During the procurement document preparation and review cycle, technical or quality changes or revisions to the procurement documents are subject to the same review and approval requirements as the original documents. Procurement of spare and replacement parts will be subject to the controls of the OQAP. The procurement of spare and replacement parts which affect design bases, safety evaluation, regulatory conformance, functional design, structural integrity and testing requirements require technical and quality review and documented approval. 56 50 53 56

17.2.4.3 Selection of Procurement Sources

YNSD-QA has the assigned responsibility to generate and maintain an Approved Vendors List (AVL) which identifies those vendors able to meet NHY requirements for a given scope of supply. 53

a. A documented evaluation of the vendor provides objective evidence of the approval based on one or more of the following:

   (1) Historical data representative of current capability.

   (2) Status of the vendor's current quality program - review of the procedures, QA manual, audits, and associated activities.

   (3) Review of objective evidence which demonstrates adequacy of vendor's QA program.

b. The vendor holds a valid ASME Nuclear Certificate of Authorization. The vendor may be considered an Approved Vendor for the item/service covered by the certificate.

c. The vendor holds an NRC-LCVIP letter confirming QA Program implementation. The letter shall be identified in the AVL entry.

d. The vendor is approved by a utility with which YAEC or NHY has a reciprocal agreement or other recognized activity. 53 56

Evaluations are documented and provide objective evidence of the approval basis.

Nuclear Production and the NHY Purchasing Department maintain a current copy of the AVL for procurement source information. Seabrook Staff personnel may delete or request addition of vendors as experience dictates. The Nuclear Quality Manager maintains cognizance of the YNSD activities and is ultimately responsible for the evaluation and selection of procurement sources. Additionally, the NQG may perform evaluations of selected vendors as required. 53 56 53 56

17.2.4.4 Bid Evaluation and Award

Bid evaluations are performed by the requisitioning organization to assure that the bids received conform to the procurement document requirements.

Personnel, appropriately trained in the technical and quality disciplines are used as needed, to complete the evaluation, consisting of, as applicable: 53

a. Technical considerations.

b. Quality Assurance requirements.

c. Supplier capability and performance record.

d. Alternatives/exceptions to the procurement document requirements.

Any unacceptable conditions resulting from the bid evaluation are resolved or an appropriate commitment is obtained from the vendor prior to contract award.

17.2.4.5 Surveillance, Inspection and Audit

During the technical and quality reviews, the scope of vendor verification activities is determined. This determination is based on the complexity, safety significance, quantity of the item and supplier historical quality performance. This determination results in an assignment of activities for which source and site surveillance, inspection or audit is deemed necessary. The source surveillance, inspection and audit functions may be delegated to YNSD-QA upon written notification from the Nuclear Quality Manager. Receipt inspection activities are delegated to the Station Staff as described in Section 17.2.7.3. 53 53 56

17.2.4.6 Acceptance

Methods used to accept items are dependent on the scope of purchase and include one or more of the following:

a. Source verification

b. Receipt Inspection 56

c. Supplier Certificate of Conformance

d. Post Installation Test

17.2.5 Procedures, Instructions and Drawings 56

17.2.5.1 NHY

NHY controls and performs all activities, such as design, procurement and operation, through a series of procedures, instructions, drawings and other documents which define the methods for complying with the eighteen criteria of 10CFR50 Appendix B and Regulatory Guide 1.33. 53 56 56

The Vice President - Nuclear Production is responsible for the preparation of procedures which define the Nuclear Production organizational relationships in a manner that assures compliance to the quality requirements delineated in the OQAP. Designated Nuclear Production Managers are responsible for preparing procedures consistent with NHY quality philosophy, the OQAP, and their assigned work activities. 53 56

The Seabrook Station departments prepare and maintain procedures for administrative control and technical support and the safe and efficient operation of the Station. These procedures establish the system for off-site interfaces, conduct of operations and operating status. The procedures provide instructions for performing activities in areas of Station administration, operations, refueling, maintenance, and other specialized technical support functions. 53

The Training Center Manager prepares and maintains procedures necessary to provide instructions to administer and document the licensed training program and keep abreast of design changes which impact the use of the simulator.

The NHY Purchasing Department provides instructions for accomplishing routine activities within the department which define the interfaces with other NHY departments that initiate procurement or contract documents. 53 56

Procedures, instructions and drawings contain applicable quantitative and qualitative acceptance criteria, as warranted, to enable determination of satisfactory accomplishment of technical and quality requirements. 53 56

The quality review of procedures includes: 1) a determination of the need for inspection, 2) identification of inspection personnel, 3) identification of the inspection requirements, methods, and acceptance criteria, and 4) documentation of inspection results. 56

Procedures require the timely preparation of as-built drawings and related documentation which will accurately reflect the actual plant design. As-builts are made available to staff who need the information. The timeliness of the as-builts will be dependent upon the type of documents as established in accordance with approved procedures. If as-built drawings are not available, either interim or final design configuration documents will be available to Station staff and Nuclear Quality staff prior to relying on the affected item to perform its safety function. 53 53

17.2.5.2 YNSD

YNSD normally performs various support services for NHY such as auditing, vendor evaluation, licensing and engineering. Such activities are prescribed by documents appropriate to the circumstances and are internally reviewed to assure the inclusion of qualitative and quantitative requirements. The Nuclear Quality Group maintains cognizance of the YNSD procedural implementation through audit activity described in 17.2.1.2.b. 53 56 53 56

17.2.5.3 Contractors

Prior to performing work or inspection on safety related structures, systems or components, contractors (except those which work as an integral part of NHY) are required to develop and submit for approval procedures which define the scope and implementation of the task. The procedures reference applicable drawings, specifications, codes and standards, and include appropriate acceptance criteria. The contractors are required to perform all work in accordance with the approved documents which also form a basis for monitoring and control of the activities assigned.

17.2.6 Document Control

17.2.6.1 Scope

The NHY document control program applies to the issuance and control of documents which affect the quality of structures, systems and components. The controlled documents include, but are not limited to the following:

a. Operational Quality Assurance Program.

b. Procurement documents.

c. Drawings.

d. Specifications.

e. Administrative and operating procedures.

f. Nonconformance reports.

g. FSAR and Technical Specifications.

17.2.6.2 Issuance

The review, approval and subsequent issue of documents is prescribed in procedures. The review and approval cycle includes a review to assure technical adequacy and inclusion of appropriate quality requirements prior to implementation.

Documents are reviewed by SORC in accordance with Subsection 13.4.1.3.

Similar review and approval controls are implemented by organizations which perform work using documents that pertain to Seabrook Station.

17.2.6.3 Control

The Seabrook Station Document Control Center (DCC) maintains a system to identify and control the current revision of instructions, procedures, specifications, drawings and procurement documents. As new or revised documents are approved, DCC enters these into the system. The controlled distribution of new and revised documents is limited to those which are

required for standard activities. Other documents are issued on a request basis. This system assures that the most current revision of a document is available for use at the required locations. Where appropriate, procedures include requirements to verify the revision status of documents.

17.2.6.4 Changes

Procedures exist to ensure that changes to documents are reviewed and approved by the same organizations that performed the initial review and approval or by other qualified responsible organizations designated by NHY. In either case, the reviewing organizations have access to pertinent background information upon which to base their review, and have an adequate understanding of the requirements and intent of the original document. This includes design and procurement document changes identified in other sections of the OQAP. 59 53

Documents that are made obsolete or are superseded as a result of changes are removed from the controlled distribution when replaced by the new revision. For those documents which are not on controlled distribution, the required verification of revision status prior to each use results in purging outdated documents from the work areas. Audits of document control assure the proper implementation and control.

Station procedures are reviewed by an individual knowledgeable in the procedure every two years to determine if changes are necessary or desirable. Reviews are documented and are at least as rigorous as the initial procedure review.

17.2.7 Control of Purchased Material, Equipment and Services

17.2.7.1 Planning

NHY has the responsibility to implement appropriate measures to ensure that purchased material, equipment and services conform to procurement documents. Appropriate measures are described in 17.2.4 and may include source evaluation and selection, source inspection, surveillance or audit, or receipt inspection. During the review of procurement documents, personnel, following written procedures and guidelines, identify those characteristics and/or processes important to the quality of the item or service and specifies inspection, audit or surveillance activities commensurate with the procurement scope. 56 53 56 56

17.2.7.2 Source Activities

Inspection, surveillance and audit activities at the source are identified in accordance with the plan developed for procurement. These activities are normally performed by YNSD-QAD personnel. Qualified personnel perform the activities using written procedures/checklists and formally report to the Station Staff on their quality findings, including problem areas of the procurement. Personnel assigned these activities have the delegated authority to stop work if necessary. The Nuclear Quality Group maintains cognizance of the activities of YNSD to assure proper implementation of source activities. 53 56

17.2.7.3 Receipt Inspection

Receipt inspection is performed by qualified Seabrook Staff members using pre-planned written procedures/checklists which define those characteristics to be inspected. Personnel performing receipt inspection will be certified by the Nuclear Quality Manager to Regulatory Guide 1.58 (ANSI N45.2.6). These personnel verify that the items are undamaged, that they conform to procurement requirements when not verified by source surveillance, inspection or audit, and that the required documentation is available. Where sampling inspection is specified, the plan is based on nationally recognized standards. NQG personnel perform random surveillance and audits of receipt inspection activities.

17.2.7.4 Documentation

Documented evidence that the items meet procurement requirements, such as receipt inspection reports, physical and chemical test reports, and appropriate documentation or certification, must be available at the Station prior to placing the affected item into service which relies on it for a safety function. Written guidelines are used by the receipt inspection personnel to evaluate and accept the submitted documentation. Measures exist to periodically evaluate Certificates of Conformance/Compliance to assure validity.

17.2.7.5 Status

The status of procurement action is maintained through reports and inspections at the source and upon receipt. The documentation submitted by YNSD-QAD or the supplier, or that which was internally generated during the course of procurement and receipt, identifies the requirements that have and have not been met. For those items delivered which deviate from procurement requirements, a report describing the nonconforming item is prepared for tracking and disposition. Tagging and/or physical segregation where possible is used to identify the inspection status of individual items or orders prior to assignment to controlled storage facilities or use in the Station.

17.2.8 Identification and Control of Materials, Parts and Components

17.2.8.1 Identification

Procurement documents contain appropriate requirements for identification of materials, parts and components. Compliance to the specific procurement requirements is the responsibility of the supplier. Seabrook Station personnel ensure, if not already verified and documented during source verification activities, that identification of items meets the procurement requirements upon receipt. Station procedures covering the identification of items are prepared by the Station Staff and approved as noted in subsection 17.2.6.2. Identification by physical means is maintained where possible and through documentation when not physically practical. Materials, parts and components are traceable to appropriate documentation, such as procurement or inspection documents.

17.2.8.2 Control

Subsequent to the receipt functions at the Station, identification and control of items is maintained in accordance with technical and administrative procedures. At storeroom issue, an item is verified by the user for correct identification and acceptability. During the various phases of fabrication, installation, repair or modification of items, in-process surveillance may be performed by Station and contractor personnel to verify the continuity of identification. When an item is subdivided, traceability of the item, when required, is controlled by transcribing information to the subdivided pieces. The identification markings are placed on the item or on records traceable to the item. If required identification is missing, obliterated or hidden, the item is considered nonconforming and is tagged and, where practical, placed in a segregated area pending resolution. | 56

17.2.9 Control of Special Processes

17.2.9.1 Process Qualification

Special processes such as welding, heat treatment, nondestructive testing, chemical cleaning, plating, where the required level of quality cannot be, or is disadvantageous to be, measured by direct visual inspection, require qualification. The Seabrook Staff has the responsibility to qualify special processes, equipment, and personnel, as appropriate, in accordance with approved procedures to assure subsequent accomplishment under controlled conditions in accordance with applicable codes, standards and specifications. Process, equipment, and personnel qualification records are maintained and updated as required. For special processes not covered by existing codes or standards, the qualification criteria is defined and documented. The Nuclear Quality Group performs reviews and surveillances of special processes. | 56

Qualification includes allowable control parameters of the process variables, specified equipment and personnel proficiency which are documented in special process procedures and approved as noted in Subsection 17.2.6.2 and reviewed by the Nuclear Quality Group. Special process procedures contain the necessary prerequisites, personnel and equipment requirements, qualification data, limitations, acceptance criteria, results interpretation and records, as applicable. When special processes are to be performed by vendors/subcontractors on site, prior approval of their procedures by the Station Staff and review by the Nuclear Quality Group is required to assure conformance to applicable specifications codes and standards. Provision for approval is defined in the procurement documents. | 53 | 53 | 53

17.2.9.2 Personnel Qualification

NHY, YNSD and contractor personnel responsible for the performance of special processes are qualified in accordance with applicable codes, standards and specifications. Training and examinations are administered to determine the | 53

capability of each individual. Qualification records of on-site personnel associated with special processes are established, filed and kept current. The period of validity and criteria for requalification are in accordance with the applicable codes, specification and standards.

17.2.9.3 Process Performance

Special processes are accomplished using written process sheets, procedures, checklists, travelers or equivalent. These documents provide for recording of evidence to indicate acceptance in accordance with the process requirements. Acceptance of the results is performed by personnel qualified for acceptance of the special process. Records which verify that the required activities were accomplished in accordance with qualified procedures and by qualified personnel are maintained and filed. 56

17.2.10 Inspection

17.2.10.1 General

Inspections associated with normal operations of the plant, such as maintenance, surveillance, and tests, are performed by the Nuclear Quality Group unless delegated to another organization. Inspectors are trained and certified to meet the requirements of ANSI N45.2.6 by the Nuclear Quality Manager prior to performing inspections. Personnel performing nondestructive examination are certified to SNT-TC-1A. The responsibility of inspectors is defined in appropriate procedures. 56 53

17.2.10.2 Technical Specification Surveillance Tests 56 53

The Station Manager directs the preparation of Technical Specification Surveillance tests. The program requires that surveillance be performed to assure that the station equipment operates in accordance with documented procedures, Technical Specifications, FSAR and OQAP requirements. The original and subsequent revisions of the Technical Specification surveillance procedures require review by SORC and approval of the Station Manager. The Nuclear Quality Group performs surveillances of technical specification tests. 53 53 56

17.2.10.3 Maintenance and Modification Inspection

Maintenance, modification, repair or replacement activities are inspected in accordance with the original inspection requirements or engineering approved alternatives. Documents which provide instructions for performing the activities specify the inspection requirements and are reviewed by the Nuclear Quality Group. Inspection hold points are designated in the procedures or other documents when deemed necessary to inspect the quality of the item. 53 56

17.2.10.4 Receipt Inspection 56

The scope of this inspection activity is described in Subsection 17.2.7.3.

