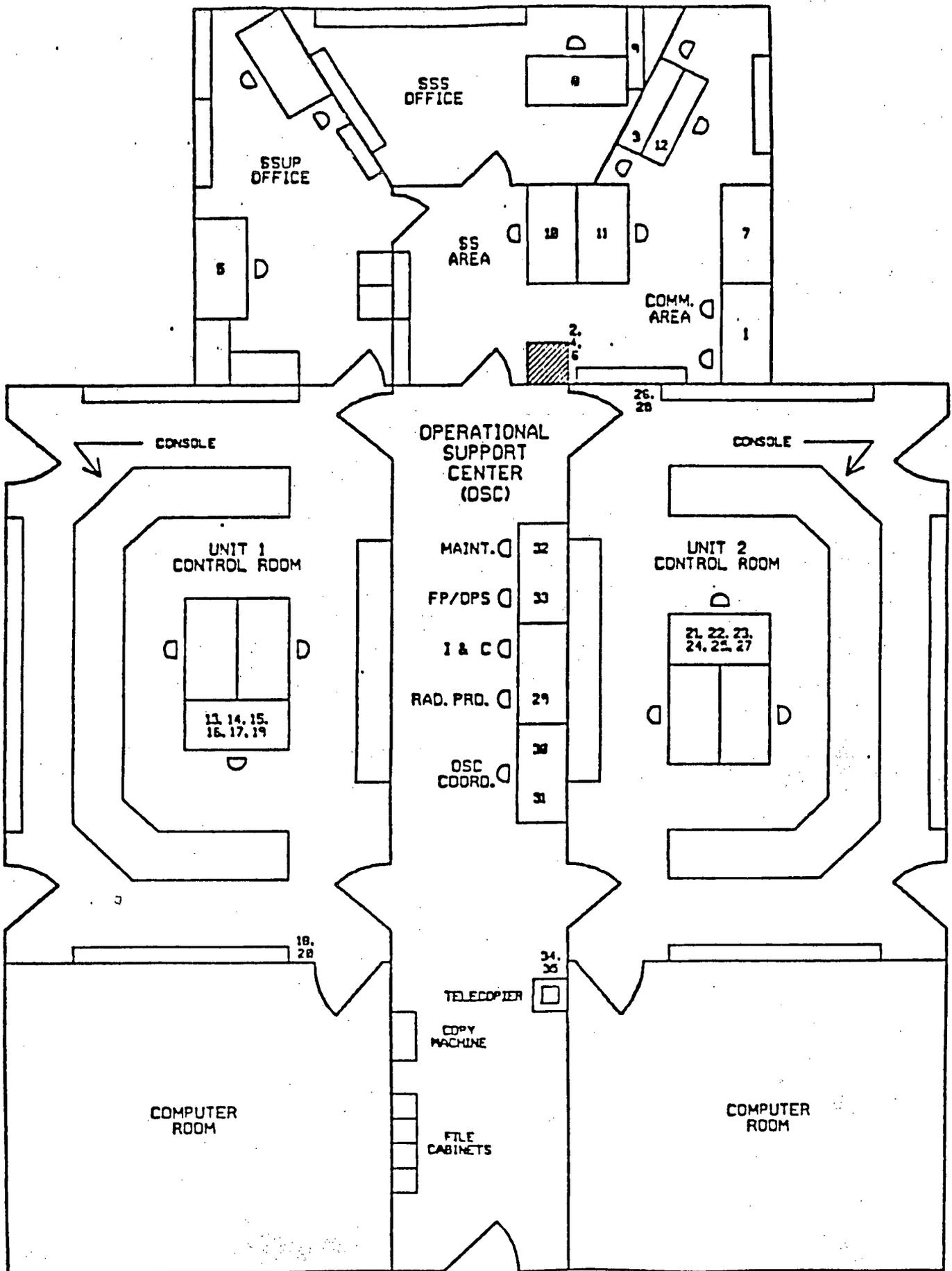
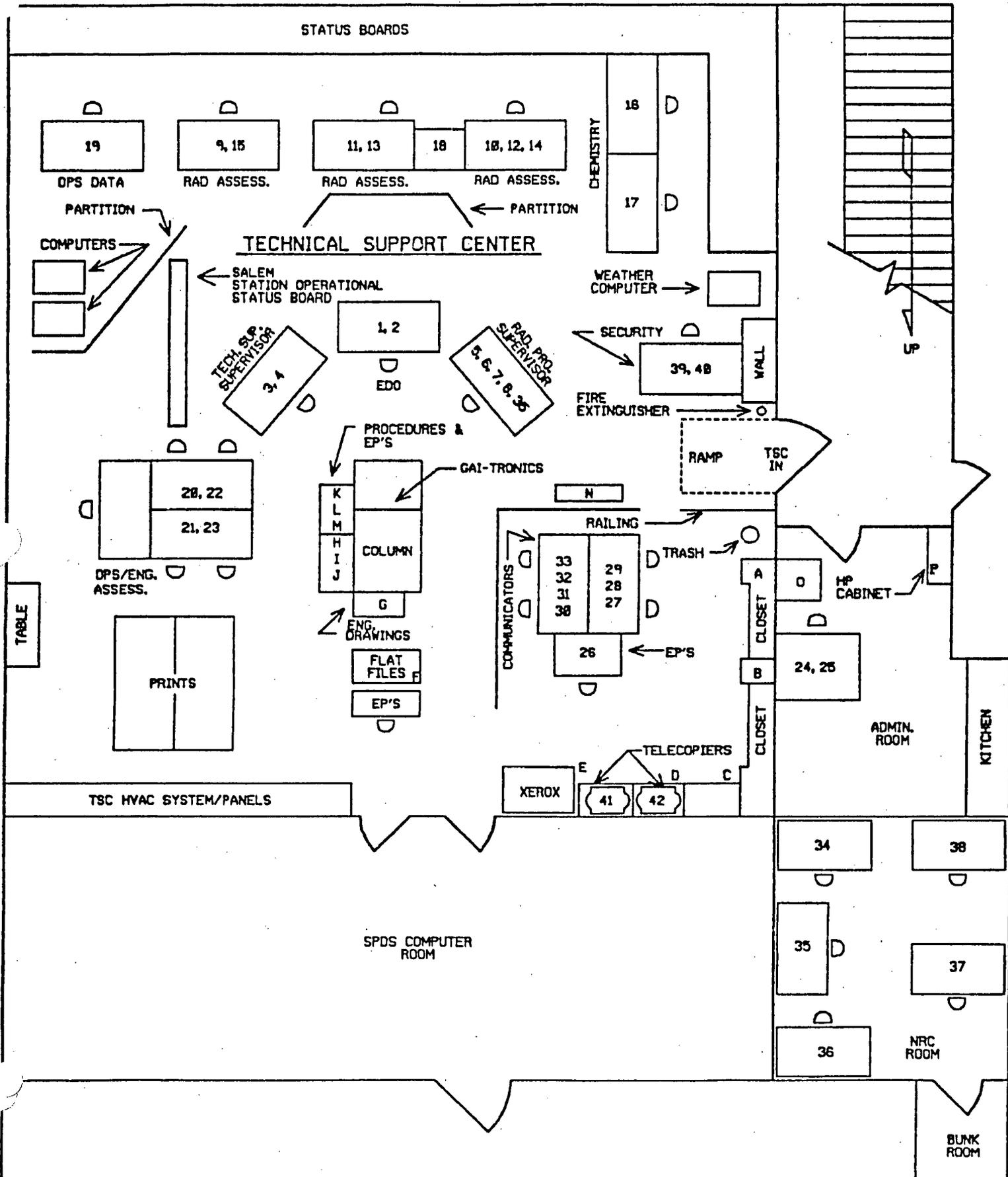


