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CRITERIA
FOR
UTILITY MANAGEMENT
AND
TECHNICAL COMPETENCE

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INTRODUCTION

In the aftermath of the Three Mile Island nuclear plant accident, a number of studies and investigations conducted by the industry, the NRC and others have recommended changes in the numbers, qualifications and organization of personnel operating and providing support for nuclear power plants. The principal studies have been the President's Commission on Three Mile Island, the NRC Special Inquiry Group, the NRC staff's Lessons Learned Task Force, and the Atomic Industrial Forum. Collectively, these studies have called for a general upgrading of utility capabilities for handling routine plant operations and especially for coping with accident conditions. As might be expected, the recommendations of these diverse groups are not completely compatible; what is clear, however, is that all parties agree that a general upgrading is required. The purpose of this document is to promulgate criteria for nuclear plant staffing which are generally in accordance with the various recommendations and which describe an acceptable organizational structure and competence level for nuclear power plant operations.

These criteria address both the onsite and offsite resources that must be available for plant operation under both routine and accident conditions. As noted in the later discussion, minimum shift staffing and competence is determined by the capabilities considered essential for short term accident response, since we must assume that a postulated accident occurs during a period when only the minimum operating staff is present at the facility.

This document specifies minimum acceptable qualifications for operating and support personnel. It does not address how these personnel are to be trained. The document also refers in general terms to the procedures that will be required, but no attempt is made to itemize these procedures. Finally, the document mentions the communication facilities that are necessary, but it does not attempt to describe these facilities in detail. In the final analysis, the capability of a utility to operate a plant safely under both routine and accident conditions will depend upon having a solid, workable, safety-conscious organization; with the requisite numbers of operating and support personnel properly trained and retrained to attain and maintain their skills; with adequate, understandable procedures in place to guide their actions; and with the ability to quickly communicate their needs, recommendations and instructions.

There is some overlap between the contents of this document and the proposed criteria that were issued for interim use and comment in February 1980 in NUREG-0654/FEMA-REP-1 "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants". In particular, Section II.B of NUREG-0654 sets forth proposed criteria for the onsite emergency organization of the nuclear plant. Areas of conflict between the criteria of NUREG-0654 and those criteria contained in this document are explained as follows. This document addresses itself primarily to the qualifications and areas of expertise deemed to be necessary for operation and control of a nuclear plant under both routine and accident conditions. NUREG-0654 has primarily addressed the numbers

of "hands" considered necessary to perform the many tasks that would be required in the event of an accident.

This document will be issued for public comment. Comments received will be taken into account and the resulting criteria will be coordinated with the criteria resulting from the public comments received on NUREG-0654. Final guidance issued by the NRC for utility management and technical competence will be compatible with the final criteria established for NUREG-0654.

II CRITERIA FOR ROUTINE OPERATIONS

A. Onsite (Plant Staff)

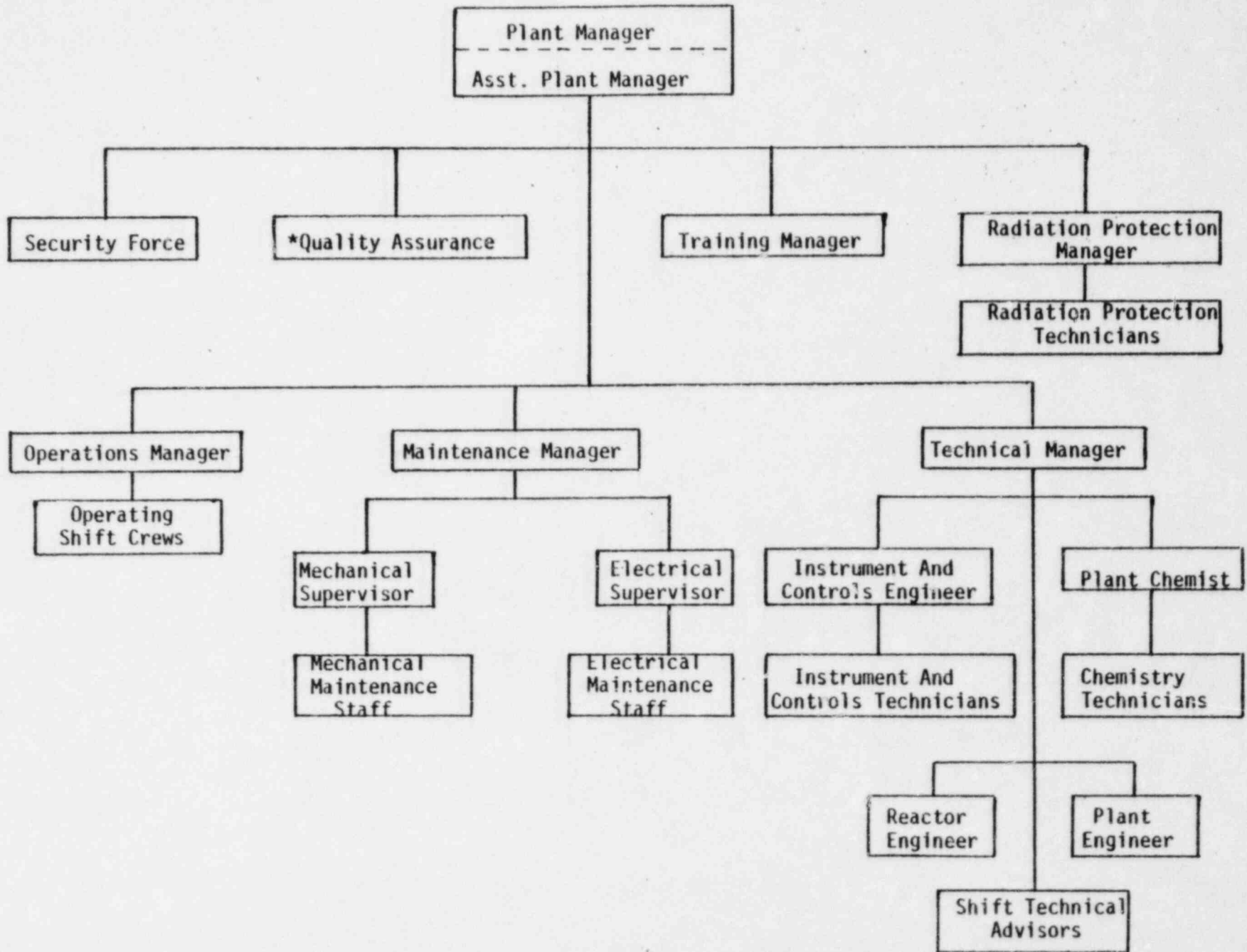
Each licensee of a nuclear power plant shall establish an onsite plant staff to operate the plant for routine operational activities (includes normal operation, routine maintenance, and short-term response to abnormal conditions). The plant staff is considered to be those persons that report to the plant manager.