17.2.10.5 Inservice Inspection

Base line data from Preservice Inspection (PSI) is collected during Station construction. This data is used as comparative standards during periodic Inservice Inspections (ISI) as required by Technical Specifications, ASME Section XI "Rules for Inservice Inspection of Nuclear Power Plant Components" and Station procedures. The development of the overall program for inspection is assigned to YNSD, while implementation rests with the Seabrook Staff. Records of PSI/ISI activities are maintained and used for comparison with the results of subsequent inspections. 56 56 57 56

17.2.10.6 Contractor and Vendor Inspections

The Seabrook Staff assures that inspection requirements are included as necessary in procurement documents which apply to contractors on-site and to vendors at their facilities [including service agencies such as nondestructive examination (NDE) specialists].

17.2.10.7 Qualification of Personnel 56

The organization responsible for work at Seabrook Station normally performs the verification to assure their own quality. The personnel performing verification have the necessary qualifications and are independent of the supervisor directly responsible for performing the work being verified. Personnel requiring special training are trained and qualified in accordance with the applicable documents covering the function. The training is accomplished and documented in accordance with station procedures or approved suppliers procedures. Reevaluation of personnel is performed at periodic intervals. 56

The Nuclear Quality Manager is responsible for the review and acceptance of inspection procedures and for personnel qualification criteria for NQG personnel. 57 56

17.2.10.8 Inspection Documents

Inspection procedures, instructions and checklists used by personnel performing inspection functions include the following, as necessary: 56

a. Identification of characteristics to be inspected.

b. Description of the method of inspection.

c. Identification of individuals or groups responsible for performing the inspection.

d. Acceptance and rejection criteria.

e. Identification of inspection hold points.

f. Requirements for indirect control by monitoring process methods, equipment and personnel, if direct inspection is not possible. Both inspection and process monitoring shall be provided when inadequate without both.

g. Identification of the inspector or data recorder and the results of the inspection operation.

h. Specifying necessary measuring and test equipment, including accuracy requirements.

i. Identification of required procedures, drawings and specifications, including revision status.

Sampling techniques, if used, are based on recognized standards, and justification is provided for sample size and selection process.

17.2.10.9 Results/Records

Inspection results are documented and traceable to the item inspected. The responsible individual, or a group qualified in the inspection technique, evaluates the acceptability of the results. Inspection records are annotated with any deviations encountered and, if necessary, subsequent corrective action.

17.2.11 Test Control

17.2.11.1 Types of Tests

The Station Manager is responsible for the conduct of testing pertinent to the operation of Seabrook, such as:

Start-up Tests:

Precriticality tests, criticality tests, low power tests and power ascension tests performed after initial fuel loading and after each refueling.

NOTE: During the preoperational phase, the Joint Test Group (JTG) supervises, reviews and approves procedures and practices of the preoperational testing activities. A member of the Seabrook Staff serves as a permanent member of the JTG. An alternate is appointed for each permanent member. The JTG exists until the completion and approval of all preoperational testing.

Technical Specification Surveillance Tests:

Periodic tests performed on Station systems and components to verify system and/or equipment operability requirements.

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Modification Tests:

Tests performed on structures, systems and components by the Seabrook Staff or contractors after modification to assure compliance to operating requirements, codes and standards prior to returning the system to service.

17.2.11.2 Test Procedures

Start-up, Technical Specification surveillance, and modifications test procedures are reviewed by SORC and approved by the Station Manager (see Note in Subsection 17.2.11.1). In the case of contractor involvement, test procedures are submitted for approval as required by procurement documents. Any proposed test or experiment which involves an unreviewed safety question, as defined in 10CFR50.59, is reviewed by SORC and NSARC. 53

Test procedures contain or provide the following, as required:

a. Prerequisites such as environmental conditions, and test instrumentation requirements and accuracy. 56

b. Provision for assuring that test prerequisites have been met.

c. Instructions for performing the test.

d. Incorporation or reference to appropriate requirements and acceptance limits contained in the applicable design and procurement documents.

e. Acceptance or rejection criteria.

f. Inspection hold points, where applicable. 56 53

g. Methods of documenting or recording test data and results.

17.2.11.3 Conduct of Tests/Results

Tests are performed by suitably trained, qualified or licensed personnel according to the written procedures. Test abnormalities discovered during testing are resolved before structures, systems or components are required to perform an intended safety function. Results of testing are documented and evaluated for acceptability by qualified personnel to assure that test requirements have been satisfactorily completed. Documented test results are retained for record. 53

17.2.12 Control of Measuring and Test Equipment

17.2.12.1 Measuring and Test Equipment Lists

Lists of measuring and test equipment required for Station testing, operations, maintenance and modification are prepared by the Seabrook Staff. 56

Each list identifies the type of measuring and test equipment, corresponding identification numbers, and other information pertinent to control and calibration activities. Normal commercial items such as rulers, tapes and levels are excluded from the lists. The list approval, revision, addition or deletion requirements are procedurally controlled. The procedures are reviewed by the Nuclear Quality Group and regular surveillance and audits of the calibration program are conducted to assure the effectiveness of the program. 5%

17.2.12.2 Identification

Each item on the measuring and test equipment lists is assigned a unique designation to assure positive control. The designation is permanently affixed to the item in a manner to afford proper identification without interfering with the item's function. Tags, labels and records traceable to the item, or other identifying means, document the calibration status of each item. A schedule is maintained which provides positive recall when recalibration is required and indicates the current status of all items.

17.2.12.3 Calibration

Calibration is based on the manufacturer's recommended interval, however, the required accuracy, purpose, degree of usage, stability characteristics and other conditions affecting measurement may modify the frequency. Calibration activities are also initiated when the accuracy of an item is suspect.

Procedures identify the recommended calibration interval, calibration techniques, required tools and standards, methods to document and evaluate the results and required record maintenance. Primary standards have an accuracy of at least four times the required accuracy of the end use equipment being calibrated. Less accurate standards may be acceptable when the use of such standards and the basis of calibration acceptance is authorized and documented. 5%

17.2.12.4 Standards

Standards used for calibration purposes within the program are traceable to nationally recognized standards such as the National Bureau of Standards (NBS). Where national standards do not exist, the standard used for calibration is justified and documented. Primary calibrating standards have greater accuracy than the secondary standards being calibrated, unless authorized and documented for specific use. 5%

17.2.12.5 Control

Measuring and test equipment, including instruments, tools, gages, fixtures, reference and secondary standards and non-destructive test equipment, that is used in the measurement, inspection, testing and monitoring of structures, 5%

systems and components is traceable to that activity. To control and document the use of measuring and test equipment, the issue records or inspection/test documents contain appropriate information to identify the unique measuring and test equipment, calibration status, dates used, and specify the activity for which the item was used.

Through this technique, the validity of inspection or tests that utilized defective measuring and test equipment can be determined and documented. Reinspection or retest may be performed depending upon disposition of the defective item. All records of calibration and control activities are maintained as required. | 53 | 53

17.2.13 Handling, Storage and Shipping

17.2.13.1 Procurement Provisions

Requirements for special handling and storage, including cleaning, preservation, packaging and shipment of materials, spare parts and equipment are conditions of procurement documents, as applicable. Shipping requirements concerning the shipment method, container cleanliness, pressurization, dessication, labelling and others, are specified and reviewed during the procurement process. When requested, the supplier prepares written procedures which specify handling, shipping and storage processes, and submits them to the Seabrook Staff and the Nuclear Quality Group for review and approval. | 53

Source inspection by YNSD-QAD or NHY-NQG personnel may be employed to assure proper implementation of supplier activities. | 56

17.2.13.2 Receipt and Storage

Upon delivery of items to the Station, receiving activities commence. The receiving actions are documented by procedure, and require receipt inspection of the special provisions incorporated by suppliers to control cleanliness, labelling, marking, shipping characteristics, or other appropriate characteristics identified in the procurement process. The receipt inspection is documented and the item is assigned a storage location. Locations are established with regard to environmental conditions and limitations, cleanliness, physical restrictions, handling requirements, manufacturers recommendations, and other pertinent data applicable to the item. | 56

Items which require preventive maintenance, special protective environments, special coverings or other particular activities to maintain and preserve the item in storage, are controlled and inspected through documented procedures. Procedures for the storage and control of consumable materials, such as chemicals, reagents, lubricants and film, are provided to assure proper identification and use with regard for special environmental conditions and shelf-life considerations.

The Nuclear Quality Group conducts audits and surveillances of receipt inspection and storage activities. | 53 | 56

17.2.13.3 Handling

Detailed handling procedures and instructions are prepared for items that require special handling due to factors such as weight, size, susceptibility to shock and other conditions which warrant special controls. Station procedures require the use of special handling procedures and instructions when required. Special handling equipment and tools are maintained, inspected and documented, at intervals consistent with their application to assure their availability for use.

17.2.13.4 Packaging and Shipping

Packaging and shipping activities originating on-site are controlled by administrative procedures. Packaging requirements are divided into classification levels dependent upon the sensitivity of the item, transportation mode, item destination and other factors which may affect the integrity and function of the item. Items returned to a supplier are returned in the original container, when possible, or repackaged to equivalent standards. Shipping requirements which are consistent with the required mode of protection are specified. For special nuclear material and sources, shipping is performed in accordance with the NRC and DOT regulations. 53

17.2.13.5 Personnel

Personnel responsible for any phase of receiving, storage, handling, packaging or shipment of items are suitably trained to assure proper implementation of the specified activities and controls. 56

17.2.14 Inspection, Test and Operating Status

17.2.14.1 Status Indicators

The operating status of structures, systems and components during station operation, maintenance, testing and modification is indicated by devices such as tags, stamps or markings. These devices are identified, described and controlled through administrative procedures. Inoperative or malfunctioning items are also documented and highlighted through the use of various devices to prevent inadvertent use. The responsibility for application and removal of tags, stamps and other status indicators is defined to assure positive control and to preclude inadvertant operation.

The test and inspection status of items is indicated by devices such as documentation, tags, stamps, or markings.

Nonconforming items are also documented and highlighted through the use of various devices to prevent inadvertent use.

17.2.14.2 Sequence of Operations

Tests, inspections and operations are controlled by documented procedures. Any alteration of the intent of a planned sequence is subject to the same review and approval controls as applied to the original. The authority and responsibility of personnel and methods to re-sequence actions are procedurally stated. Tests, inspections or other operations which are bypassed are properly documented and the effect of bypassing is evaluated and approved by the organization responsible for specifying the test, inspection, or operation. 53

17.2.15 Nonconforming Materials, Parts or Components

17.2.15.1 Identification and Control

Materials, parts or components, which are deficient in characteristic, documentation or procedure which render the quality unacceptable or indeterminate are identified as nonconformances. The Supervisor of a technical area or activity that is within the scope of the OQAP is responsible for documenting the nonconformance in accordance with established procedures, and assuring proper control to prevent inadvertent use or installation. Controls may include marking, tagging or physical segregation. Affected organizations are notified of the nonconformance and subsequent actions taken through distribution of a report describing the nonconforming item. 53

17.2.15.2 Disposition and Resolution

The Station Manager is responsible for assignment of technically qualified personnel to evaluate the extent and impact of the nonconformance to determine a disposition for the item; (i.e., repair, rework, scrap or use-as-is) and to take appropriate action, when necessary, to prevent recurrence. For nonconformances involving repair or use-as-is dispositions, procedures specify the organization responsible for the performance of an engineering review function. All dispositions are documented and signed by responsible parties. 53

Acceptability of rework or repair of material parts and components is verified by qualified personnel reinspecting or retesting the item as originally specified or by alternate means approved for the application.

The Station Manager is responsible to administer the nonconformance reporting system. The Nuclear Quality Group reviews and concurs in each report of a nonconforming item to verify that the deficiency was properly and correctly stated, that the disposition and corrective action are acceptable, and to assess the effectiveness of the steps to prevent recurrence. 53

17.2.15.3 Trend Analysis

The Nuclear Quality Manager maintains a system to recognize, evaluate, document, and assess quality trends. The system provides for periodic analysis of reports on nonconforming items, inspection, surveillance and audit reports, and the submittal of significant results to the Vice President - Nuclear Production for review and appropriate action. 53 56 53

17.2.16 Corrective Action

17.2.16.1 Initiation

Corrective action is that action taken to identify, correct and preclude recurrence of conditions adverse to the quality of activities or equipment. Nuclear Production programs identify those conditions for which corrective action may be warranted including:

a. Failure of a structure, system or component that is within the scope of the OQAP. 53

b. Defect of an item or service that could, if uncorrected, lead to failure or malfunction.

c. Operation outside of specified limits.

d. Repetitive minor problems which may be symptomatic of a larger problem.

e. Reportable occurrences as defined by the Technical Specification.

f. Loss or apparent loss of special nuclear material (SNM).

g. Significant conditions identified by the NRC, SORC, NSARC or audit program. 56

Corrective action is normally documented through appropriate procedures. In the case of significant conditions adverse to safety, the corrective action includes an evaluation of the cause of the condition, the recommended action to prevent or reduce the probability of recurrence, and verification of completion of corrective action. A special report may be prepared when a significant condition adverse to safety is identified. This report identifies root causes and documents action taken to preclude recurrence.

17.2.16.2 Assessment

Procedures require that corrective action associated with nonconformance reports, and other special corrective action reports are reviewed for adequacy and timeliness. The Nuclear Quality Manager periodically reports to the Vice President - Nuclear Production on the effectiveness of the corrective action 56 53

process and status of incomplete items. Corrective action reporting is included in the trend analysis program.

17.2.17 Quality Assurance Records

17.2.17.1 Identification

The Nuclear Quality Manager and other cognizant managers have the joint responsibility for determining and identifying quality assurance records that are to be retained and their retention period. Examples of the types of records retained include procurement documents, procedures, NDE results; inspection, audit and test results; material analyses; equipment, process and personnel qualifications; calibration records, nonconformances and corrective action results and station operating records. Inspection and test records, where applicable, identify the inspector or data recorder, type of observation, results, acceptability of the results, date, and action taken in connection with any deficiencies noted. The compilation of records generated is forwarded to the Document Control Center for inclusion into the Station records management system. The system is compatible with the design and construction phase records system. 53 56 56 53

17.2.17.2 Receipt, Storage and Retrieval

Station procedures identify the responsibility of personnel and actions required to control the receipt, storage and retrieval of quality assurance records. A suitable storage facility, designed to prevent loss or deterioration of quality assurance records, is permanently located on-site. Records, whether original or copies, are indexed, filed and maintained to aid in the retrieval process.