FIGURE 9-2

SALEM GENERATING STATION
TECHNICAL SUPPORT CENTER



HOPE CREEK GENERATING STATION
CONTROL ROOM AND OPERATIONS SUPPORT CENTER

FIGURE 9-3

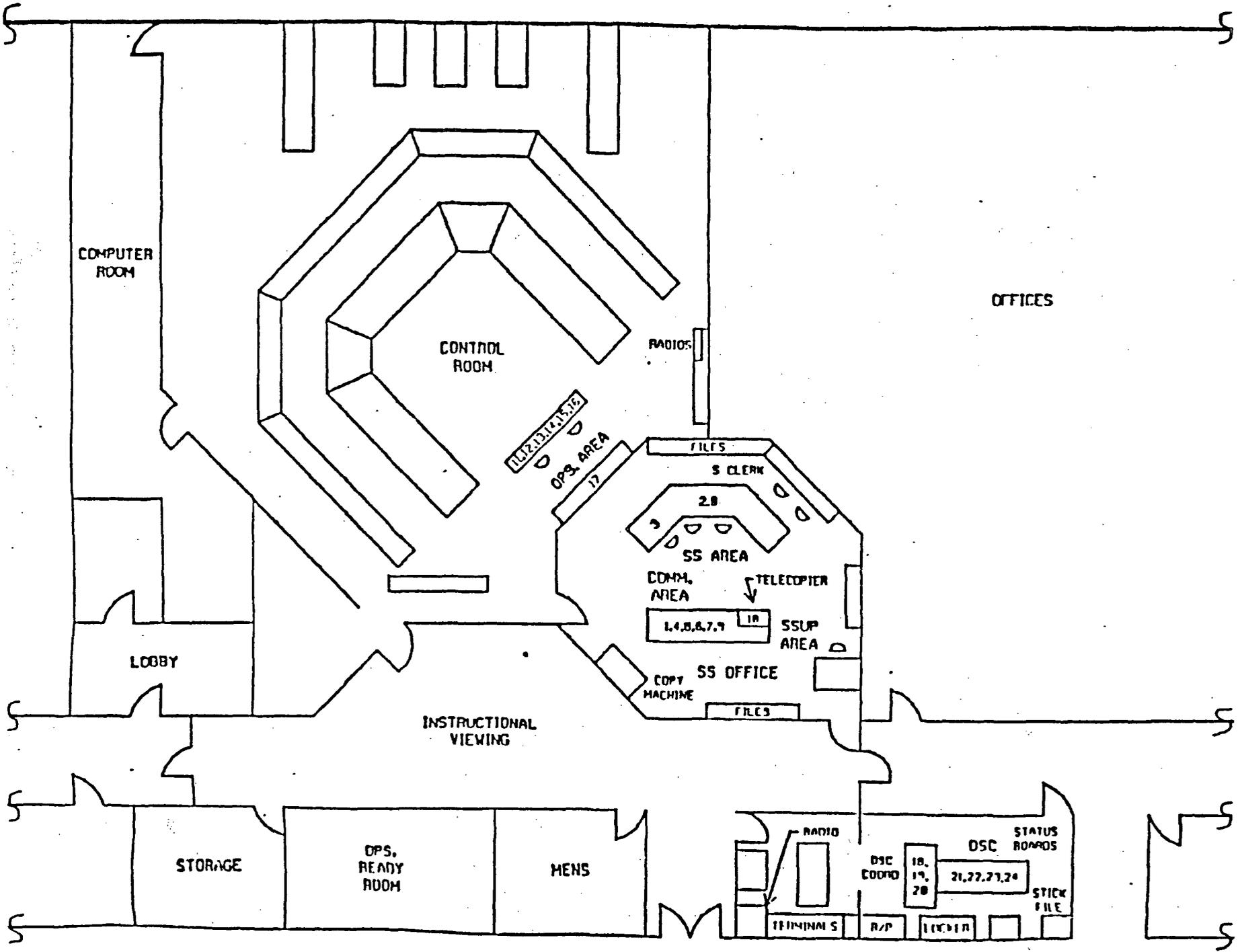
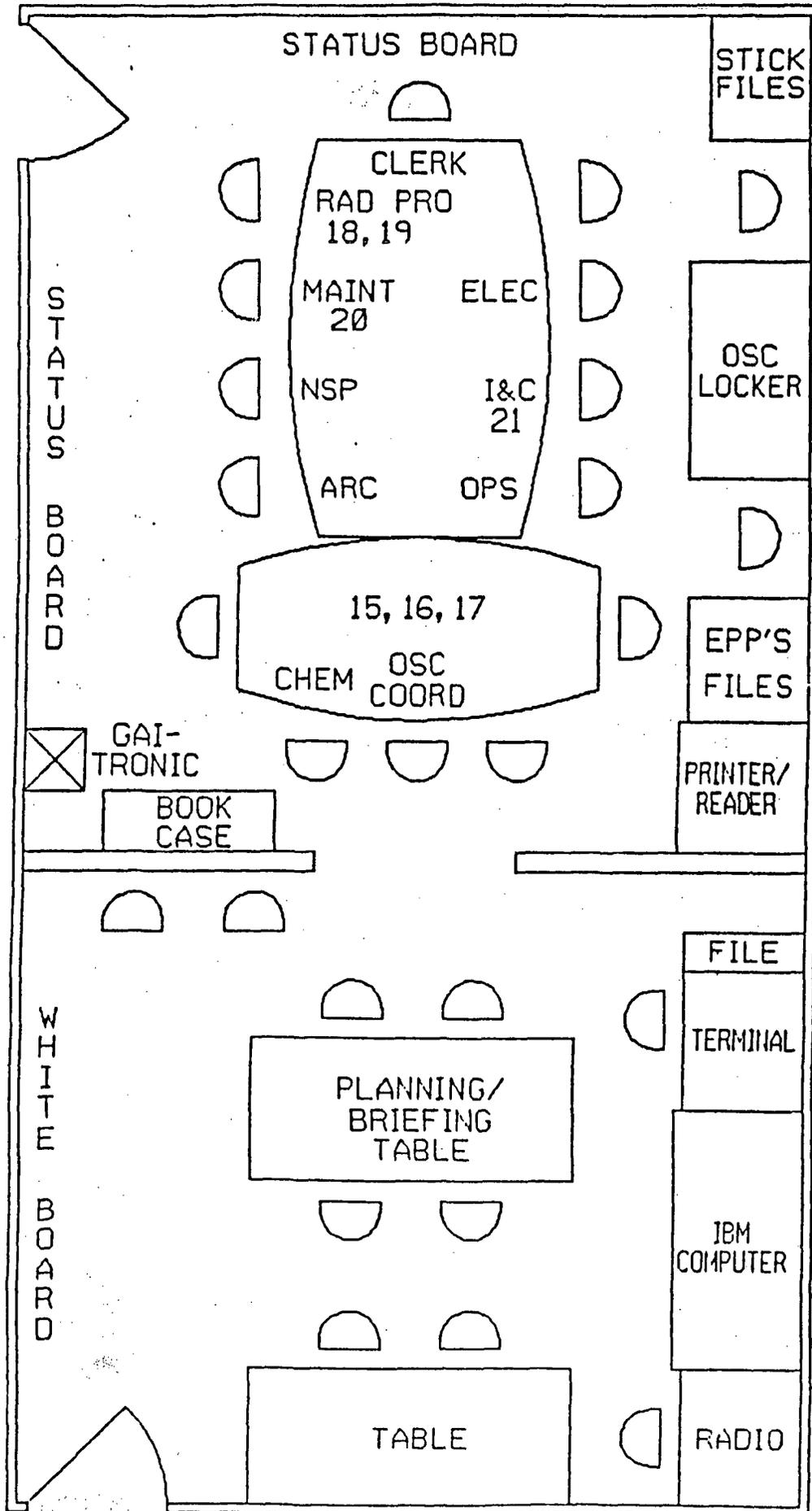