17.2.17.3 Supplier Records

Principal suppliers, their sub-tier suppliers and other suppliers are required to identify quality assurance records generated throughout the life of the contract in accordance with the appropriate provisions of the NHY procurement documents. The suppliers are required to maintain a record system and, upon completion of the contract, either continue maintaining the records or forward them to NHY for incorporation into the NHY records management system. Internal procedures identify the receipt, inspection and transmittal activities and responsibilities associated with supplier records. 53 53

17.2.18 Audits

17.2.18.1 Planning

The Nuclear Quality Manager is responsible for development and management of an audit program pertaining to activities associated with operation and operational support at Seabrook Station. Formal reports are distributed by the Nuclear Quality Manager to other management positions as required by 53

established procedures. A plan, which identifies the audits to be performed and their frequency, is approved by the Nuclear Quality Manager. The audit plan is based on the status and safety significance of activities being performed and ensures that an audit of all functions is completed within a two-year period. Audits of certain activities such as staff training and qualification, and conformance to technical specifications have specific minimum frequencies. These are identified and included in the plan which is updated semiannually. Additional audits may be scheduled when conditions warrant, i.e., extensive reorganization, quality becomes suspect, or supplier implementation of the QA program is suspect. 56 56

17.2.18.2 Performance

Audits, based on the pre-established schedule, are performed by trained and qualified personnel using appropriate procedures, instructions and checklists. The procedures, instructions and checklists provide a basis for performance of audits including pre-audit and post-audit conferences and the mechanics of the audit process. The mechanics of the process include an objective evaluation of practices, procedures, instructions; activities and items; and review of documents and records to determine the extent that the quality assurance program is effective and is properly implemented. Auditors do not have direct responsibility in the area being audited. Their qualifications, as a minimum, are based on prior pertinent experience, specialized training and education in accordance with applicable procedures. The audits conducted onsite are performed under the direction of the NQ Audit and Evaluation Supervisor. In addition the NSARC may request audits, which may be performed by the Nuclear Quality Group or YAEC, or contracted to outside professionals. 56 54

The OQAP will receive independent audits under the direction of the NSARC. The audits will be conducted in accordance with the technical specifications and may involve contracting outside professionals. 56

17.2.18.3 Reporting and Follow-Up

An audit report is generated at the completion of each audit and submitted to the audited manager of the functional area, the Nuclear Quality Manager and to other appropriate management personnel. NSARC also receives a copy or summary report for their review and assessment of the audit program. Follow-up is required by both the audited and auditing organizations when deficiencies are identified. The audited organization is responsible to review and investigate the nature and cause of the deficiency and to provide appropriate corrective action. The Nuclear Quality Manager is responsible for evaluation of proposed or completed corrective action and confirmation of satisfactory accomplishment. 56 54

17.2.18.4 Audit Program Review

An independent audit of the QA program effectiveness and appropriateness is initiated bi-annually by NSARC in accordance with Technical Specifications. 56

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clarifications taken to other Sections which are referenced therein, if shipments are from NHY to another nuclear facility. Alternatively, since NHY will not normally be a "shipper", NHY might be subject to the requirements of this Section for shipments from Seabrook to another nuclear facility. Seabrook, when involved in such shipments, will comply with the requirements imposed by the receiving plant in their procurement document covering the shipment.

h. With regard to Section 5.2.1 of ANSI N45.2.2 - 1972 titled Shipping Damage Inspection: Warehouse personnel will normally visually scrutinize incoming shipments for damage of the types listed in this Section; this activity may not be performed prior to unloading. The person performing an inspection function as defined under Regulatory Guide 1.74; therefore, while he will be trained to perform this function, he may not be certified (N45.2.6) as an Inspector. 54

i. With regard to Section 5.2.2 - Item Inspection: In lieu of the requirement that "The inspections shall be performed in an area equivalent to the level of storage requirements for the item", NHY shall perform receipt inspections in a manner and in an environment which does not endanger the requisite quality of the item. Receipt inspection area environmental controls, however, may be less stringent than storage environmental controls for that item. This determination shall be documented and approved by the Engineering Services Department. Quality Assurance will review procedures to assure proper controls are incorporated. When inspections are performed in receipt inspection areas with environmental controls less stringent than storage area environmental controls, a time limit shall be established on a case basis for retention of items in the receipt inspection area. Retention time shall be such that deterioration is prevented and applicable manufacturer recommendations are addressed. 56 56 56

This approach is justified since receipt inspection activities are for a much shorter duration and therefore should not be subjected to the same stringent requirements as required for storage.

j. With regard to Section 5.2.3 - Special Inspection: NHY takes exception to the requirement that "Special Inspection" procedures shall be attached to the item. The "Special Inspection" procedure shall be readily available to inspection personnel and may be attached to the item or containers. The procedure being used will be traceable to the item or lot.

k. With regard to Section 6.1.2 (1) of ANSI N45.2.2 - 1972: Temperature and humidity controls required for the storage of Level A items are not considered applicable for nuclear fuel assemblies unless recommended otherwise by the nuclear fuel manufacturer. NHY will abide by the manufacturer's recommendation. See remarks under Section 3.2.1 above.

l. With regard to Section 6.2.1 of ANSI N45.2.2 - 1972 titled Access to Storage Areas: Items which fall within the Level D classification of the Standard will be stored in an area which may be posted to limit access, but other positive controls such as fencing or guards will not normally be provided. 54

m. With regard to Section 6.2.4 of ANSI N45.2.2 - 1972 titled Storage of Food and Associated Items: The sentence is clarified to read; "The use or storage of food, drinks, and salt tablet dispensers in any storage area shall be controlled and shall be limited to designated areas where such use or storage is not deleterious to stored items."

n. With regard to Section 6.4.2 of ANSI N45.2.2 - 1972 titled Care of Items: The following alternatives are provided for indicated subsections:

(5) "Space heaters enclosed in electrical items shall be energized unless a documented engineering evaluation determines that such space heaters are not required."

(6) "Large (over 50 h.p.) rotating electrical equipment shall be given insulation resistance tests on a scheduled basis unless a documented engineering evaluation determines that such tests are not required."

(7) "Prior to being placed in storage, rotating equipment weighing over approximately 50 pounds shall be evaluated by engineering personnel with due regard for the manufacturer's recommendation, to determine if shaft rotation in storage is required; the results of the evaluation shall be documented. If rotation is required, it shall be performed at specified intervals, be documented, and be conducted so that parts receive a coating of lubrication where applicable, and so that the shaft does not come to rest in the same position occupied prior to rotation. For long shafts or heavy equipment subject to undesireable bowing, shaft orientation after rotation shall be specified and obtained."

o. With regard to section 6.5 of ANSI N45.2-1972 titled Removal of Items from Storage: NHY will comply with this section except for those items installed and used without additional storage in a temporary holding area.

p. With regard to Section A3.4.1 of the Appendix ANSI N45.2.2 1972 titled Contact Preservatives: During printing of the standard a transposition occurred between the last sentence of A3.4.1 (4) and A3.4.1 (5). The correct requirements are:

c. With regard to Section 3.2.2 of ANSI N45.2.13 - 1976 titled Technical Requirements: The first sentence is revised to read: "Technical Requirements shall be specified in the procurement documents and/or, where appropriate, by reference to or inclusion of the specific drawings, specifications, codes, regulations, procedures or instructions including revisions thereto that describe the items or services to be furnished."

Regulatory Guide 1.144 (Rev. 1, 9/80) — Auditing or Quality Assurance Programs for Nuclear Power Plants

Endorses ANSI N45.2.12 - 1977

During the Operations phase, the Operational Quality Assurance Program includes and complies with this guide with the following clarification:

a. With regard to Section 3.3 of ANSI N45.2.12 - 1977 titled Essential Elements of the Audit System: NHY will comply with subsection 3.3.5 revised to read: "Provisions for reporting on the effectiveness of the quality assurance program to the responsible management." Other than audit reports, NHY may not directly report the effectiveness of the quality assurance Programs to the audited organization when such organizations are outside of NHY.

b. With regard to Section 3.5 of ANSI N45.2.12 - 1977 titled Scheduling: Subsection 3.5.3.1 is interpreted to mean that NHY may procedurally control qualification of contractor's or vendor's quality assurance program, prior to awarding a contract or purchase order, by means other than audit.

c. With regard to Section 4.3.1 of ANSI N45.2.12 - 1977 titled Pre-Audit Conference: NHY will comply with the requirements of this Section by inserting the word "Normally" at the beginning of the first sentence. This clarification is required because, in the case of certain unannounced audits or audits of a particular operational or work activity, a preaudit conference might interfere with the spontaneity of the operation or activity being audited. In other cases, persons who should be present at a pre-audit conference may not always be available; such lack of availability should not be an impediment to beginning an audit. Even in the above examples, which are not intended to be all inclusive, the material set forth in Section 4.3.1 will be covered (if considered necessary or desireable) during the course of the audit. 54

d. With regard to Section 4.4 of ANSI N45.2.12 - 1977 titled Reporting: NHY will comply with Subsection 4.4.3 clarified to read: "Supervisory level personnel with whom major interactions

or significant discussions were held during the course of pre-audit (where conducted), audit, and post-audit (where conducted) activities."

Regulatory Guide 1.146 (Rev. 9, 8/80) — Qualification of Quality Assurance Program Audit Personnel for Nuclear Power Plants

Endorses ANSI N45.2.23 - 1978

During the Operations phase, the Operational Quality Assurance Program includes and complies with this guide with the following clarification:

a. With regard to Section 3.2 of ANSI N45.2.23 - 1978 titled Maintenance of Proficiency: NHY will comply with the requirements of this Section by defining "annual assessment" as one which takes place every 12+3 months and which used the initial date of certification (not the calendar year) as the starting date for determining when such annual assessments are due. | 53

b. With regard to Section 4.1 of ANSI N45.2.23 - 1978 titled Organizational Responsibility: NHY will comply with this Section with the substitution of the following sentence in place of the last sentence in the Section: "The Nuclear Quality Manager, Audit and Evaluation Supervisor, or Lead Auditor shall, prior to commencing the audit, assign personnel who collectively have experience or training commensurate with the scope, complexity, or special nature of the activities to be audited." | 53 | 56

c. With regard to Section 5.3 of ANSI N45.2.23 - 1978 titled Updating of Lead Auditor's Records: NHY will substitute the following sentence for this Section: "Records for each Lead Auditor shall be maintained and updated during the period of the annual management assessment as defined in Section 3.2 (as clarified). | 53

FIGURE 17B-1
MANUALS VERSUS OQAP CRITERIA

QUALITY ASSURANCE CRITERIA IMPLEMENTED BY MANUALS	MANUAL																		
	NPDC	NPM	NPQA	NPRE	NPRM	SSFP	SSMA	SSMM	SSGT	SSPM	SSRP	SSTC	NQMM	NSMM	OPMM	TCMM	TSMM	ASMM	AMM
ORGANIZATION	X	X	X					X					X	X	X	X	X	X	X
QUALITY ASSURANCE PROGRAM			X			X			X				X			X			
DESIGN CONTROL	X		X													X			
PROCUREMENT DOCUMENT CONTROL	X		X	X	X					X									
INSTRUCTIONS, PROCEDURES AND DRAWINGS	X	X	X		X	X	X	X		X	X				X				
DOCUMENT CONTROL	X	X	X	X	X	X	X	X		X					X				
CONTROL OF PURCHASED MATERIAL, EQUIPMENT, AND SERVICES			X							X									
IDENTIFICATION AND CONTROL OF MATERIALS, PARTS, AND COMPONENTS			X							X									
CONTROL OF SPECIAL PROCESSES	X		X				X												
INSPECTION			X			X	X			X	X	X	X		X				
TEST CONTROL	X		X			X	X					X			X				
CONTROL OF MEASURING AND TEST EQUIPMENT			X				X					X							
HANDLING, STORAGE, AND SHIPPING			X							X									
INSPECTION, TEST, AND OPERATING STATUS			X			X	X					X	X		X				
NONCONFORMING MATERIALS, PARTS, OR COMPONENTS			X	X						X									
CORRECTIVE ACTION			X	X						X									
QUALITY ASSURANCE RECORDS	X	X	X	X	X	X	X	X	X	X	X	X	X						
AUDITS			X			X							X						

NOTE - A Key for the Manuals' abbreviations is contained on the next page.

FIGURE 17B-1
MANUALS VERSUS OQAP CRITERIA
(Continued)

MANUALS APPLICABILITY ABBREVIATIONS KEY

NPDC	Nuclear Production Design Control Program Manual
NPMM	Nuclear Production Management Manual
NPQA	Nuclear Production Operational Quality Assurance Program Manual
NPRE	Nuclear Production Reporting Program Manual
NPRM	Nuclear Production Records Management Program Manual
NPER	Nuclear Production Emergency Response Program Manual
SSFP	Seabrook Station Fire Protection Program Manual
SSMA	Seabrook Station Maintenance Program Manual
SSMM	Seabrook Station Management Manual
SSGT	Seabrook Station General and Speciality Training Program Manual
SSOP	Seabrook Station Scheduling and Planning Program Manual
SSPM	Seabrook Station Procurement and Materials Program Manual
SSRP	Seabrook Station Radiation Protection Program Manual
SSSP	Seabrook Station Security Program Manual
SSTC	Seabrook Station Test Control Program Manual
NQMM	Nuclear Quality Management Manual
NSMM	Nuclear Services Management Manual
OPMM	Operations Management Manual
TCMM	Training Center Management Manual
TSMM	Technical Services Management Manual
MAMM	Maintenance Management Manual

The spurious operation of valve protecting high-low pressure interfaces is discussed in Section 3.3.

3.2.2.3 Common Enclosures

The deleterious effects of fire on associated circuits in common enclosures is eliminated by the following three design considerations:

a. Coordinated circuit breakers, fuses or similar devices will assure that the associated circuit failure does not prevent the redundant train from performing its safe shutdown function.

b. The cables are qualified to IEEE Standard 383; hence, the propagation of the fire from one train to the redundant train in another fire area/zone is very unlikely.

c. Train and channel separation for cable routing is assured by a computerized cable routing program which does not allow cables with different circuit code assignments to be routed in the same raceways.

Based on the above design considerations, associated circuits in common enclosures are not considered associated circuits of concern.

RAI 410.54

The applicant should commit to develop and implement alternate shutdown procedures. These procedures should address manpower requirements and manual actions to accomplish shutdown. A summary of these procedures should be provided for our review.

RESPONSE:

The plant shall develop and implement alternate shutdown procedures which will delineate all functions required to accomplish a safe shutdown from control stations outside of the main control room. These shutdown functions shall assure that performance goals delineated in Appendix R, paragraph III.L.2 are satisfied:

a. Reactivity Control
b. Reactor Coolant Makeup
c. Decay Heat Removal

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d. Process Monitoring
e. Support Functions

The procedures shall specify manual actions and address manpower requirements. These procedures will be available three months prior to plant startup.

RAI 410.55

The applicant's submittal does not indicate whether repairs are required to achieve safe shutdown. It is our position that systems and components used to achieve and maintain hot standby conditions must be free of fire damage and capable to maintain such conditions for the duration of the hot standby condition without repairs. Systems and components used to achieve and maintain cold shutdown should be either free of fire damage or the fire damage to such systems should be limited such that repairs can be made and cold shutdown achieved within 72 hours. Repair procedures for cold shutdown systems must be developed and material for repair maintained on-site. It is our position that electrical or pneumatic jumpers are not a suitable method of repair for cold shutdown.

RESPONSE:

The systems and equipment selected for safe shutdown, including cold shutdown, are such that at least one train of equipment is free of fire damage and, hence, no repairs are required.

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RAI 410.56

As a result of recently identified ACRS concerns, provide a response to the following request for information regarding the handling of heavy loads:

a. Describe the means provided to assure the integrity of lifting eyes, concrete structures, and any other heavy loads so that they will not fall apart while being handled during refueling should the lifting eye fail or the load impact other structures.

b. Alternatively, describe the consequences of failure of concrete structures or other heavy loads during handling. This evaluation should confirm that unacceptable fuel damage or damage to safety-related equipment will not occur.

RESPONSE:

1. The report entitled, "NUREG-0612; Control of Heavy Loads," submitted with Reference (d), provides an evaluation of heavy load attachment points for the:

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a. Reactor Vessel Head and Uppper Internals
b. RC Pump Motor Lifting Lugs
c. Neutron Shield Panel
d. Reactor Cavity Seal Ring
e. Reactor Missile Shield
f. Stud Tensioner
g. Equipment Hatch Cover

This information can be found behind Tab 6 of the subject report.

2. The following structures and associated lifting eyes were evaluated with regard to the integrity of the eye and structure while being handled during refueling:

Item	Factor of Safety*
Containment Building	
a. Reactor coolant pump removable concrete plug El. 25'-0"	6.5
b. Plug for incore detector drive	8.0
c. Pressurizer enclosure wall (two removable sections)	6.7
d. CVCS heat exchanger concrete floor plug (two sections)	≥10
Emergency Feedwater Pump Building	
e. Removable concrete floor plug	≥10

RAI 410.57

A recent plant inspection of another facility revealed that for a fire in the Control Room, isolation transfer switches for certain hot shutdown systems/components had to be switched to the alternate or isolated position prior to damage occurring to these circuits. If this were not accomplished in time, fuses would have to be replaced in order to make the Safe Shutdown System/component operable. This situation existed because the transfer switches did not place new/redundant fuses into the control power circuit,

*Factor of safety is ultimate capacity versus dead weight plus 15% impact factor.

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but left the existing (assumed blown) set of fuses in the circuit. For most of the transfer switches, the situation did not cause a problem since the desired effect after isolation was the de-energization of power. In other instances where the system/component has to be operable or where operation might be required to override a spurious actuation (such as a motor-operated valve), replacement of fuses would be required if blown.

Although the present isolation switches at Seabrook do isolate the required equipment or component from the Control Room, it has not been demonstrated that it is unnecessary to replace fuses in order to place the equipment/component in the desired mode of operation or position. In order for us to conduct a review to determine if fuse replacement is necessary for the operation of a safety system after a Control Room fire, please provide the following:

1. The results of your review of electrical design drawings for the existing isolation transfer switches to determine where and if this situation exists.

2. If the Seabrook design necessitates the changing of fuses to achieve and maintain hot shutdown after a Control Room fire, provide modifications to existing switches and/or install new isolation switches where necessary to provide redundant fusing such that a blown fuse will not require replacement to achieve and maintain hot shutdown.

RESPONSE:

We have performed a review of electrical design drawings which are applicable to system and components required for hot shutdown after a Control Room fire and determined that the concern expressed in the subject RAI with fuse replacement and redundant fusing is applicable to certain of our circuits. Therefore, to achieve and maintain hot shutdown after a Control Room fire, one train of equipment/component control circuits for the following systems will be modified as shown on attached (typical) sketches. This modification will provide redundant fuses to assure the control power availability in case the existing set of fuses are blown due to damage occurring to the Control Room circuits prior to isolation from alternate shutdown locations:

1. Emergency Feedwater
2. Main Steam Isolation
3. RCS Pressure Control (PORV and Heaters)
4. Charging System (Make-up Portion)
5. Service Water
6. Primary Component Cooling Water
7. HVAC System (Containment Enclosure Air Handling, Emergency FW Pumphouse Air Handling, PAB Air Handling, SW Pumphouse Air Handling)
8. Electrical Power Supply

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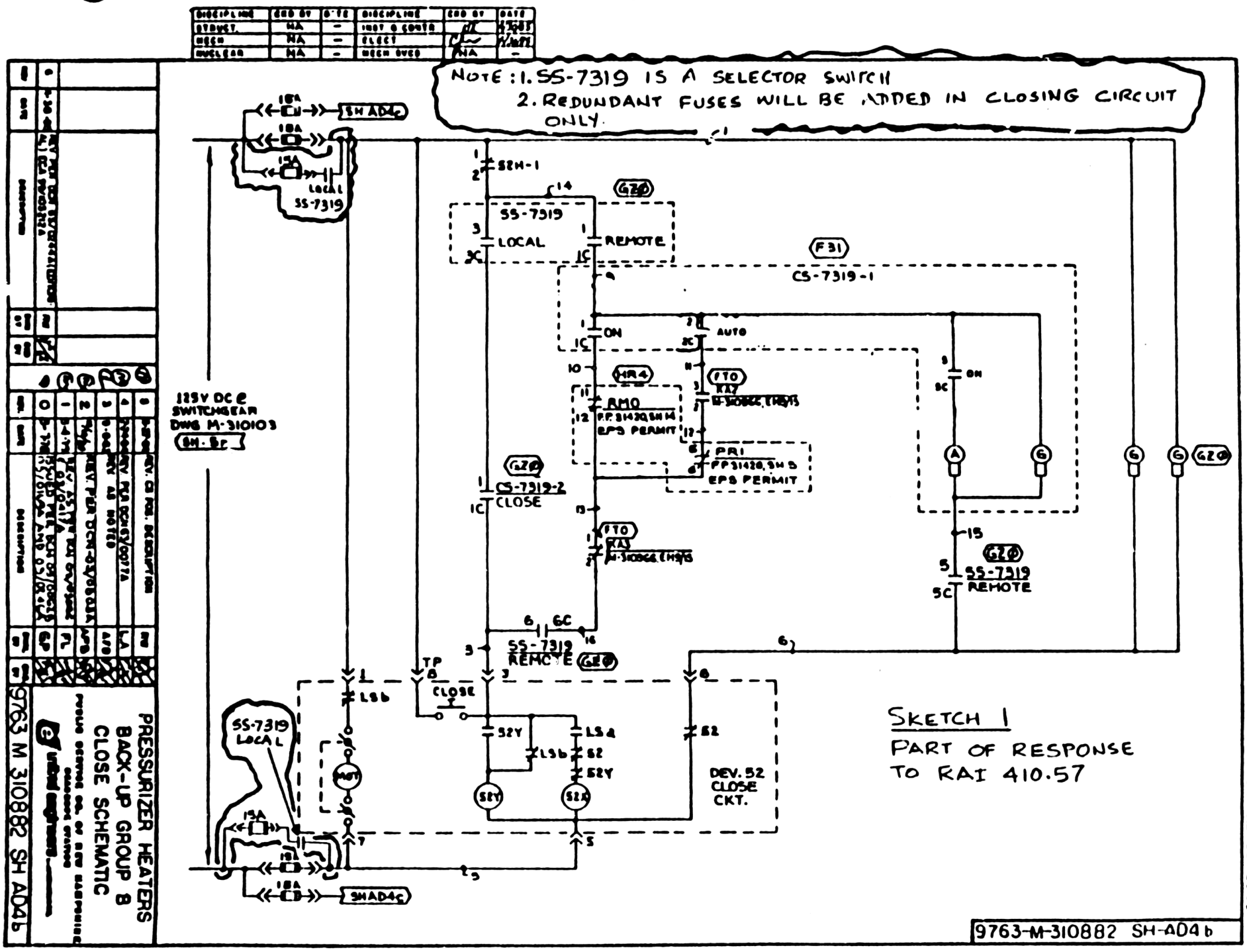
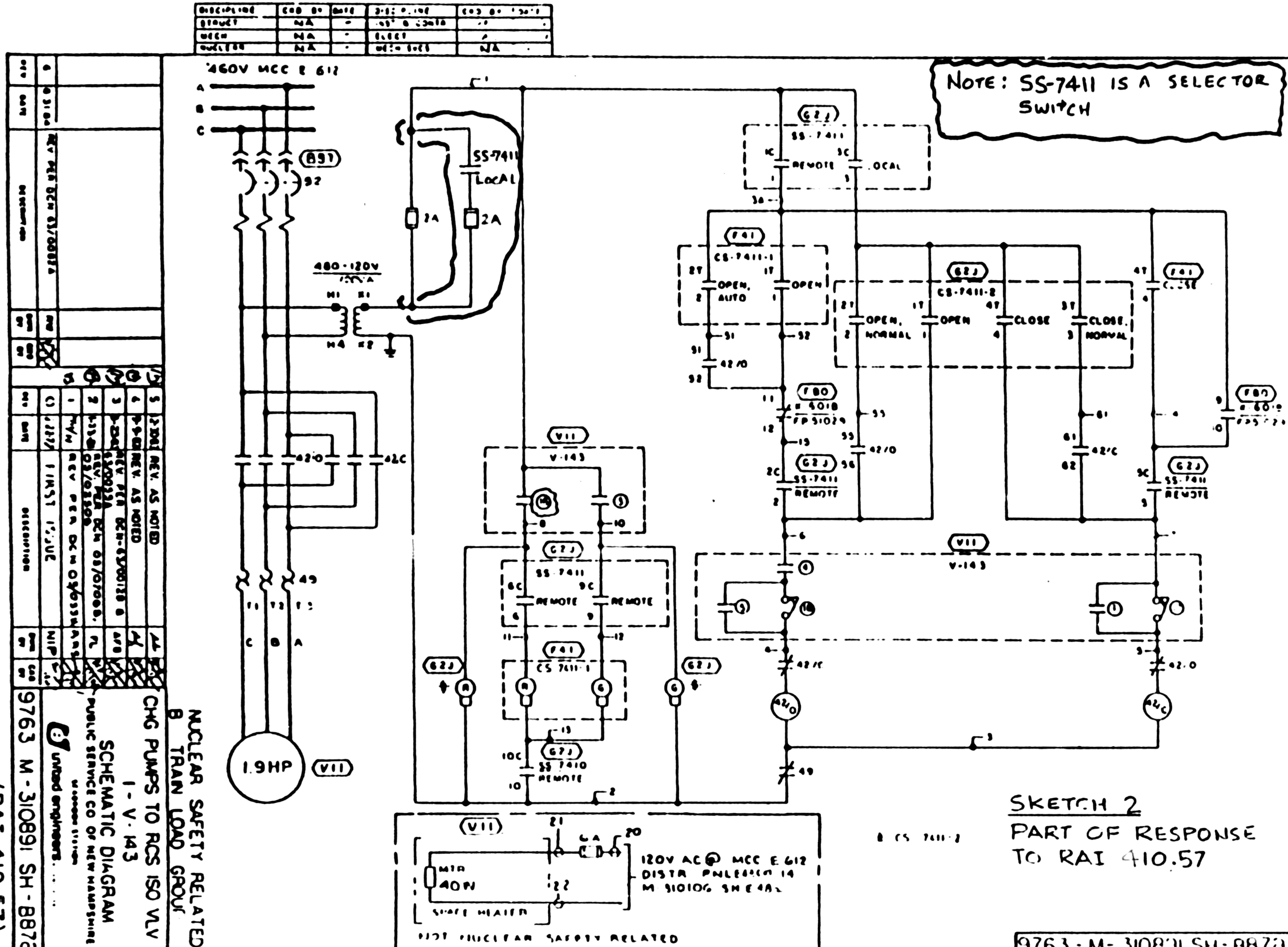

NOTE: 1. SS-7319 IS A SELECTOR SWITCH
2. REDUNDANT FUSES WILL BE ADDED IN CLOSING CIRCUIT ONLY.
SH AD4c
SS-7319 LOCAL
SS-7319 LOCAL
REMOTE
CS-7319-1
ON
AUTO
CS-7319-2 CLOSE
SS-7319 REMOTE
125V DC @ SWITCHGEAR DWG M-310103
TP
CLOSE
LSb
LSa
52Y
52
DEV. 52 CLOSE CKT.
SHAD4c
SKETCH 1
PART OF RESPONSE TO RAI 410.57
PRESSURIZER HEATERS
BACK-UP GROUP B
CLOSE SCHEMATIC
9763 M 310882 SH AD4b
(RAI 410.57)
9763-M-310882 SH-AD4b
Amendment 56
November 1985


NOTE: SS-7411 IS A SELECTOR SWITCH
460V MCC E 612
480-120V
SS-7411 LOCAL
1.9HP
SKETCH 2
PART OF RESPONSE TO RAI 410.57
NOT NUCLEAR SAFETY RELATED
NUCLEAR SAFETY RELATED B TRAIN LOAD GROUP
CHG PUMPS TO RCS ISO VLV 1-V-143
SCHEMATIC DIAGRAM
PUBLIC SERVICE CO OF NEW HAMPSHIRE
United Engineers
9763-M-310891 SH-B87a
(RAI 410.57)

RAI 410.58

We have a concern regarding the potential for multi-high impedance faults in ac power circuits which could result in the loss of power to safe shutdown equipment. Figure 1 contains a sketch of circuit designs which could result in the loss of needed power to safe shutdown equipment. As can be seen in Figure 1, redundant divisions of safe shutdown cables are properly separated in accordance with Appendix R criteria. However, a fire in Fire Area A would result in loss of Division A safe shutdown equipment and cause damage to nonsafe shutdown cables associated with the Division B bus. Further, the individual fault current resulting from the fire damage in the nonsafe shutdown cables may not be enough to trip the individual breakers (B_1 and B_2), but the sum of the faults may be sufficient to trip the main breaker, B_3. If this were to occur, the Division B bus and the corresponding redundant Division B safe shutdown would be lost. You must show that multi-high impedance faults in ac power circuits resulting from a single fire cannot result in the loss of function of any safety-related systems as outlined above.

RESPONSE:

Although a high impedance fault might occur in a cable subjected to fire damage, current industry codes for fault current calculation preclude the possibility of supply breaker trip for any one such fault occurring in a branch circuit. Postulating multiple high impedance faults simultaneously in branch circuits goes beyond the bounds of conservative electrical distribution design. In such a scenario each branch circuit cable (carrying a different load current) would have to fail along its length in such a manner as to result in a unique insulation that will produce a leakage current to ground (or conductor to conductor), which added to the conductor load would result in a current just below the protective device rating. Thus, an improbable combination of temporary leakage currents in different cables would have to occur at once to produce a high impedance of sufficient magnitude to be of concern. In our view, an analysis of such an event would be neither beneficial nor necessary.