FIGURE 3-7
**HOPE CREEK GENERATING STATION
 OPERATIONS SUPPORT CENTER
 DETAILED ARRANGEMENT**



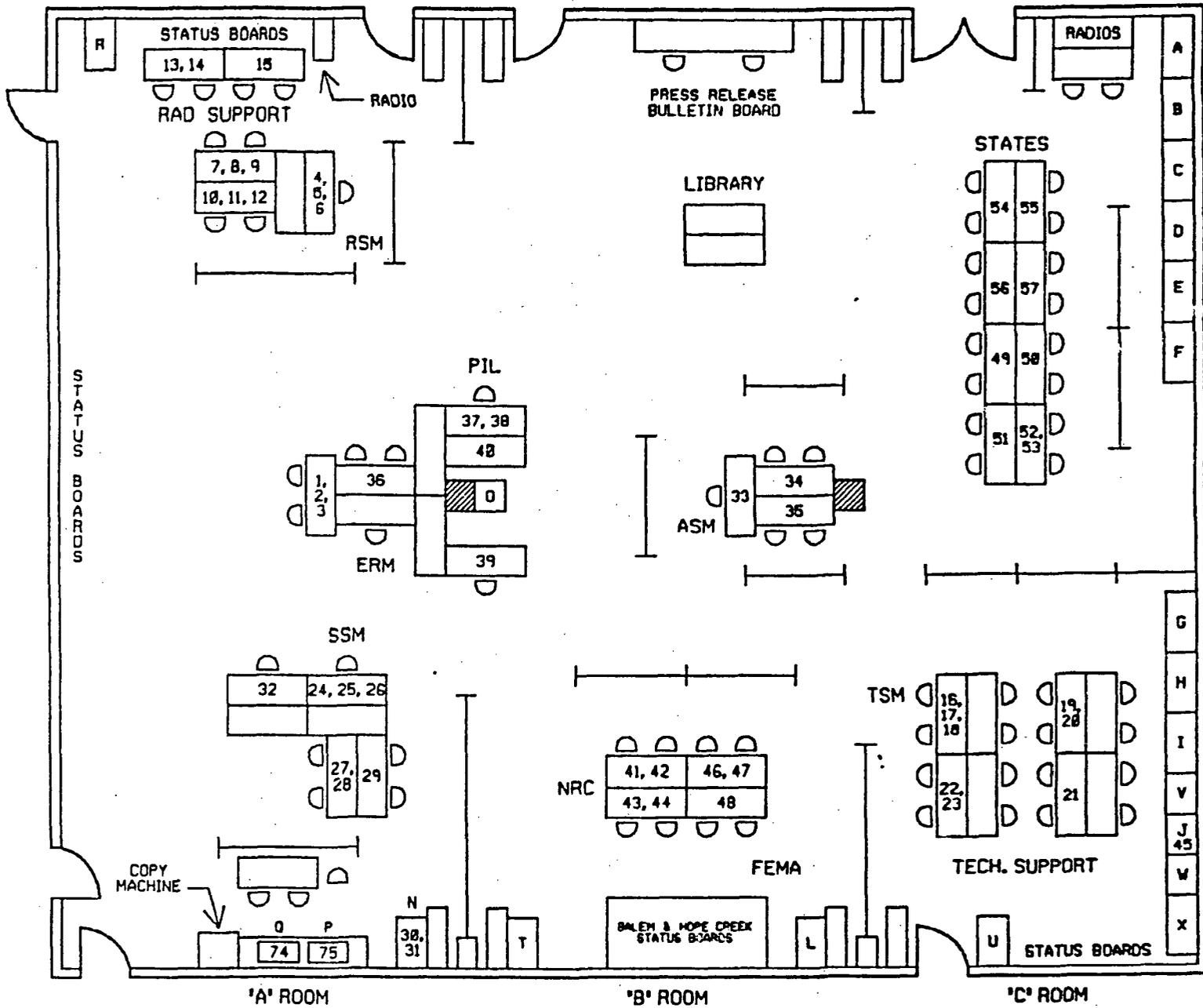


FIGURE 9-6
ARTIFICIAL ISLAND
EMERGENCY OPERATIONS FACILITY

SECTION 9

SIGNATURE PAGE

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Reviewed By: [Signature] 4/13/87
Emergency Preparedness Manager Date

Reviewed By: [Signature] 4/13/87
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(Emergency Plan Only) Date

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General Manager - Nuclear Safety Review
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SORC Review and Station Approvals

87-032 [Signature]
Mtg. No. Salem Chairman
4/30/87
Date

87-047 [Signature]
Mtg. No. Hope Creek Chairman
4/15/87
Date

[Signature]
General Manager - Salem
4/30/87
Date

[Signature]
General Manager - Hope Creek
4/16/87
Date

Hope Creek Safety Evaluation Report (SER) Supplement 5

NUREG-1048
Supplement No. 5

Safety Evaluation Report
Related to the Operation of
Hope Creek Generating Station

Docket No. 50-354

Public Service Electric and Gas Company
Atlantic City Electric Company

U. S. Nuclear Regulatory Commission

Office of Nuclear Reactor Regulation

April 1986

ABSTRACT

Supplement No. 5 to the Safety Evaluation Report on the application filed by Public Service Electric and Gas Company on its own behalf as co-owner and as agent for the other co-owner, the Atlantic City Electric Company, for a license to operate Hope Creek Generating Station has been prepared by the Office of Nuclear Reactor Regulation of the U.S. Nuclear Regulatory Commission. The facility is located in Lower Alloways Creek Township in Salem County, New Jersey. This supplement reports the status of certain items that had not been resolved at the time of the publication of the Safety Evaluation Report.

13.3 Emergency Plan

13.3.1 Background

The SER issued in October 1984 provided the staff's review and evaluation of the Hope Creek Generating Station radiological emergency response plan (plan) through Revision 4 submitted by the applicant by letter dated September 12, 1984 (R. Mittl, PSE&G to A. Schwencer, NRC). In the SER, the staff identified an open item and confirmatory items for which the applicant had made commitments but had not yet revised the plan. In response to the SER, the applicant upgraded the plan through Revision 7 submitted on April 4, 1985. Certain changes to the plan incorporated by Revisions 5, 6, and 7 were discussed with the applicant during an onsite visit on May 17, 1985, at which time the applicant committed to provide information/clarification requested by the staff. Subsequently, the applicant continued to upgrade the emergency planning program, and Revisions 8 (July 19, 1985), 9 (October 25, 1985), and 10 (January 13, 1986) to the plan were submitted for staff review.

Hope Creek Safety Evaluation Report (SER) Supplement 5

The staff has completed its review and evaluation of the adequacy of the applicant's plan (**through Revision 10**). The results of this evaluation are given in Section 13.3.2 of this supplement. The staff's findings are discussed under the same headings and numbering system used in the SER. The Federal Emergency Management Agency (FEMA) findings on offsite emergency planning and preparedness are provided in Section 13.3.3 of this supplement. Section 13.3.4 provides the staff's conclusions.