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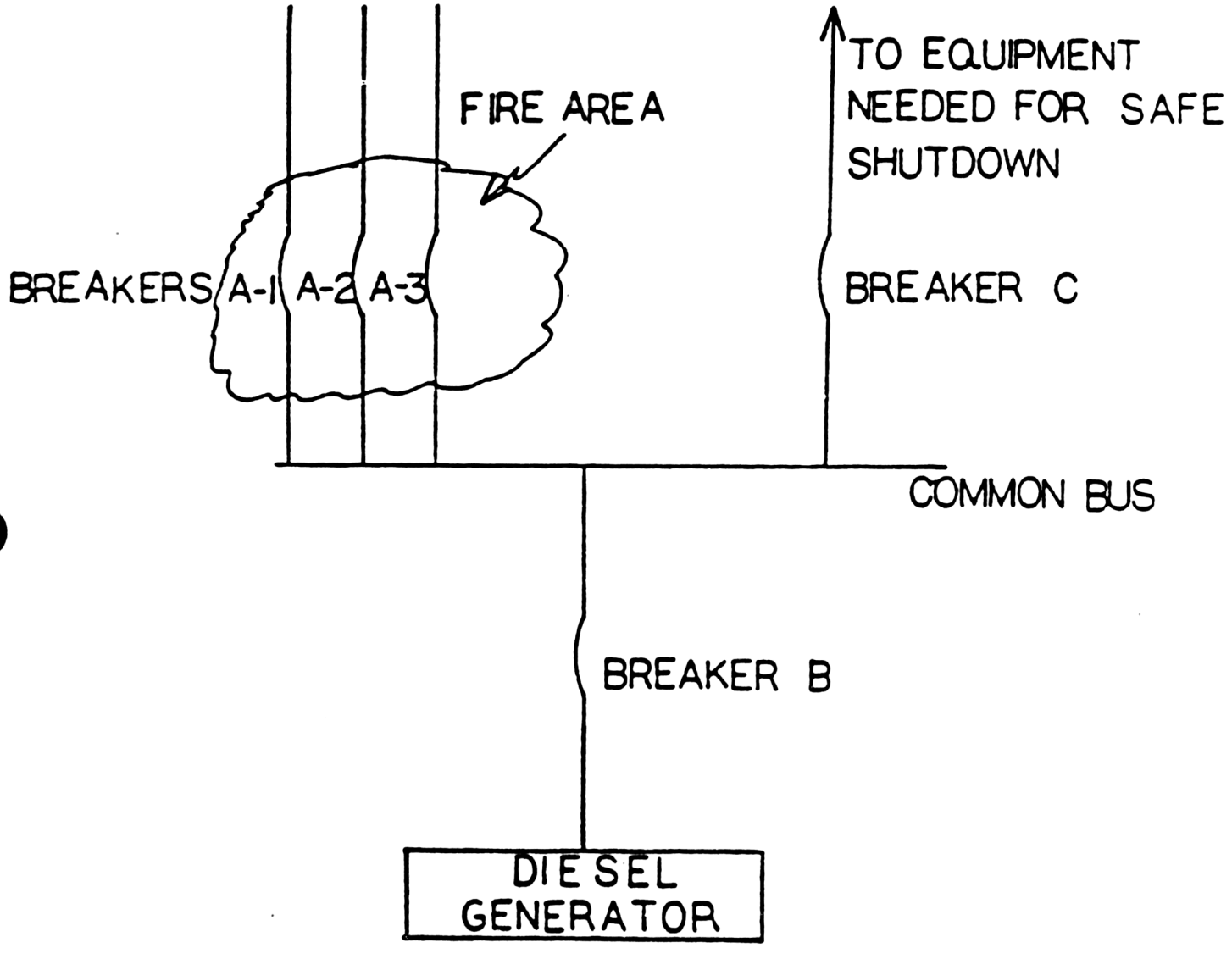

FIGURE 1: MULTIPLE HIGH IMPEDENCE FAULTS

(RAI 410.58)

SEABROOK STATION
RADIOLOGICAL EMERGENCY PLAN
FINAL SAFETY ANALYSIS REPORT

PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE

SEABROOK, NEW HAMPSHIRE

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The Nuclear Services Division also maintains an Environmental Laboratory in Westboro, Massachusetts which will provide 24-hour service in the event of an emergency at Seabrook Station. This Lab provides capability for emergency environmental sample and personnel dosimetry analysis.

6.1.5 Corporate Support Center

The Corporate Support Center is an area established within the EOF. This center will act as a focal point for the coordination and acquisition of company resources and liaison with the Seabrook Station Joint Owners, American Nuclear Insurers and INPO.

6.1.6 Media Center

This center is located at the Newington Town Hall, Newington, New Hampshire. The center will be activated in order to provide a centralized location for holding joint state, federal and Seabrook Station emergency news briefings. A New Hampshire Yankee Public Information representative will coordinate activities at this center. Communications with the EOF will be provided in order to establish periodic updates on emergency proceedings. 56

This center will accommodate the media by providing: 56

1) An assembly or conference room with a public address system; 55

2) Adequate communications;

3) Duplicating machines and/or telecopier; and

4) Station background literature and copies of emergency plan arrangements.

It is expected that state and federal public information personnel will operate from the Media Center.

6.1.7 Federal Radiological Monitoring and Assessment Center

The Federal Radiological Monitoring and Assessment Center (FRMAC) will be established by the US Department of Energy (DOE) at a suitable facility in the proximity to the EOF (most likely Pease Air Force Base) in response to a request from either state or federal authorities. The DOE and Environmental Protection Agency (EPA) are prepared to deploy specialized resources and establish a base of operations for off-site radiological monitoring and assessment activities. Environmental data obtained by an array of technical experts operating out of this center will be used by governmental officials in determining the hazard associated with the incident and the appropriate protective actions. DOE is responsible for the coordination of FRMAC emergency activities as described in the Federal Radiological Emergency Response Plan (FRERP). 55

6.2 Assessment Capability

The activation of this plan and the continual assessment of accident conditions require extensive monitoring and assessment capabilities. The essential monitoring systems needed to allow recognition of abnormal events by the station operators will be used in the techniques developed for accident classification. This section briefly describes these monitoring systems as well as other assessment capabilities.

6.2.1 Process Monitors

Station process monitor capability includes many process monitor indications provided from various sensors located throughout the station systems. Parameters monitored include pressure, temperature, flow, level and equipment operating status. These monitoring systems address the requirements of Regulatory Guide 1.97 (Revision 2).

6.2.2 Radiation Data Management System (RDMS)

The RDMS provides the operators with the ability to assess station radiological conditions during normal operations, as well as radiological emergency conditions. The RDMS is a microprocessor-based acquisition and display system. Field mounted detectors communicate individually to their own microprocessor which in turn communicates to two central processing units (CPU) on a redundant communication loop. The various parameters monitored include general area radiation, process radioactivity levels, airborne contamination levels, and effluent radioactivity levels. The quantity and diversity of the parameters monitored, along with the display capabilities of the RDMS, provide the operator with sufficient warning of accident conditions as well as continual accident assessments. However, the primary means of quantitatively evaluating system and plant radioactivity levels will be through a program of collecting physical samples and subjecting these physical samples to laboratory analysis to identify specific isotopes and their relation to the RDMS.

Each of the RDMS monitors alarms in the Control Room and Operational Support Center for a variety of alarm conditions (i.e., high level, alert, power failure, etc.). This system addresses the requirements of Regulatory Guide 1.97 (Rev. 2).

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6.2.3 Geophysical Phenomena Monitors

6.2.3.1 Meteorological

Seabrook Station maintains a 210 foot high meteorological tower located near the south edge of Brown's River, as shown in Figure 6.1. Meteorological inputs originate from the primary sensors located on the meteorological tower. The parameters monitored include vertical temperature differences

between 43 and 150 feet and between 43 and 209 feet (ΔT), wind velocity and direction. The meteorological data from the tower will be scanned and recorded as 15-minute averages by the Seabrook Station process computer. Strip chart recorders will continue to serve as a backup source of data as well as NSD in Framingham, MA which has access to Weather Services International (WSI).

A dispersion model is available on a minicomputer to produce initial transport and diffusion estimates for the plume exposure Emergency Planning Zone. The model uses meteorological data supplied from the monitoring system to produce plume dimensions and position, location and magnitude of the peak relative concentration, and relative concentrations at several downwind locations. Using effluent release information and a finite cloud external gamma dose model, estimates of near real-time dose rates and accumulative sector average doses will also be available. The model has the graphics capability of drawing relative concentrations and dose isopleths over a background map of the site. More information on these calculation techniques is given in Section 10.1.1 of this plan.

48 56 49 46 55

6.2.3.2 Seismic

Seabrook Station has installed seismic monitoring equipment with alarms indicated in the Control Room. The equipment consists of:

1) Triaxial Time History Accelerographs capable of measuring and permanently recording the absolute acceleration versus time for both horizontal and vertical motion;

2) Triaxial Response Spectrum Recorders capable of permanently recording peak responses as a function of frequency for both horizontal and vertical motions; and

3) Triaxial Peak Accelerographs capable of permanently recording peak acceleration.

The Control Room Video Alarm System will indicate the following:

1) Earthquake in progress;

2) Operating Basis Earthquake exceeded; and/or

3) When a Triaxial Time History Accelerograph is initiated.

6.2.3.3 Hydrologic

Seismic Category I structures that house safety-related equipment have been designed to withstand a depth of still water on the station grade (+20.6 ft. MSL) of 0.6 feet. Access openings in exterior walls that are below the design

7.0 COMMUNICATIONS

Seabrook Station has established an emergency communications network for notifying and coordinating activities with offsite and onsite emergency response organizations which includes 24 hour per day manning of communications links. A summary of the communication network is presented below and described in procedure ER-2.2, "Notification of Off-Site Authorities." 56

7.1 Nuclear Alert System

The Nuclear Alert System, originating in the Control Room, is a microwave and leased telephone line system used to notify the State Police of New Hampshire and Massachusetts (see Figure 7.1) of any event which has been classified as an emergency in accordance with the emergency classification system. In addition to the equipment installed in the Control Room and State Police Headquarters, the equipment has been installed in the two states' Emergency Operation Centers (EOC's), the MA forward EOC in Tewksbury, the NH Rockingham County warning point in Brentwood, the Emergency Operations Facility (EOF), and the Engineering Support Center at the Nuclear Services Division. The system can serve as a back-up communication system for coordination between the locations as shown on Figure 7.2. Back-up to this system is the regular telephone system. Additional back-up to the State Police notification is provided via Station Security net. 55 49

The a-c power source for the Nuclear Alert System is backed up by the system's own d-c batteries for continued operation for a minimum period of eight hours in case of loss of all a-c power.

This system is manned on a 24 hr. basis on both ends - the station and the state police dispatching points. The system is tested monthly between the states and the station.

7.2 Station Radio System

7.2.1 VHF System

This system is utilized as a primary means for off-site paging of personnel for initial manning of the station emergency facilities and for two-way communications with the radiological survey teams. 55

Remote control consoles exist at the station Control Room, the Technical Support Center and the Emergency Operations Facility. These locations will control on-site and off-site VHF radio base stations in a single frequency simplex transmission mode of operation.

7.2.2 UHF Operating and Maintenance System

This system is utilized for two-way communications by station Operations and Maintenance department personnel.

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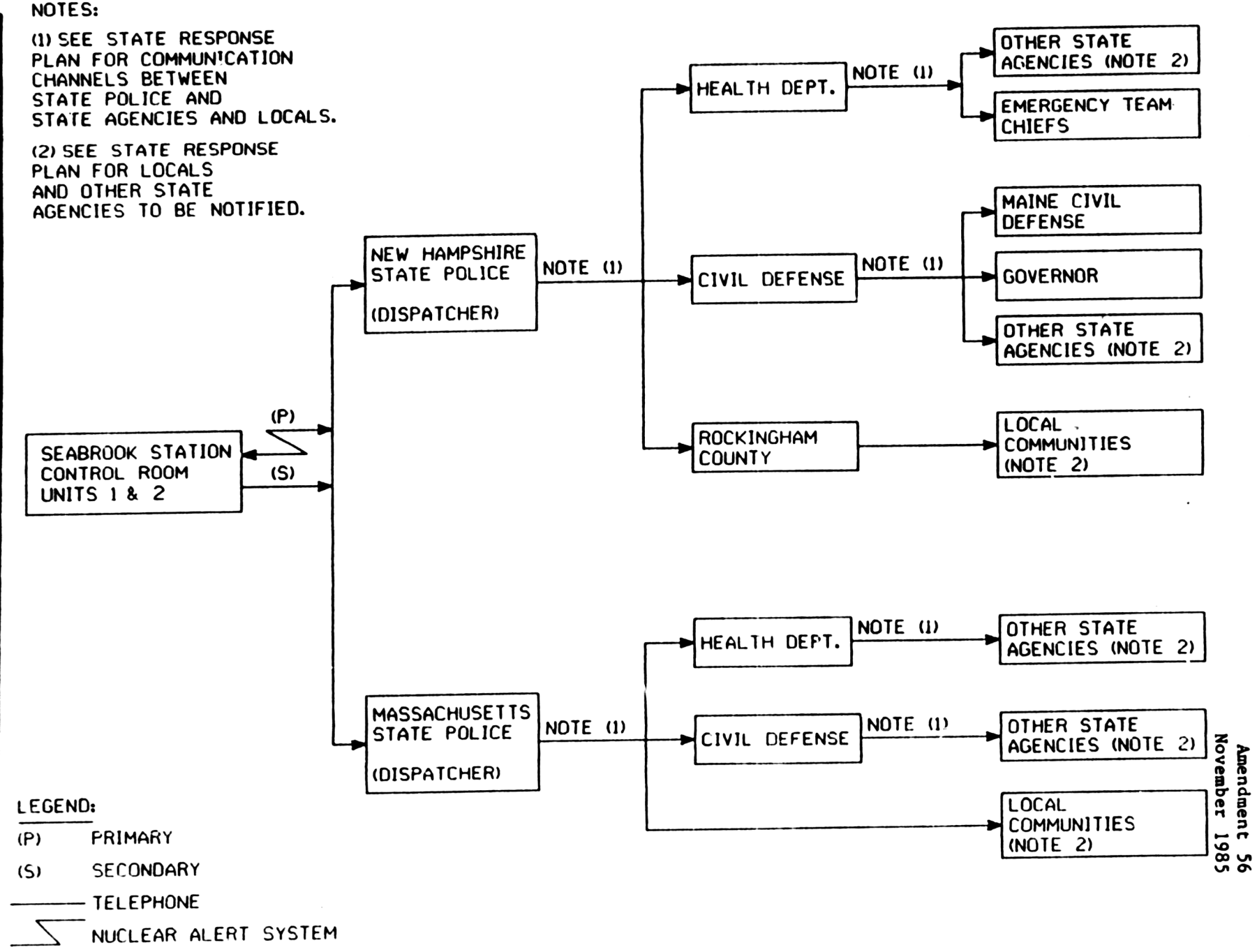
EMERGENCY NOTIFICATION