13.3.2 Evaluation of the Emergency Plan

13.3.2.1 Assignment of Responsibility (Organizational Control)

FEMA's Evaluation of Offsite Plans for the Plume and Ingestion Emergency Planning Zones

FEMA's findings on offsite plans are discussed in Section 13.3.3 of this supplement. This confirmatory item is resolved.

Finalizing Draft and Interim Letters of Agreement

The agreement letters identified in Attachment 2-1 to the plan have been completed and incorporated in the plan. The staff finds this portion of the applicant's plan acceptable.

Hope Creek SSER 5

13-8

13.3.2.3 Emergency Response Support and Resources

Emergency Response Capabilities of the General Electric Company

The applicant has included this information in Attachment 2-1.19 to the plan. The staff finds this portion of the applicant's plan acceptable.

13.3.2.4 Emergency Classification System

Event Classification Guide (ECG)

The applicant's ECG (Section 5.0 of the plan) was upgraded by Revisions 8 and 10 to the plan. The staff has completed its review and evaluation of the ECG contained in Revision 10 to the plan and finds that the ECG now conforms to the criteria of NUREG-0654. The staff finds this portion of the applicant's plan acceptable.

13.3.2.5 Notification Methods and Procedures

Emergency Plan Implementing Procedures

The applicant submitted the emergency plan implementing procedures on June 3, 1985, in accordance with the requirements of 10 CFR 50, Appendix E, Section V. The staff finds this portion of the applicant's plan acceptable.

Emergency Broadcast System (EBS) Manual

Section 6.0 (Revision 5, dated April 1, 1985) to the plan contains a reference to the EBS manual developed by the States of Delaware and New Jersey for broad-

Hope Creek Safety Evaluation Report (SER) Supplement 5

casting information on predetermined emergency responses to the public. The staff finds this portion of the applicant's plan acceptable.

13.3.2.6 Emergency Communications

Hope Creek Communication Systems

Section 7.0 (Revision 5, dated October 7, 1985) of the plan describes the upgraded Hope Creek emergency communication and alarm systems. The applicant has installed an off-premise extension (OPX) via a ROLM CBX II 9000 as the primary link with the States of New Jersey and Delaware and the counties of Salem, Cumberland, New Castle, and Kent. The 2-wire OPX facility is provided by New Jersey Bell Telephone Company. These telephones, as part of the nuclear emergency telecommunications system, are located in the senior nuclear shift supervisor's office, technical support center (TSC), emergency operations facility (EOF), State Police communications bureau, control room, operations support center (OSC), and emergency news center. Two separate backup communication links, consisting of ESSX I and Dimension 2000 telephones (commercial lines), are strategically placed throughout Hope Creek as a means of notifying the above-listed States and counties. The plan also describes an alternate backup communication link for New Jersey (emergency radio), Delaware (National Warning System), and Salem and Cumberland Counties (emergency radios).

Hope Creek SSER 5

13-9

The description includes an alarm system consisting of fire, radiation alert, and evacuation (reactor building, refueling floor, and emergency diesel room) alarms, a station public address (PA) system, a station telephone (Dimension 2000) system, and a station radio system. The site radiation alert alarm will be broadcast throughout the site by the PA system. The alarm has a manual suppress feature used to lower the alarm volume after about 15 sec, so that further information or instructions may be broadcast on the PA system regarding special measures that may be necessary for site personnel. If evacuation from the site or certain buildings on site becomes necessary, appropriate instructions will be broadcast. Evacuation alarms (local only) sounding in the reactor building, refueling floor, or emergency diesel room call for an immediate evacuation of that area.

The station telephone system (Dimension 2000 Private Branch Exchange), which serves all station personnel, is used for calls within the station, as a tie line to all company locations, and as access to the Public Switched Network (PSN) via New Jersey Central Bell. Primary and backup tie lines are provided to company locations and PSN.

The station radio system is a multifrequency security radio system. When an emergency event is declared, one specific frequency is assigned for emergency communications between the control room, TSC, EOF, and onsite and offsite radiation monitoring teams. The plan specifies that direct communications to the NRC are located in the control room, TSC, and EOF.

The staff finds this portion of the applicant's plan acceptable.

13.3.2.7 Public Information

Hope Creek Safety Evaluation Report (SER) Supplement 5

Public Information Brochure

The final brochure was submitted by the applicant and evaluated by FEMA in the course of its evaluation of offsite plans and preparedness. See Section 13.3.3 of this supplement. On the basis of the above, the staff finds this portion of the applicant's plan acceptable.

13.3.2.8 Emergency Facilities and Equipment

Technical Support Center (TSC) and Operations Support Center (OSC)

A detailed discussion of the OSC and TSC has been incorporated into the plan. Section 9.0 (Revision 8, dated October 7, 1985) provides a description of the TSC, including location, staffing, habitability, instrumentation, technical data (e.g., technical drawings, emergency plan implementing procedures, and abnormal operating procedures), access control, and emergency communication equipment. The TSC is activated for alert, site area emergency, or general emergency levels. The TSC is used as the primary source of in-plant information that is made available to offsite agencies until the EOF is activated and assumes many of these information, data, and communication functions. The emergency duty officer or a designated person will be responsible for activating the TSC. The applicant estimates that full activation of the TSC can be completed within 1 hour following initial notification of assigned personnel, consistent with initial notifications, travel, and other conditions.

Hope Creek SSER 5 13-10

As described in the plan, the OSC is located in a conference room adjacent to the control room. An OSC coordinator is designated to coordinate support personnel efforts. The plan provides for an alternative facility if personnel requirements exceed the capacity of the OSC. Table 9-1 of the plan describes equipment available to the OSC.

The staff finds this portion of the applicant's plan acceptable.

Interim Facilities

The staff has concluded that the applicant's emergency plan meets the guidance criteria of NUREG-0654 with regard to the EOF (SER Section 13.3.2.8) and the TSC and OSC (Section 13.3.2.8 in this supplement). The EOF, TSC, and OSC were used during the full-participation (Delaware) emergency preparedness exercise at Hope Creek on October 29, 1985. In addition, the EOF was used during exercises at Salem in October 1983, October 1984, April 1985, and December 1985. The EOF (which is common to Hope Creek and Salem) was reviewed during the on-site appraisal at Salem, and the TSC and OSC were reviewed during the onsite appraisal at Hope Creek and documented in Region I Inspection Report No. 50-354/85-40. On the basis of a review of information in the emergency plan and procedures, observations made during the exercises, and the findings of the onsite appraisals, the staff concludes that, on an interim basis, an adequate planning basis has been established and the emergency response facilities (ERFS) are capable of supporting an emergency response effort in the event of an emergency at Hope Creek. The resolution of open items related to the completion of the TSC and OSC identified in the inspection report will be verified by NRC regional personnel. As indicated in the SER, the staff will conduct a postimplementation

Hope Creek Safety Evaluation Report (SER) Supplement 5

appraisal of the ERFs against the requirements and guidance criteria of Supplement 1 to NUREG-0737. Accordingly, the schedule of the postimplementation appraisal of the final ERFs will be established after these facilities have been completed.

Onsite Monitoring Systems

Sections 9.1 and 10.2 of the plan generally describe the radiological and process monitoring systems. Potential gaseous release pathways are identified. Table 9-8 of the plan provides a detailed listing of the radiological and process monitors, including identification of the monitor, number of channels, detector type, location and range, and minimum detectable concentration. Table 9-8 also lists area radiation monitor locations and ranges. According to the plan, FSAR Sections 11.5 and 12.3.4 provide a complete description of the radiation monitoring program. The staff finds this portion of the applicant's plan acceptable.

Seismic and Hydrological Monitors

Section 9.1 of the plan generally describes the seismic and river-level monitoring systems. According to the plan, a complete description of the seismic monitoring system may be found in FSAR Section 3.7.4. The ECG contains emergency action levels based on readings from these geophysical monitoring systems. The geophysical instrumentation at the Salem station will provide backup capability. The staff finds this portion of the applicant's plan acceptable.

Hope Creek SSER 5
Meteorological Monitoring Program 13-11

The description of the capabilities to be provided with regard to the meteorological monitoring program for emergency planning purposes is included in Section 13.3.2.9 below.

13.3.2.9 Accident Assessment

Emergency Dose Assessment Methodology

Several methods for assessing the potential and actual consequences of a release of airborne radioactivity are stated in the plan. The Hope Creek central radiation processor (CRP) provides release rate and dose rate calculations and dose integration. However, the primary method will use MIDAS (meteorological information and dose assessment system), a micro VAX II that is linked to Hope Creek's CRP. Until the MIDAS software is installed at Hope Creek, a dedicated telephone-line connection to Packard, Lowe, and Garrick (PLG) is provided to use PLG's MIDAS on time-shared-facilities.

Two atmospheric dispersion models are included in the MIDAS dose assessment capability. The first is a simple straight-line Gaussian model of the kind typically used for initial dose assessments in an emergency situation, and which is described in Appendix 2 to NUREG-0654 as a "Class A" model.

The second atmospheric dispersion model is a plume-segment model that can consider spatial and temporal variations in atmospheric dispersion conditions and

Hope Creek Safety Evaluation Report (SER) Supplement 5

that can provide estimates of the deposition of material released to the atmosphere. This model is the kind typically used for extended dose assessments, and which is described in Appendix 2 to NUREG-0654 as a "Class B" model.

Several choices of source term input have been incorporated into the procedures for use of the various models. These include information on radionuclide concentrations and flow rates from plant effluent monitors, measurements of dose rates inside containment, and preset release scenarios for accident scenarios based on design-basis accidents. Meteorological information necessary to use the dose assessment methodologies can be obtained from the plant meteorological monitoring system and alternative sources.

Another method available for dose assessment is a personal computer-based straight-line Gaussian model. In addition, a manual method is available for assessment of potential and actual accident doses. The instructions for using this method have been incorporated in the emergency plan implementing procedures.

The applicant has developed procedures to monitor potential release pathways and to use the monitoring results to make dose projections for different meteorological conditions. Procedures have been developed for making dose projections based on field results. Emergency plan implementing procedures have also been developed describing in detail how dose projections will be made if radiation monitors are off scale or out of service.

In the event of a radioactive release to the liquid pathway (i.e., the Delaware River), water samples will be taken and counted with a NaI gamma scintillation

Hope Creek SSER 5 13-12
detector or equivalent, and dose projections will be made from the instrument readings.

The dose assessment methods described by the applicant can estimate doses to the relevant target organs of individuals in the vicinity of the site. On the basis of the review of the applicant's dose assessment methods, the staff finds that these methods are adequate for planning purposes. The applicant's ability to implement dose assessment techniques and methods was assessed during the onsite appraisal and documented in Inspection Report No. 50-354/85-40.

On the basis of information contained in Section 10.0 of the plan, the staff finds that the applicant is using acceptable atmospheric dispersion models in the dose assessment methodology for emergency response. The atmospheric dispersion models, including procedures for their use, were evaluated during the onsite appraisal and documented in Inspection Report No. 50-354/85-40. Region I personnel identified three open items related to the implementation of the meteorological monitoring program which will be resolved by Region I personnel during followup inspections before fuel load.

With respect to the accident dose assessment methodology and its supporting meteorological provisions, the staff finds that an adequate planning basis has been provided and this portion of the applicant's plan is acceptable and SER Open Issue 13 is resolved.

Hope Creek Safety Evaluation Report (SER) Supplement 5

Curves of Containment Radiation Monitor Readings vs Time

Section 10.3 of the plan has been revised to reference procedures that will include methods to evaluate potential doses based on containment inventory and known or suspected leak rates. Figure 10-1 of the plan is a nomogram of containment inventory and offsite dose rates. The staff finds this portion of the applicant's plan acceptable.

13.3.2.10 Protective Response

Predetermined Protective Action Recommendation Scheme

Procedures EP I-4 and I-20, incorporating the guidance of Appendix 1 to NUREG-0654 pertaining to predetermined protective action recommendations in the event of a general emergency, have been submitted by the applicant. These procedures were reviewed during the onsite appraisal on August 12-16, 1985, and documented in Inspection Report No. 50-354/85-40. The procedures were found to conform to NUREG-0654. This matter is resolved.

13.3.2.11 Radiological Exposure Control

Site Evacuation Criteria, Protective Action Recommendation Guidance, Emergency Worker Exposure Limits and Decontamination Guidance

Plan implementing procedures that provide detailed instructions on the above emergency planning aspects have been submitted by the applicant. These procedures were reviewed during the onsite appraisal on August 12-16, 1985, and documented in Inspection Report No. 50-354/85-40. Inspectors found the procedures adequate. This matter is resolved.

Hope Creek SSER 5

13-13

13.3.2.12 Medical and Public Health Support

Salem Memorial Hospital (SMH) Plan

On August 9, 1985, the applicant submitted a revised SMH plan, Revision 8, dated June 1985. The staff has reviewed the revised SMH plan and finds that the information previously requested by the staff has been incorporated. The staff finds this portion of the applicant's plan acceptable.

Offsite Emergency Planning Medical Services

In a recent decision, *GUARD v. NRC*, 753 F.2d 1144 (D.C. Cir. 1985), the U.S. Court of Appeals vacated the Commission's interpretation of 20 CFR 50.47(b)(12) to the extent that a list of facilities was found to constitute adequate arrangements for medical services for members of the public off site exposed to dangerous levels of radiation. The Commission has now provided guidance to be followed in determining compliance with this regulation pending its determination of how it will proceed in response to the Court's remand. In particular, the Commission directed that licensing boards, and in uncontested cases, the staff, should consider the uncertainty attendant to the Commission's interpretation of this regulation, especially in regard to its interpretation of the term "contaminated injured individuals." In *GUARD*, the Court left open to the

Hope Creek Safety Evaluation Report (SER) Supplement 5

Commission the discretion to reconsider whether that term should include members of the offsite public exposed to dangerous levels of radiation and, thus, whether arrangements for this population of individuals are required at all. For this reason, the Commission observed that it may reasonably be concluded that "no additional actions should be taken now on the strength of the present interpretation of that term." Accordingly, the Commission observed that it can be found "that any deficiency which may be found in complying with a finalized post GUARD planning standard (b)(12) is insignificant for the purposes of 10 CFR@50.47(c)(1)." In this regard, the Commission, as a generic matter, noted the low probability of accidents that might result in exposure of members of the offsite public to dangerous levels of radiation as well as the slow development of adverse reactions to overexposure. See "Emergency Planning; Statement of Policy," 50 FR 20892.

Consistent with the foregoing Statement of Policy, on October 25, 1985, the applicant confirmed that the emergency plans of the involved offsite response jurisdictions contain a list of medical service facilities. The existence of such a list in the pertinent plans has also been confirmed by FEMA. By letter dated January 17, 1986 (C. McNeil], PSE&G, to E. Adensam, NRC), the applicant committed to fully comply with the Commission's response to the Court's remand.