FIGURE 7.1



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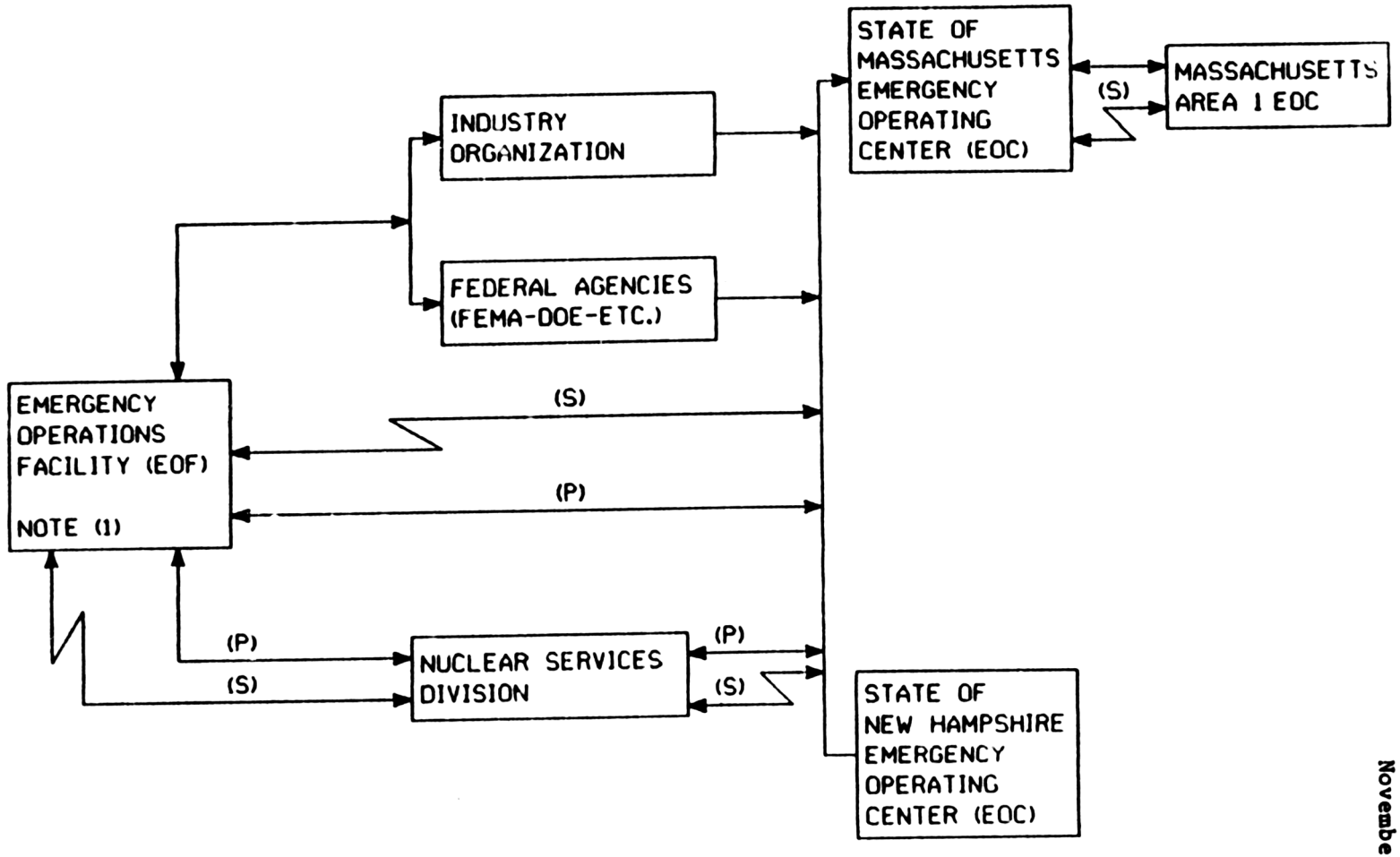
COORDINATION CHANNELS WITH STATES

FIGURE 7.2

NOTE:

(1) SEE STATE RESPONSE PLANS FOR COMMUNICATION CHANNELS BETWEEN STATE EOC'S AND FORWARDEOC'S.



LEGEND:

(P) PRIMARY

(S) SECONDARY

——— TELEPHONE

NUCLEAR ALERT SYSTEM

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8.0 ORGANIZATION

8.1 Introduction

An emergency response organization (ERO) has been established to respond to radiological emergencies at Seabrook Station. This organization includes on-shift personnel, additional station personnel, corporate personnel, Yankee Nuclear Services Division (NSD) personnel, local services support, and private organization support.

The structure of the emergency response organization may vary depending on the time of day and the severity of the incident (emergency classification). In the initial phases of an accident an On Shift Emergency Response Organization consisting of personnel from the normal station organization will be responsible for event classification and completion of primary emergency actions (See Figure 8.1). In the following phases of emergency response, the Augmented Emergency Response Organization for either the Unusual Event (See Figure 8.2) or Alert, Site Area Emergency, and General Emergency (See Figure 8.3) will be activated with the capability of continuous (24 hour per day) operations for a protracted period. Figure 8.15 provides a comparison of NUREG-0654 emergency response staffing requirements with the Seabrook Station on shift emergency response organization. 56

8.2 Normal Station Organization

The normal station organization will vary depending on the time of day. During backshifts and weekends the operations crew consists of: one Shift Superintendent, one Unit Shift Supervisor, two Control Room Operators and two Auxiliary Operators. During the day shift (7:00 a.m. - 4:30 p.m.) additional administrative and management personnel are present on-site. During any shift, the normal station organization will support the On-Shift Emergency Response Organization.

8.3 Emergency Response Organization

The structure for the emergency response organization which would be activated to respond to an incident at Seabrook Station is provided in Figures 8.1 through 8.11. Appendix A describes the positions listed on these figures along with activation level, response location, and responsibilities. Appendix A also correlates the station title and alternate to the emergency title for each position.

8.3.1 On-Shift Emergency Response Organization

The Unit Shift Supervisor has the responsibility to recognize potential emergency conditions and notify the Shift Superintendent. The Shift Superintendent has the authority and responsibility to classify the observed conditions in accordance with the emergency classification system. The classification of an emergency initiates the activation of the station augmented emergency response organization.

8.8.2 Federal Government Support

All the resources of the federal agencies appropriate to the emergency condition would be made available in accordance with the Federal Radiological Emergency Response Plan. This plan and the resources behind it are activated through the station notification of the NRC. Many resources would be available, as deemed necessary by the emergency condition, including a major effort under the leadership of the Department of Energy applied to the area of off-site radiological impact assessment. This effort could involve manpower and equipment for extensive plume measurement, including aerial monitoring and tracking, and sampling and analysis of ingestion pathway media. The Site Emergency Director and/or Response Manager have the authority and responsibility to request federal assistance.

8.8.3 Private Organization Support

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Depending upon the emergency conditions and the response needs, the Seabrook Station emergency response organization can be augmented by manpower and equipment support from the remainder of the Yankee-related organization. This includes, in addition to the support resources of the NSD Engineering Organization described in Section 8.6, response assistance from other Yankee plants (Yankee Rowe, Vermont Yankee and Maine Yankee). All of this Yankee-related support capability is known as the Yankee Mutual Assistance Plan, a copy of which is included in Appendix B.

Should response support beyond this level be required, additional support from other nuclear industry organizations can be requested through the Institute of Nuclear Power Operations. The Response Manager and/or the Site Emergency Director will be responsible for the decision to request industry response through INPO. All industry organizations reporting to the station will be required to report to the appropriate station emergency management who will specify the authorities, responsibilities and limits on the actions of these organizations. All response organizations will be required to adhere to all the existing station procedures while completing their activities.

8.9 Coordination with State Government Authorities

Because of the location of Seabrook Station, the planning and/or action responsibilities at the state level involves two states, New Hampshire and Massachusetts.

Both New Hampshire and Massachusetts, as well as the localities within the plume EPZ, have prepared plans for a response to an emergency at Seabrook Station. In addition, the State of Maine, which lies within the ingestion EPZ has the capability to carry out appropriate response actions. These plans describe their respective responsibilities, authorities, capabilities, and emergency functions.

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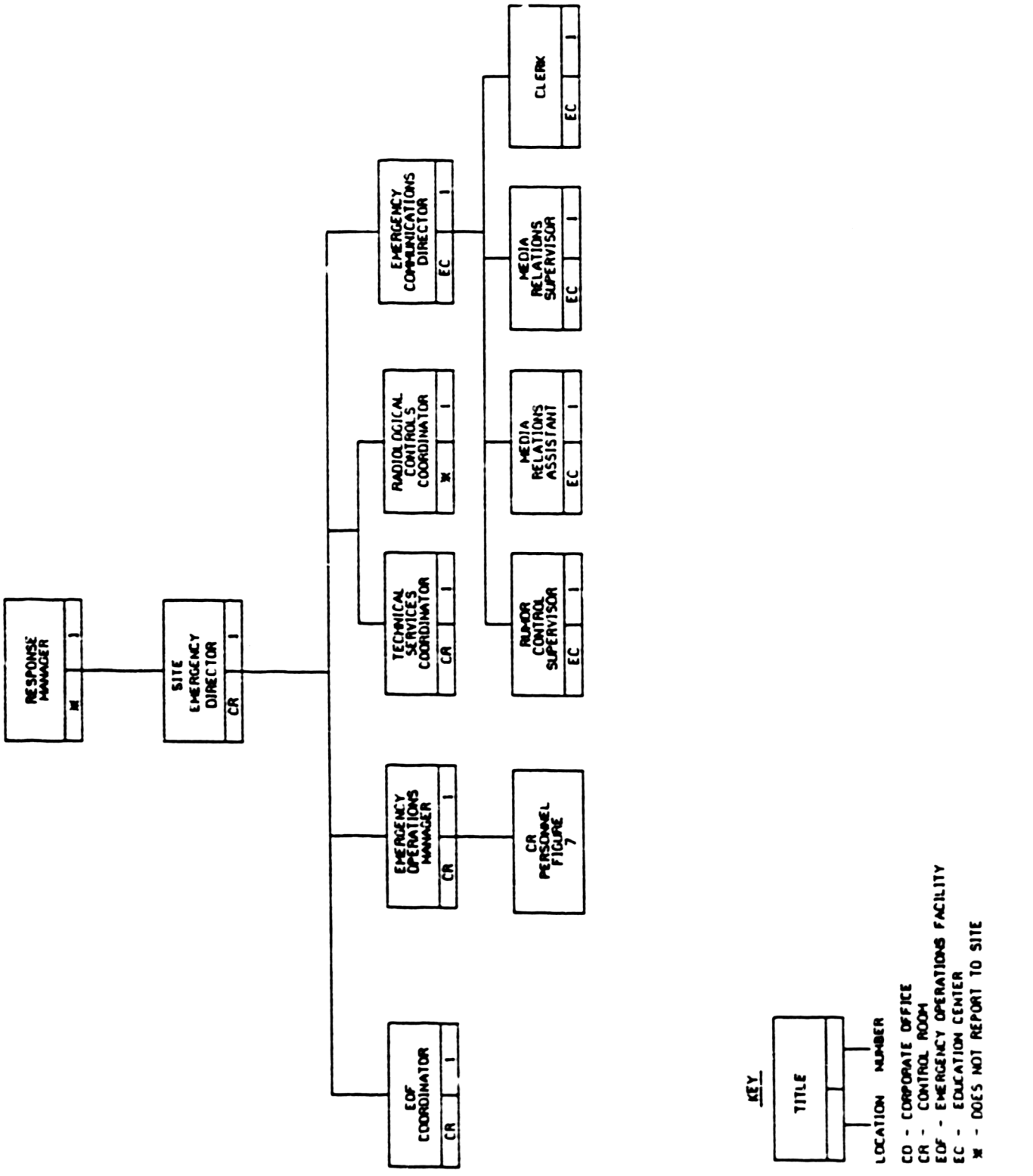

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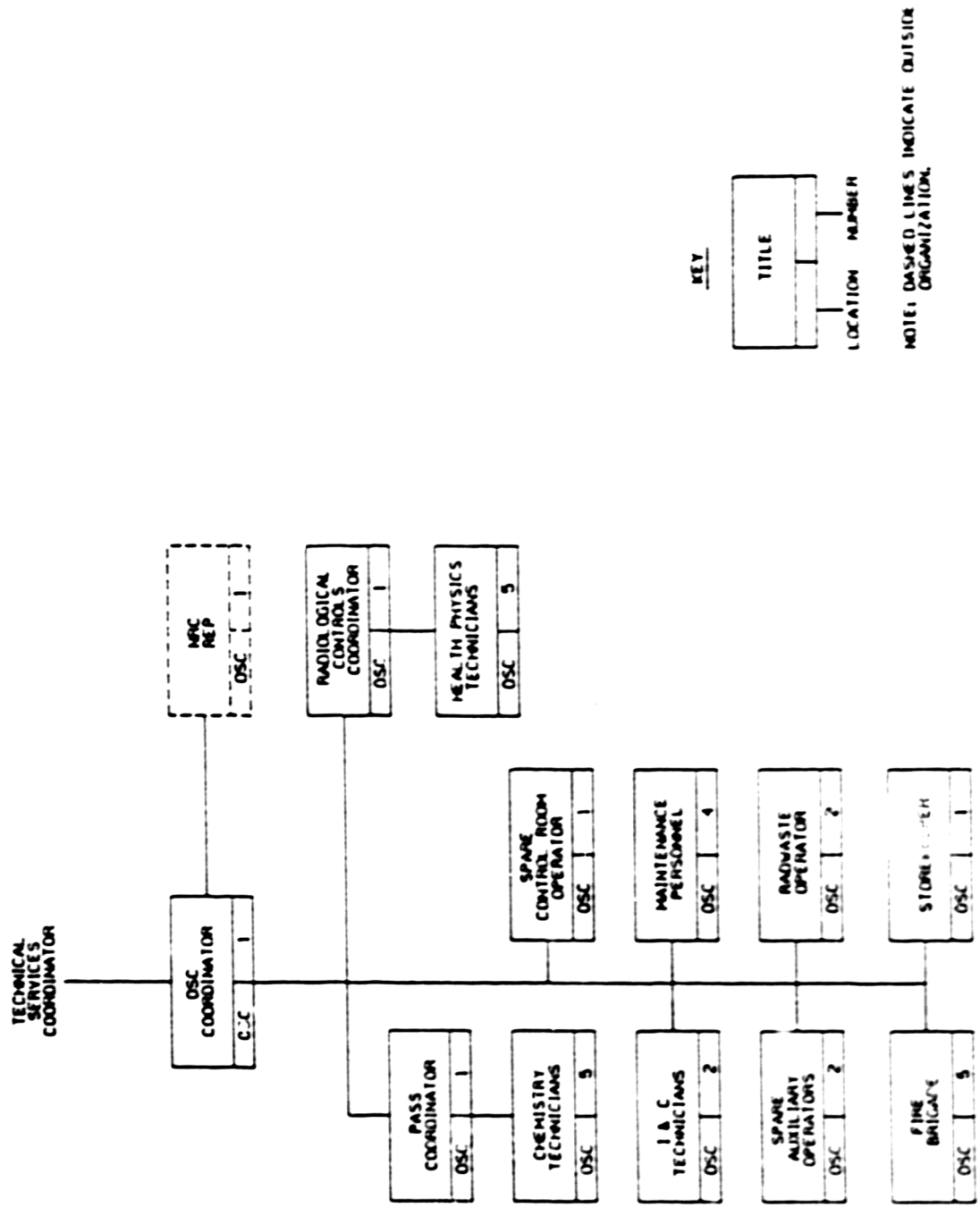
AUGMENTED EMERGENCY
RESPONSE ORGANIZATION
UNUSUAL EVENT

FIGURE 8.2



PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE SEABROOK STATION - UNITS 1 & 2 FINAL SAFETY ANALYSIS REPORT RADIOLOGICAL EMERGENCY PLAN	OPERATIONAL SUPPORT CENTER (OSC) STAFF
	FIGURE 8.5

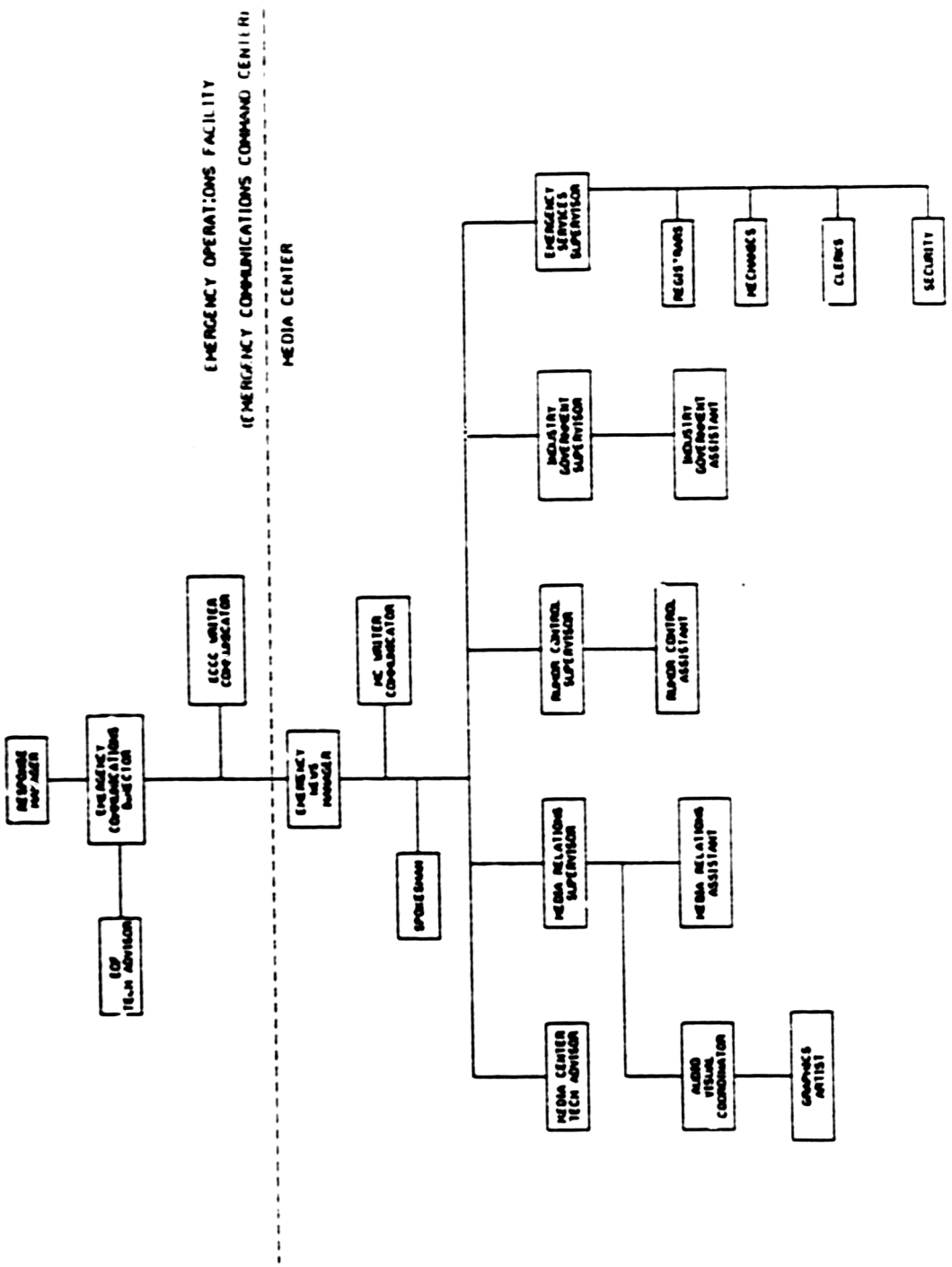


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	FIGURE 8.9

KEY

P = PRIMARY

S = SUPPORT

	FUNCTION	CIVIL DEFENSE	PUBLIC HEALTH	ENVIRONMENTAL QUALITY ENGINEERING	FOOD AND AGRICULTURE	STATE POLICE	PUBLIC WORKS	RED CROSS	OTHER VOLUNTARY AGENCIES
GENERAL	WARNING/NOTIFICATION	P				P			
	COMMUNICATIONS	P		P		P	P		
	COORDINATION	P	P						
	PUBLIC INFORMATION	P	P						
PROTECTIVE	EVACUATION	P				S	S		
	SHELTER	S						P	S
	ACCESS CONTROL	S				P	S		
	FOOD,WATER,MILK	S		P	P				
SUPPORTING	RADIATION MONITORING	S	P	S					
	EXPOSURE CONTROL	S	P						
	MEDICAL/HEALTH	S	P					S	S
	PUBLIC SAFETY	P				P	S		
	SOCIAL SERVICES	S						P	S
	REENTRY	S	P			P	S		
	TRAINING/EXERCISES	P	S			S	S		

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SUMMARY OF THE
RADIOLOGICAL EMERGENCY
RESPONSIBILITIES AND FUNCTIONS OF
MASSACHUSETTS STATE AUTHORITIES

FIGURE 8.13

KEY

P = PRIMARY

S = SUPPORT

AGENCY \ FUNCTION	COMMAND AND CONTROL	WARNING	NOTIFICATION COMMUNICATION	PUBLIC INFORMATION	ACCIDENT ASSESSMENT	PUBLIC HEALTH AND SANITATION	SOCIAL SERVICES	FIRE AND RESCUE	TRAFFIC CONTROL	EMERGENCY MEDICAL SERVICES	LAW ENFORCEMENT	TRANSPORTATION	PROTECTION RESPONSE	RADIOLOGICAL EXPOSURE CONTROL
ADJ. GENERAL						S	S		S		S		S	
AGRICULTURE													S	S
ATTY. GENERAL	S			S	S								S	
CIVIL DEFENSE	P	P	P	P	S								P	S
EDUCATION												S		
FISH & GAME			S								S			S
DIV. PUB. HEALTH	S			S	P	P	S			P			S	P
DIV. WELFARE						S	P			S		S	S	
HOUSING COMM.							S						S	
PUB. UTIL. COMM.				S	S									
PUB. WORKS & HIGHWAY			S					S	S			P	S	S
D.R.E.D. FOREST			S					S	S		S		S	
D.R.E.D. PARKS		S					S							
SAFETY	S	S	S					P	P		P	S	S	S
RED CROSS				S		S	S		S			S	S	S
OPERATOR		S	S	S	S							S	S	S

PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE SEABROOK STATION - UNITS 1 & 2 FINAL SAFETY ANALYSIS REPORT RADIOLOGICAL EMERGENCY PLAN	SUMMARY OF THE RADIOLOGICAL EMERGENCY RESPONSIBILITIES AND FUNCTIONS OF NEW HAMPSHIRE STATE AUTHORITIES
	FIGURE 8.14

FIGURE 8.15

COMPARISON OF NUREG-0654 EMERGENCY RESPONSE STAFFING REQUIREMENTS WITH THE SEABROOK STATION ON-SHIFT EMERGENCY RESPONSE ORGANIZATION (ERO)

NUREG-0654 Table B-1				Seabrook Station On-Shift ERO	
Major Functional Area	Major Tasks	Position Title or Expertise	On Shift	Number	Title
Plant Operations and Assessment of Operational Aspects		Shift Supervisor (SRO)	1	1	Unit Shift Supervisor
		Shift Foreman (SRO)	1	1	Shift Superintendent
		Control Room Operators	2	2	Control Room Operators
		Auxiliary Operators	2	2	Auxiliary Operators
Emergency Direction and Control (Emergency Coordinator)***		Shift Technical Advisor, Shift Supervisor or designated facility manager	1**	1**	Shift Superintendent
Notification/ Communication****	Notify licensee, State, local and Federal personnel and maintain communication		1	2	Control Room Communicator, Security Officer
Radiological Accident Assessment & Support of Operational Accident Assessment	Emergency Operations Facility (EOF) Director	Senior Manager	--	--	
	Offsite Dose Assessment	Senior Health Physics (HP) Expertise			
	Offsite Surveys		--	--	
	Onsite (out-of-plant)		--	--	
	In-plant surveys	HP Technicians	1	1	Health Physics Technician
	Chemistry/Radiochemistry	Rad/Chem Technicians	1	1	Chemistry Technician
Plant System Engineering, Repair and Corrective Actions	Technical Support	Shift Technical Advisor	1	1**	Shift Superintendent
		Core/Thermal Hydraulics	--	--	
		Electrical	--	--	
		Mechanical	--	--	
	Repair & Corrective Actions	Mechanical Maintenance/ Rad Waste Operator	1**	2	Maintenance Mechanic
		Electrical Maintenance/	1**	1	Maintenance Electrician
		Instrument & Control (I&C) Technician	--	1	I&C Technician

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FIGURE 8.15

COMPARISON OF NUREG-0654 EMERGENCY RESPONSE STAFFING REQUIREMENTS WITH THE SEABROOK STATION ON-SHIFT EMERGENCY RESPONSE ORGANIZATION (ERO)
(Continued)

NUREG-0654 Table B-1			Seabrook Station On-Shift ERO		
Major Functional Area	Major Tasks	Position Title or Expertise	On Shift	Number	Title
Protective Actions (In-Plant)	Radiation Protection a. Access Control b. HP Coverage for repair, corrective actions, search and rescue first-aid & firefighting c. Personnel monitoring d. Dosimetry	HP Technicians	2**	2**	Health Physics Technicians
Firefighting	--	--	Fire Brigade per Technical Specifications	Per Technical Specifications	
Rescue Operations and First-Aid	--	--	2**	2**	
Site Access Control and Personnel Accountability	Security, firefighting communications, personnel accountability	Security Personnel	All per Security Plan	Per Security Plan	
		Total	10	14	

Notes:

* For each unaffected nuclear unit in operation, maintain at least one shift foreman, one control room operator and one auxiliary operator except that units sharing a control room may share a shift foreman if all functions are covered.

** May be provided by shift personnel assigned other functions.

*** Overall direction of facility response to be assumed by EOF director when all centers are fully manned. Director of minute-to-minute facility operations remain with senior manager in technical support center or control room.

**** May be performed by engineering aide to shift supervisor.

FIGURE 8.15

COMPARISON OF NUREG-0654 EMERGENCY RESPONSE STAFFING REQUIREMENTS WITH THE SEABROOK STATION AUGMENTED EMERGENCY RESPONSE ORGANIZATION (ERO)

(Continued)

NUREG-0654 Table B-1			Capability for Additions		Seabrook Station Augmented ERO	
Major Functional Area	Major Tasks	Position Title or Expertise	30 min	60 min	Number	Title
Plant Operations and Assessment of Operational Aspects		Shift Supervisor (SRO)	—	—	—	
		Shift Foreman (SRO)	—	—	—	
		Control Room Operators	—	—	1	Spare Control Room Operator
		Auxiliary Operators	—	—	2	Spare Auxiliary Operator
Emergency Direction and Control (Emergency Coordinator)***		Shift Technical Advisor, Shift Supervisor or designated facility manager	—	—	—	
Notification/ Communication****	Notify licensee, State, local and Federal personnel and maintain communication		1	2	3**	TSC Coordinator, EOF Coordinator, Communicator
Radiological Accident Assessment & Support of Operational Accident Assessment	Emergency Operations Facility (EOF) Director	Senior Manager	—	1	1	Response Manager
	Offsite Dose Assessment	Senior Health Physics (HP) Expertise	1	—	2	EOF Coordinator, Dose Assessment Specialist
	Offsite Surveys		2	2	6	Offsite Monitoring Sampling Personnel
	Onsite (out-of-plant)		1	1	2	Health Physics Technician
	In-plant surveys	HP Technicians	1	1	5	Chemistry Technician
	Chemistry/Radiochemistry	Rad/Chem Technicians	—	1	1	PASS Coordinator
Plant System Engineering, Repair and Corrective Actions	Technical Support	Shift Technical Advisor	—	—	—	
		Core/Thermal Hydraulics	1	—	1	Reactor Engineer
		Electrical	—	1	1	I&C Coordinator
		Mechanical	—	1	1	Engineering Coordinator
	Repair & Corrective Actions	Mechanical Maintenance/	—	1	2	Maintenance Personnel
		Rad Waste Operator	—	1	2	Radwaste Operator
		Electrical Maintenance/	1	1	2	Maintenance Personnel
		Instrument & Control (I&C) Technician	1	—	2	I&C Technician

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FIGURE 8.15

COMPARISON OF NUREG-0654 EMERGENCY RESPONSE STAFFING REQUIREMENTS WITH THE SEABROOK STATION ON-[illegible] EMERGENCY RESPONSE ORGANIZATION (ERO) (Continued)

Major Functional Area	NUREG-0654 Table B-1 Major Tasks	Position Title or Expertise	Capability for Additions 30 min	Capability for Additions 60 min	Seabrook Station Augmented ERO Number	Seabrook Station Augmented ERO Title
Protective Actions (In-Plant)	Radiation Protection a. Access Control b. HP Coverage for repair, corrective actions, search and rescue first-aid & firefighting c. Personnel monitoring d. Dosimetry	HP Technicians	2	2	4	Radiological Controls Coordinator, Health Physics Technicians
Firefighting	--	--	Local Support		Fire Brigade	
Rescue Operations and First-Aid	--	--	Local Support		Firefighter/EMT	
Site Access Control and Personnel Accountability	Security, firefighting communications, personnel accountability	Security Personnel				
		Total	11	15	38+	

Notes:

* For each unaffected nuclear unit in operation, maintain at least one shift foreman, one control room operator and one auxiliary operator except that units sharing a control room may share a shift foreman if all functions are covered.

** May be provided by shift personnel assigned other functions.

*** Overall direction of facility response to be assumed by EOF director when all centers are fully manned. Director of minute-to-minute facility operations remain with senior manager in technical support center or control room.