Accordingly, on the basis of the factors identified by the Commission in its Statement of Policy, the staff has determined that the requirements of 10 CFR 50.47(c)(1) have been satisfied so as to warrant issuance of the operating license pending further action by the Commission with respect to the requirements of 10 CFR 50.47(b)(12).

13.3.2.15 Radiological Emergency Response Training

Hope Creek Visitor's Guide (Information Brochure)

Section 16.5 of the plan states that personnel, including visitors, who have not received general employee training will be provided with an information

Hope Creek SSER 5

13-14

brochure describing the emergency procedures when they enter the guardhouse for a visitor's badge. A sample information brochure has been provided to the staff. Review of the final brochure and its implementation was conducted during the onsite appraisal on August 12-16, 1985, and documented in Inspection Report No. 50-354/85-40. On the basis of the above discussion, this item is resolved.

13-3.3 Federal Emergency Management Agency Review of State and Local Emergency Response Plans

The FEMA interim findings of January 14 and 15, 1986, which are based on the reviews of State and local plans by FEMA Regions II and III and the results of exercises conducted to date in New Jersey and Delaware, are provided in Appendix Q to this supplement. In Appendix Q, only the interim finding cover memoranda are provided. Copies of the memoranda, with enclosures, are available in the public document rooms. FEMA states that there is reasonable assurance that State and local plans are adequate to protect the health and safety of the public in the event of an accident at Hope Creek. Exercises to test the plans of the State of New Jersey (including Salem and Cumberland Counties) and the State of Delaware (including New Castle and Kent Counties) were held on October 1, 1985, and on October 29 and November 15, 1985, respectively. FEMA re-

Hope Creek Safety Evaluation Report (SER) Supplement 5

ported that the New Jersey and Delaware plans were successfully demonstrated.

To ensure that the formal approval of offsite plans by FEMA is completed in a timely manner, the staff requires the following license condition:

Formal Federal Emergency Management Agency Finding

In the event that the NRC finds that the lack of progress in completion of the procedures in the Federal Emergency Management Agency's final rule, 44 CFR Part 350, is an indication that a major substantive problem exists in achieving or maintaining an adequate state of emergency preparedness, the provisions of 10 CFR Section 50.54(s)(2) will apply.

13.3.4 Conclusions

On the basis of the staff's review of the applicant's plan and other applicable information, the NRC and FEMA evaluation of the full-participation exercise, and the staff's review of the findings and determinations made by FEMA on the adequacy of State and local emergency response plans and preparedness, the staff concludes that the state of onsite and offsite emergency preparedness provides reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency.

HOPE CREEK ASSESSMENT OF EOP vs. SAG STEPS

Purpose:

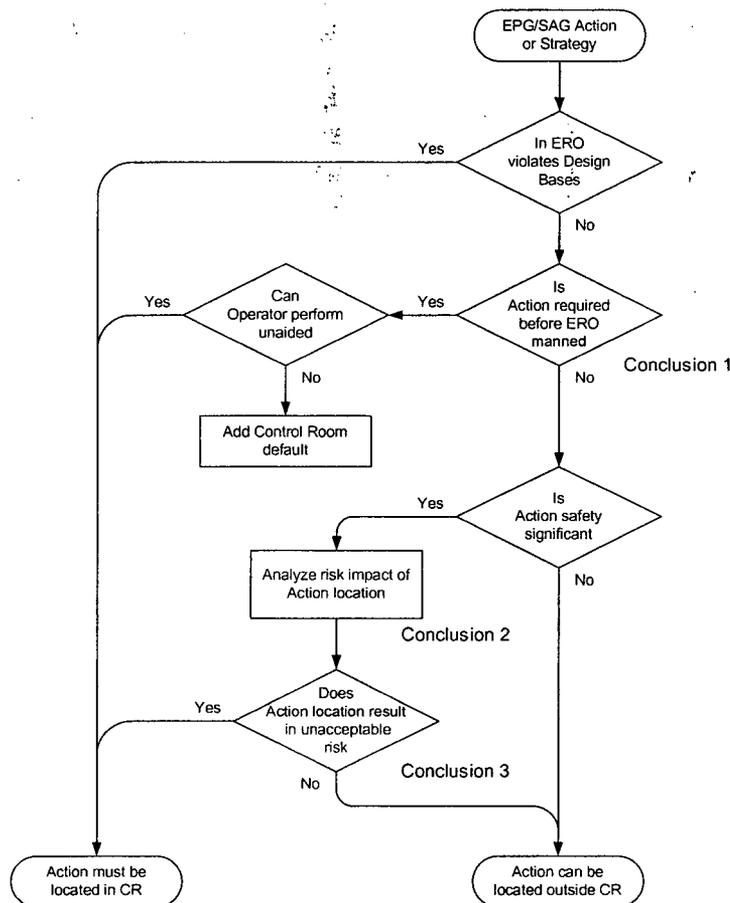
The purpose of this assessment was to determine the impact of delaying TSC activation by 15 minutes on actions taken by the operators to prevent core damage and mitigate a severe accident.

Current State:

Emergency Operating Procedures are implemented in the control room.

Decision making for Severe Accident Management is conducted by the Technical Support Supervisor (TSS) in the TSC and plant implementation continues to be carried out by operators in the control room and OSC (field operations).

BWROG emergency procedures and accident management strategies do not assume any specific timeline or time to given core damage states as the actions prescribed are based on symptoms. The attached flowchart was developed for utilities that desired relocation of SAG and/or selected EOP steps to the TSC for implementation. A generic assessment of event timing was performed that suggested TSC implementation of SAG would be acceptable. In addition the BWROG Overview Document section 3.2 describes a generic rationale for transition from EPG (EOP) to SAG which credits the availability of the ERO (attached).



HOPE CREEK ASSESSMENT OF EOP vs. SAG STEPS

HOPE CREEK EOP/SAG STEP COMPARISON:**REACTOR PRESSURE VESSEL (RPV) CONTROL:**

The Emergency Operating Procedure (EOP) steps that prescribe transition to Severe Accident Guidelines (SAGs) direct lining up and maximizing RPV injection either 1) to restore RPV level above the Minimum Steam Cooling RPV Water Level or 2) to achieve reactor pressure vs. number of SRVs open adequate to remove decay heat (when RPV water level indication is not available). These steps would be in effect until the TSC is available to advise other actions.

These EOP steps are consistent with the priorities of the SAGs unless core breach is considered likely. At that point, preserving the containment barrier becomes a higher priority as does putting water on the drywell floor. For sequences that involve an ability to inject to the drywell, but not to the RPV; operator guidance could be enhanced by promoting initiation of drywell sprays to ensure there is water beneath the RPV to mitigate large early release caused by drywell melt through¹. If RPV injection is adequate to achieve decay heat removal or level is restored above bottom-of-active-fuel (BAF), the priority shifts back to the RPV.

Core breach is considered likely in SAG when 1) RPV level cannot be restored and maintained above -311" (BAF) AND 2) RPV injection cannot be restored and maintained above Minimum Debris Retention Injection Rate. For a worst-case loss of all RPV injection sequence, the timeline provided by ERIN Engineering for Hope Creek shows that BAF is uncovered at time 1.6 hours, which is AFTER the proposed TSC activation time of 1.5 hours. Direction to lineup and inject to the RPV with all available injection systems in accordance with the EOPs would be appropriate during this timeframe.

CONTAINMENT/COMBUSTIBLE GAS CONTROL:

Once emergency depressurization is complete which would have been required as a result of RPV level control actions, the only steps left in containment control mitigation are decay heat removal (drywell sprays, suppression pool cooling and containment venting) and hydrogen control. Drywell spray and containment venting are integrated into SAG sections that are discussed above and are secondary to actions required and desired to restore reactor water level.