**** May be performed by engineering aide to shift supervisor.

\+ The Seabrook Station augmented ERO includes approximately 71 station staff. ERO titles which do not correspond to Table B-1 categories (i.e., OSC Coordinator, Administrative Staff) have not been listed.

TABLE 10.2

EMERGENCY DOSE LIMITS

Dose Level	Criteria
1. 25 Rem to the whole body, or 100 Rem total to the extremities.	Maximum allowable dose to an emergency worker for the duration of the accident.
2. 75 Rem to the whole body, or 300 Rem total to the extremities.	Immediate evaluation and action required for saving of life. When efforts are completed, revert to limits 1 above, as appropriate.

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12.1.4 Evaluation of Exercises

To evaluate the performance of participating facility personnel and the adequacy of emergency facilities, equipment and procedures used during an exercise, the Exercise Coordinator will arrange for qualified observers to evaluate and critique the exercise.

A critique will be conducted as soon as feasible following the conclusion of the exercise with facility personnel as designated by the Station Manager or his representative. After the critique, the observers will complete and submit a written evaluation to the Exercise Coordinator in which the exercise performance will be measured against the objectives. All comments and/or recommendations will be appropriately documented. Observers from state agencies will be welcome to join the observation and critique process.

The exercise documentation will be submitted to the Station Manager who will assign responsibility and deadlines for corrective actions. Individuals assigned this responsibility will be required to document actions taken to improve the station's emergency preparedness. All final actions will be reported to the Station Manager.

12.2 Emergency Plan Training

All Station personnel without emergency response assignments will receive annual instruction concerning their expected action during an emergency. Selected Station personnel will be trained to assume specific positions in the emergency organization. Actions performed by emergency organization personnel will parallel the individual's routine responsibilities as much as practicable. Annual training will be provided that will effectively ensure that each member of the emergency organization can perform non-routine duties with proficiency. 55 46

All station emergency response organization personnel will receive annual emergency plan training in the following areas:

1) Station organizational control under emergency conditions;

2) Emergency documentation associated with an individual's designated emergency function;

3) Station emergency communication channels associated with an individual's designated emergency function;

4) Station emergency facilities and equipment associated with an individual's designated emergency function; and

5) Station accountability procedures.

A portion of this training is provided by personnel participation in unrehearsed drills. During these drills, instructors check the performance of the personnel assigned and offer immediate assessment of performance. Additional training shall be provided to emergency response personnel which consists of the following:

1) Observing exercises at other plants.

2) Participation in emergency workshops and/or courses such as those offered by FEMA, Harvard School of Public Health, etc.

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Documentation of all training conducted at the Station is maintained in accordance with Training Department Procedures. Details of the specialized training given on an annual basis are provided below.

46

12.2.1 Emergency Response Organization

Members of the Emergency Response Organization (ERO) are responsible for activating designated emergency activity areas and initiating or continuing those actions necessary to terminate the emergency, assess on-site and off-site radiological conditions, provide technical support and coordinate initial responses of off-site authorities, the media and other requested assistance. Accordingly, each member will receive emergency plan training required to ensure emergency response actions will be accomplished.

These personnel will be required to participate in specialized annual training associated with their assigned emergency response role. Table 12.1 describes specific areas in which members of the Emergency Response Organization will be trained for emergency response purposes. For each position designated in Table 12.1, both the primary and alternate(s) to these positions, as specified in Appendix A of this plan, will be required to participate in the training sessions established.

Assignment of station personnel to these functions will, in general, parallel their normal station duties. Personnel designated to perform these functions may be cross-trained in more than one functional area. All Station personnel will receive appropriate training concerning the conduct of emergency functions under accident conditions.

55

12.2.2 Selected State/Local Emergency Support Organization Personnel

Table 12.2 describes the training programs which will be established for state/local emergency support groups. All response groups which are required to report to the Station in order to complete their emergency role will be trained in Station access procedures and organizational control (i.e., the identification of the on-site individual(s) responsible for controlling their emergency response activity). Each support group will be instructed as to the Station's capabilities associated with their specific emergency function. In addition to the training specified in Table 12.2, selected local medical support personnel will participate in an annual medical drill with Seabrook Station emergency response personnel.

46

State emergency response personnel will be offered training in the following areas: (1) the Station emergency classification systems; (2) off-site dose projection methodology; and (3) the Station protective action recommendation criteria and its relationship to Station conditions. These officials will also receive instructions concerning the Station emergency response organization and the layout of the EOF. Coordination with off-site authorities will include planning for and participation in station exercises. 55

12.2.3 Recovery Organization

The Recovery Organization will be providing the management function for restoring the station to normal conditions. This effort will commence shortly after the emergency termination and it will continue throughout the recovery phase.

During the emergency phase the Recovery Organization is an integral part of the ERO. The Response Manager enlists the support of the Nuclear Production staff personnel to assist the Station personnel in handling any emergency response effort. Training will be provided to selected members of the Nuclear Production staff in the following areas: (1) Emergency Organization and Recovery Organization responsibilities; (2) Notification/Mobilization Procedures; (3) Industry Emergency support capabilities; and (4) Station Emergency Response Facility operations. 55 46

12.2.4 Emergency Communications Personnel

The designated Emergency Communications Personnel will receive training in the following areas:

1) Emergency response concept including emergency management, recovery management and emergency response personnel.

2) Offsite support agencies, organizations and facilities.

3) Onsite support facilities and capabilities.

4) Media interface conduct of operations.

5) Media Center facility, functions and resources.

6) Industry, Federal, State and other public information emergency plans to ensure recognition of contacts, and coordination.

7) Communication channels and notification scheme. 55

12.3 Review and Updating of Plan and Procedures

Annual independent reviews of the Station's emergency preparedness program will be conducted. The reviews shall include the emergency plan, its implementing procedures, training, equipment and state/local government planning interfaces. Management controls will be implemented for evaluation and correction of review findings. The result of the review, along with recommendations for improvements, will be documented and retained for a period of five years. 46

All recommendations for changes to the Radiological Emergency Plan or procedures based on the annual exercise will be submitted to the Seabrook Station Operations Review Committee (SORC) for review before implementation. On an annual basis, written agreements with outside support organizations and government agencies will be evaluated during the radiation emergency exercise and/or planned medical or fire drills to determine if such agreements are still valid. If not, then these agreements will be renewed and updated; otherwise, the agreements will be recognized as current documentation. All telephone number listings associated with the emergency notification process will be updated on a quarterly basis. Revisions will be made in accordance with current regulations and guidelines on a continuing basis, as applicable. Changes to the plan and procedures will be forwarded to all organizations with a responsibility for implementation of the plan. 46

12.4 Maintenance and Inventory of Emergency Equipment and Supplies

The emergency equipment maintained in the Control Room, the Operational Support Center, the Technical Support Center, and the Emergency Operations Facility will be listed in an emergency equipment checklist. Appendix F to this plan specifies the general equipment included. The calibration cycles of emergency station instruments are quarterly for portable instruments and semi-annually for pocket dosimeters. Along with requirements for calibration, the instruments will be source-checked during monthly inventories and before each use. There are sufficient reserve instruments and equipment to replace those that are removed from emergency kits for calibration purposes. A Health Physics representative will be assigned on a monthly basis to inventory and maintain the emergency kits and/or equipment. 55

12.5 Radiological Assessment Manager

Emergency preparedness program maintenance and coordination are responsibilities assumed by the Radiological Assessment Manager assigned at the Station, whose duties are to: 49 55

1) Maintain the Station Radiological Emergency Plan updated;

2) Maintain the Station Emergency Response Procedures updated;

3) Ensure the conduct of emergency plan training and drills and exercises; 46 55

4) Track identified exercise deficiencies to ensure corrective actions are accomplished;

5) Schedule and insure the conduct of emergency equipment inventories and calibration;

6) Represent the Station in state and local emergency plan interfaces;

7) Represent the Station in NRC emergency planning appraisals and audits; and

8) Interface with the Nuclear Production staff in emergency planning matters.

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APPENDIX A
INDEX

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POSITION DEFINITION

EMERGENCY POSITION: Short Term Emergency Director

ACTIVATION LEVEL: Unusual Event through General Emergency

RESPONSE LOCATION: Control Room

RESPONSIBLE TO: Corporate Management

RESPONSIBILITIES:

a. Initiation of station emergency response.

b. Decision and direction to notify offsite authorities.

c. Recommendation of protective actions to offsite authorities.

d. Direction to plant staff for the mitigation of station emergency conditions.

e. Reclassification of the emergency.

f. Decision on site evacuation.

g. Authorization for workers to exceed 10CFR20, Emergency Radiation Exposure Limits.

h. Initiate search and rescue.

CAUTION
RESPONSIBILITIES a, b, c, d, AND g ARE NON-DELEGATABLE

PERSONNEL DESIGNATED TO FILL POSITION:

Primary - Shift Superintendent

Alternate - Unit Shift Supervisor

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POSITION DEFINITION

EMERGENCY POSITION: Site Emergency Director

ACTIVATION LEVEL: Unusual Event through General Emergency

RESPONSE LOCATION: Control Room/TSC

RESPONSIBLE TO: Response Manager

RESPONSIBILITIES:

a. Relief of Short Term Emergency Director.

b. Decision and direction to notify offsite authorities.

c. Direction of in-station emergency response.

d. Staffing of emergency response organization at required level.

e. Reclassification of the emergency.

f. Requests for industry emergency response assistance, if necessary.

g. Authorization for workers to exceed 10CFR20, Emergency Radiation Exposure Limits.

h. Initiate search and rescue.

CAUTION
RESPONSIBILITIES a, b, c, d, AND h ARE NON-DELEGATABLE

PERSONNEL DESIGNATED TO FILL POSITION:

Primary - Station Manager

Alternate - Assistant Station Manager

Alternate - Operations Manager

55 56

POSITION DEFINITION

EMERGENCY POSITION: Response Manager

ACTIVATION LEVEL: Alert through General Emergency

RESPONSE LOCATION: EOF

RESPONSIBLE TO: Corporate Management

RESPONSIBILITIES:

a. Relieve the Site Emergency Director of any duties not directly related to emergency termination efforts.

b. Provide management direction and guidance.

c. Request and coordinate corporate, federal, and YNSD support for response operations.

d. Coordinate with the NRC the resolution of issues regarding operating license requirements.

e. Direct recovery actions implemented once the emergency has ended.

f. Approve public information releases.

g. Provide corporate interface with government authorities.

h. Recommendation of protective actions to offsite authorities.

i. Requests for Federal assistance.

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PERSONNEL DESIGNATED TO FILL POSITION:

Primary - Vice President of Nuclear Production

Alternate - Senior Vice President

55

POSITION DEFINITION

EMERGENCY POSITION: Emergency Operations Manager

ACTIVATION LEVEL: Unusual Event through General Emergency

RESPONSE LOCATION: Control Room/TSC

RESPONSIBLE TO: Site Emergency Director

RESPONSIBILITIES:

a. Coordinate inputs/recommendations from all external (out of control room) technical and corrective action advisors.

b. Coordinate the on-site activities of emergency response personnel required to restore the affected unit to a safe condition.

c. Provide technical accident assessment and operational guidance to terminate the accident to the Technical Services Coordinator, OSC Coordinator, and control room staff.

d. Analyze instrument and control problems, request the design and planning for installation of temporary modifications, and define emergency operation procedures during the modification period.

e. Analyze problems in the area of system operations, determine emergency procedures related to system operation, and establish shift operations support, if applicable.

f. Develop guidance for station shift operations concerning protection of the reactor core.

g. Oversee the accumulation, retention, retrieval and transmission of vital unit parameters required to analyze the accident status.

h. Direct the development of simulator programs to simulate proposed operational sequences and to review operational occurrences as necessary.

PERSONNEL DESIGNATED TO FILL POSITION:

Primary - Assistant Operations Manager

Alternate - Off Duty Shift Superintendent

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POSITION DEFINITION

EMERGENCY POSITION: OSC Coordinator

ACTIVATION LEVEL: Alert through General Emergency

RESPONSE LOCATION: OSC

RESPONSIBLE TO: Emergency Operations Manager

RESPONSIBILITIES:

a. Direct support personnel in the investigation and/or repair of plant systems.

b. Ensure all personnel assigned to perform an in-plant emergency function are fully aware of the scope of the assignment.

c. Direct search and rescue efforts.

PERSONNEL DESIGNATED TO FILL POSITION:

Primary - Off Duty Unit Shift Supervisor

Alternate - Off Duty Unit Shift Supervisor

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POSITION DEFINITION

EMERGENCY POSITION: Computer Engineer

ACTIVATION LEVEL: Alert through General Emergency

RESPONSE LOCATION: TSC/Computer Room

RESPONSIBLE TO: Technical Services Coordinator

RESPONSIBILITIES:

a. Provide continuous operation of the Main Plant Computer System (MPCS).

b. Provide computer assistance as needed to personnel assigned to the Control Room.

c. Provide computer assistance as needed to personnel assigned to the Technical Support Center (TSC).

d. Provide computer assistance as needed to personnel assigned to the Emergency Operations Facility (EOF).

PERSONNEL DESIGNNATED TO FILL POSITION: Primary - Senior Engineer

Alternate - Engineer

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POSITION DEFINITION

EMERGENCY POSITION: Computer Technician

ACTIVATION LEVEL: Alert through General Emergency

RESPONSE LOCATION: TSC/Computer Room

RESPONSIBLE TO: Computer Engineer

RESPONSIBILITIES:

a. Provide maintenance of the Main Plant Computer System (MPCS) including the IRTUs as required.

b. Provide computer assistance as needed to personnel assigned to the Control Room.

c. Provide computer assistance as needed to personnel assigned to the Technical Support Center (TSC).

d. Provide computer assistance as needed to personnel assigned to the Emergency Operations Facility (EOF).

PERSONNEL DESIGNATED TO FILL POSITION: Primary - Senior Computer Technician

Alternate - Senior Computer Technician

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POSITION DEFINITION

EMERGENCY POSITION: Access Authorization Officer

ACTIVATION LEVEL: Alert through General Emergency

RESPONSE LOCATION: Gatehouse

RESPONSIBLE TO: Site Emergency Director

RESPONSIBILITIES:

a. Notify facilities outside of the protected area of an evacuation.

b. Notify secondary responders of the Emergency Response Organization (ERO).

PERSONNEL DESIGNATED TO FILL POSITION: Primary - Per Security Plan

Alternate - Per Security Plan

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POSITION DEFINITION

EMERGENCY POSITION: Corporate Support Manager

ACTIVATION LEVEL: Alert through General Emergency

RESPONSE LOCATION: EOF

RESPONSIBLE TO: Response Manager

RESPONSIBILITIES:

a. Directs all licensing, engineering and off-site support within the corporate framework.

b. Coordinates all off-site and licensing support from the Engineering Support Center (ESC) of the Nuclear Services Division (NSD) of Yankee Atomic Electric Company (YAEC).

PERSONNEL DESIGNATED TO FILL POSITION:

Primary - Nuclear Services Manager

Alternate - Special Projects Manager

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