Steps to address the presence of hydrogen are initially limited by the time it takes to obtain readings from the monitors. For Hope Creek's Mark 1 containment the most critical steps are those that maintain the containment inerted. Therefore, the default combustible gas control strategy becomes preventing air (O₂) from being introduced into containment.

CONCLUSION:

The impact of TSC activation delay by 15 minutes on actions taken to prevent core damage and mitigate a severe accident is minimal based on 1) the time it takes to create substantial core damage, 2) the guidance available to the control room operators to protect the core and maintain the containment closed and cooled and 3) limited differences in priorities between emergency operating procedures and severe accident guidance that might be in use prior to ERO activation.

¹ Loss of RPV injection without LOCA may not result in a trigger (DW press or DW temperature) in the containment control EOP for initiating DW sprays. For sequences that involve heat addition to the DW, containment control EOPs would address this condition, and the use of sequence timing (1.6 hrs) that does not assume a primary system breach is justified.

HOPE CREEK ASSESSMENT OF EOP vs. SAG STEPS

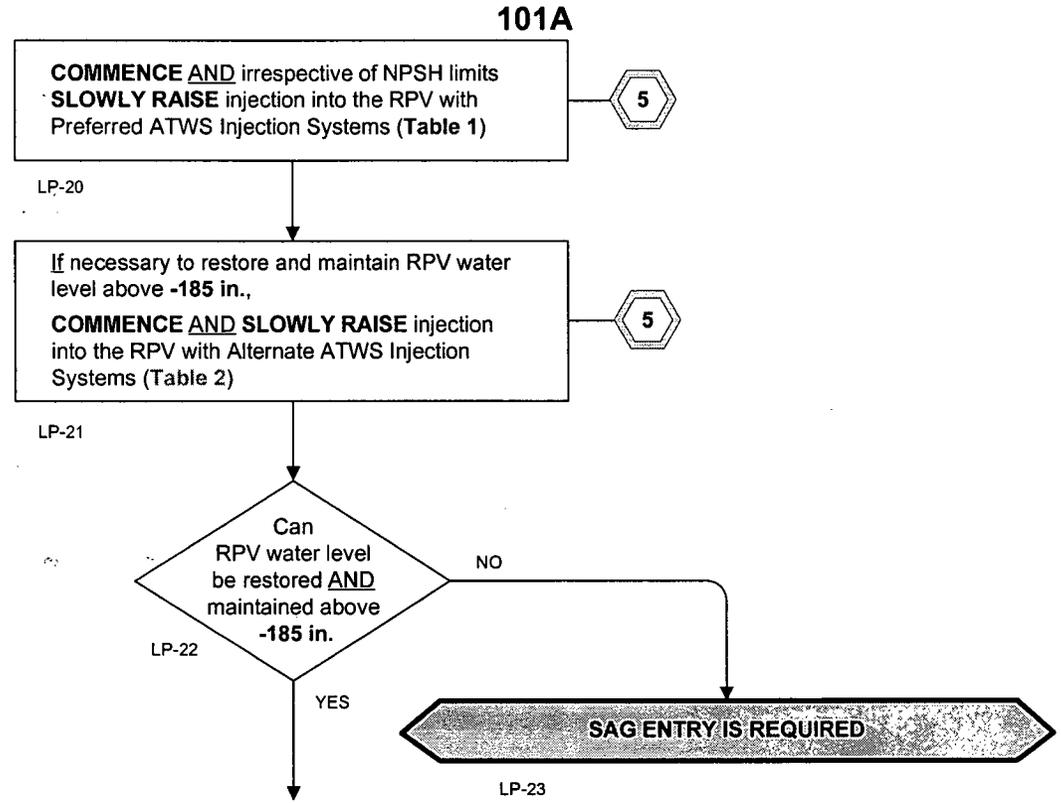
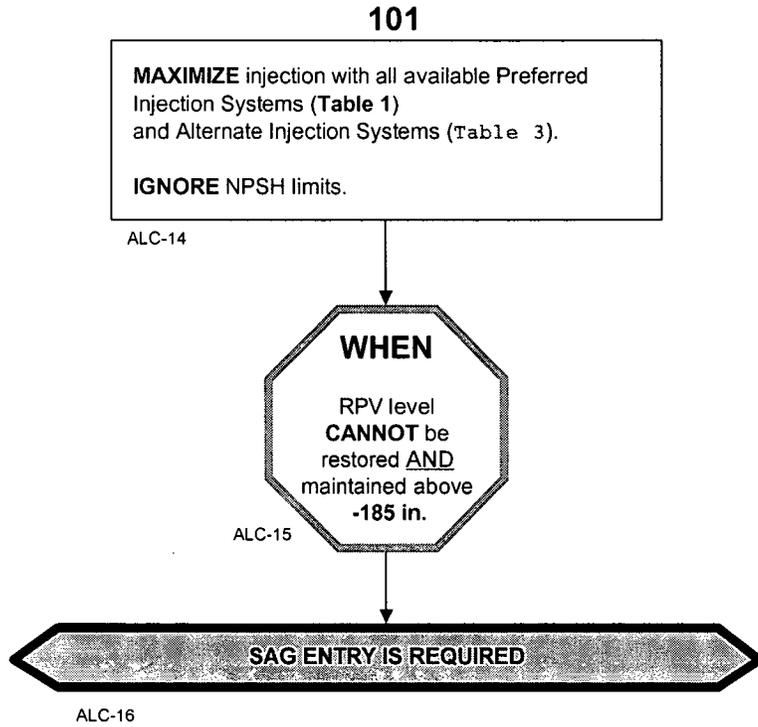
BWROG OVERVIEW DOCUMENT:**3.2 JUSTIFICATION FOR THE TRANSITION [EPG to SAG]:**

A severe accident is, in general, considered to begin with the onset of core damage. Due to the totally symptomatic nature of the EPGs, it is very difficult to define an explicit point in any EPG strategy that is discretely indicative of the onset of core damage. Entry conditions for the SAG were chosen as the most logical transition from the EOPs into the PSAMG. The SAG is entered from either EPG Contingency #1 - Alternate Level Control, or Contingency #5 - Level Power Control, when RPV water level cannot be restored and maintained above the Minimum Steam Cooling RPV Water Level. The SAG are also entered from EPG Contingency #4 - RPV Flooding when the specified flooding conditions cannot be established.

While these conditions provide symptomatic indication that adequate core cooling may no longer be maintained and that core damage is likely or possible, events can be postulated on both sides of the transition that seemingly violate the concept. Before conditions requiring entry into the SAG are reached, it is believed that core damage can occur during the ATWS instability event. The type of core damage in the ATWS event, however, is believed to be non-progressive and limited and not mitigated by maintaining adequate core cooling through core submergence. It is also believed that the licensing basis DBA LOCA will provide conditions that require entry into the SAG but will not result in core damage. The SAG, however, continue to provide technical guidance that is appropriate for the DBA LOCA event. These entry conditions are believed to be the most logical transition from the EOPs into the PSAMG for the following reasons.

1. In general, the nature of the guidance provided before the transition is aimed at preventing the accident from progressing to core damage. In general, the nature of the guidance provided after the transition is aimed at termination or mitigation of further core damage; maintaining the capability of the containment as long as possible; and minimizing the on-site and off-site releases and their effects. Based on the nature of the guidance, there is good correlation with NEI 91-04 and BWROG descriptions of severe accident mitigation.
2. If the SAG are entered, plant conditions now exist that create a perception that adequate core cooling is not being maintained and that core damage is likely or possible. If core damage does occur, the significance of any radiological release, intentional or unintentional, can increase substantially. **If the elements of the ERO outside the Control Room have not already been involved in the decision making process, they need to be at this point.** In addition to consideration of plant information available to the operators, **decision making under these conditions must also include consideration of onsite response efforts and factors external to the plant. This information is more readily available to other elements of the ERO than the Control Room.**
3. **If the SAG must be entered, the control room has done all that can be reasonably performed without additional resources.** Multiple, diverse, redundant systems, power supplies, and methods of equipment operation are provided to ensure a high degree of reliability for the prevention of a severe accident. **For plant conditions to require entry into the SAG, all the defense in depth must have failed for one reason or another. The operator has utilized all available resources and is still unable to establish and maintain conditions indicative of adequate core cooling. The event has exceeded the on shift capability and additional resources are needed to bring the event under control. The additional resources are provided by augmentation from the elements of the ERO outside the Control Room.**

RPV CONTROL EOPs

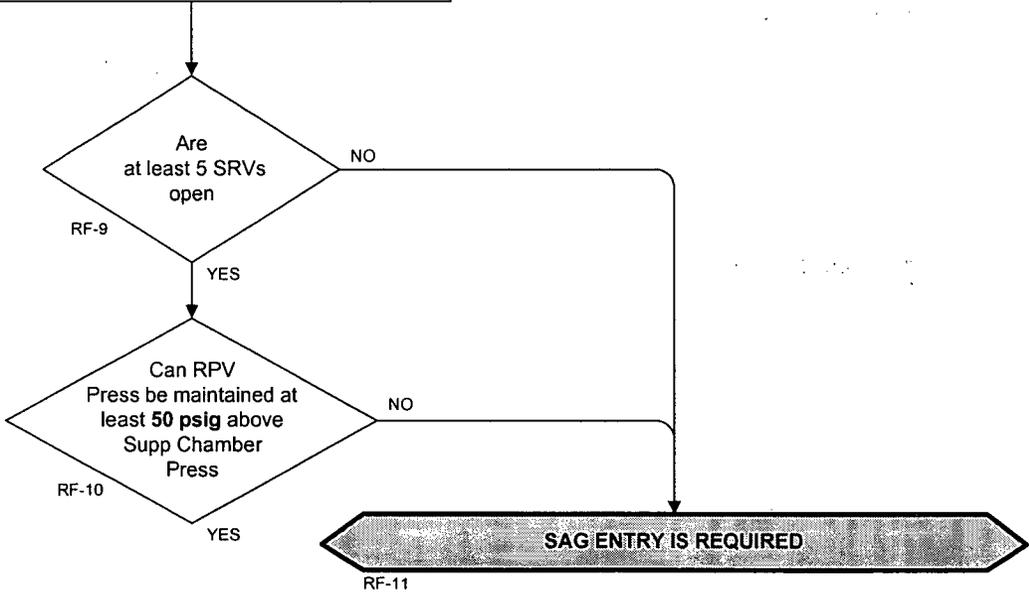


RPV FLOODING EOPs

206

<p>COMMENCE <u>AND</u> irrespective of pump NPSH limits; RAISE injection into the RPV with the following systems UNTIL: at least 5 SRVs are open</p> <p style="text-align: center;"><u>AND</u></p> <p>RPV press is not lowering</p> <p style="text-align: center;"><u>AND</u></p> <p>RPV press is at least 50 psig above Supp Chamber Press</p>
<ul style="list-style-type: none"> • CRD (BF) • Core Spray (BE) • LPCI (BC) INJECT through the HXs ASAP • RHR through SDC Return using OP-EO.ZZ-323 • Condensate (AD) • Condensate Transfer using OP-EO.ZZ-309 • SLC (Boron OR Test Tank) (BH) • Fire Water using OP-EO.ZZ-310

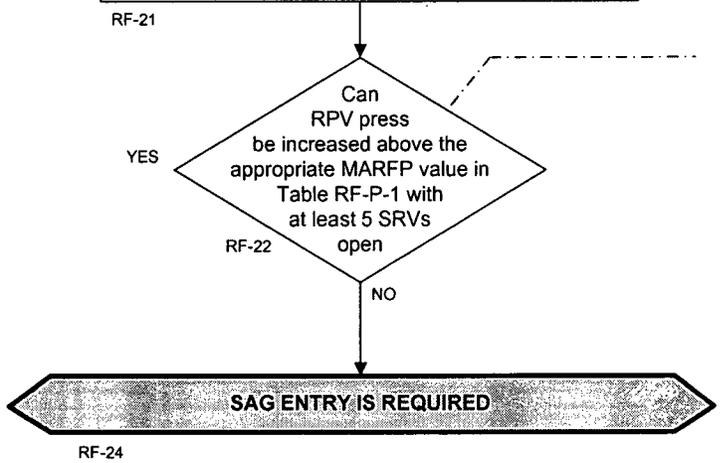
RF-8



206 - ATWS

<p>COMMENCE <u>AND</u> irrespective of NPSH limits; SLOWLY RAISE injection into the RPV with the following systems UNTIL at least 5 SRV are open</p> <p style="text-align: center;"><u>AND</u></p> <p>RPV press is above the appropriate value in Table RF-P-1</p>
<ul style="list-style-type: none"> • Core Spray (BE) • LPCI (BC) • Condensate Transfer using OP-EO.ZZ-309 • Fire Water using OP-EO.ZZ-310

RF-21



RF-24

SAMG – CONTAINMENT FLOOD

Can RPV water level be restored and maintained above -311 in. (BAF)?



- 3 Core debris is not expected to melt through RPV.
- Flood above TAF for long-term cooling.

RPV / CONTAINMENT INJECTION

✓ **PRIORITIES:**

1. Operate core spray
2. Restore and maintain RPV water level above -311 in. (BAF).
3. Maximize total RPV and primary containment injection from outside primary containment.

☐ **Methods:**

- HPCI
 - Use CST suction if possible
 - OK to defeat high suppression pool water level transfer.
- Core Spray
 - Keep one suction lined up to suppression pool if possible.
 - Use CST suction for other pump if possible.
- Group 1 and Group 2 systems (Detail C).



Can RPV injection be restored and maintained above Minimum Debris Retention Injection Rate (Fig F)?



- 4 Core debris is not expected to melt through RPV.
- Flood above TAF for long-term cooling.

RPV / CONTAINMENT INJECTION

✓ **PRIORITIES:**

1. Operate core spray
2. Restore and maintain RPV injection rate above Minimum Debris Retention Injection Rate (Fig F).
3. Maximize total RPV and primary containment injection from outside primary containment.

☐ **Methods:**

- HPCI
 - Use CST suction if possible
 - OK to defeat high suppression pool water level transfer.
- Core Spray
 - Keep one suction lined up to suppression pool if possible.
 - Use CST suction for other pump if possible.
- Group 1 and Group 2 systems (Detail C).



Inside Pressure Suppression Pressure (Fig G)?



- 5 Core debris may melt through RPV.
- Maintain pressure suppression capability.

RPV / CONTAINMENT INJECTION

✓ **PRIORITIES:**

1. Maintain suppression pool water level below 124 in
2. Have water on drywell floor
3. Restore RPV injection above Minimum Debris Retention Injection Rate (Fig F).
4. Inject into primary containment from external sources.

☐ **Methods:**

- Use Group 1 and Group 2 systems (Detail C).