1. Plant Staff Organization

Each licensee shall establish an organization to provide for the overall management of activities associated with the day-to-day operation of the facility. The responsibilities, authorities, and provisions described in Sections 3.4, 4.4, and 5.2 of ANSI/ANS 3.2* provide functional and organizational criteria to be met. Clear management control and effective lines of authority and communications shall exist between the plant management staff and those personnel responsible for the operation, maintenance, and technical support of the plant. Although plant staff organizations can reflect variations in company policy and procedures, the representative organization shown in Figure 1 is an arrangement which can be satisfactorily employed to operate a nuclear power station. The key characteristics of an acceptable organizational arrangement are:

- The inclusion of the necessary areas of expertise (see Section 3.4 of ANSI/ANS 3.2).

* Administrative Controls and Quality Assurance Program for Operational Nuclear Power Plants.



* May report offsite to the Director of Operational Quality Assurance

REPRESENTATIVE PLANT ORGANIZATION

Figure 1

1
5
1

- . The reporting of the areas of radiation protection, quality assurance, and training to a high level plant position to assure independence from operating pressures.

- . Independence of shift technical advisors from operations groups.

- . Sufficient managerial depth to provide backup in the event of the absence of the incumbent.

- . Clear lines of authority to the plant manager.

2. Plant Staff Personnel Resources

a. Management Resources

- (1) The plant staff organization shall provide in-depth experience at the manager level, i.e., the level at which broad responsibilities are assigned for activities conducted at a nuclear power facility. Functional areas of sufficient importance to warrant the assignment of managers are overall plant management, operations management, training management, technical management, maintenance management, radiation protection management, and quality assurance management.

- (2) Qualification requirements for the levels of management positions are described in Section 4 of ANSI/ANS 3.1.*

* Selection and Training of Personnel for Nuclear Power Plants

b. Professional-Technical Resources

(1) Staffing levels shall be such that there is at least one person to provide support to the plant staff in each of the following areas:

- 1) Nuclear Operations
- 2) Chemistry and Radiochemistry
- 3) Radiation Protection
- 4) Instrument and Controls
- 5) Quality Assurance
- 6) General Engineering Support
- 7) Reactor Engineering

Note: Individuals may not be credited with providing expertise in more than one area.

(2) Qualification requirements for the professional-technical level positions are found in Section 4.4 of ANSI/ANS 3.1.

c. Shift Technical Advisor

A Shift Technical Advisor (STA) shall be available onsite to each operating shift. The STA shall have no duties or responsibilities for manipulation of controls or command of operations. There shall be at least one STA assigned full time at each site from which one or more reactors is operating; the STA shall be available to report to the control room to act in an advisory capacity to the shift supervisor in a matter of minutes. The STA shall be qualified to provide

technical support to the shift supervisor in the areas of thermal hydraulics, reactor engineering, and plant analysis. Minimum qualification requirements for the STA are as described in Section 4.4 of ANSI/ANS 3.1.

d. Shift Crew

The shift crew described below is intended to provide personnel in both sufficient numbers and technical capability for cold shutdown conditions, refueling condition, routine operation, and short term accident conditions.

(1) Numbers and License Requirements:

- (a) For each site with fuel in a reactor core there shall be a shift supervisor with a senior reactor operator's license on site at all times.
- (b) For each nuclear power reactor with fuel in the core there shall be a licensed operator in the control room at all times.
- (c) For each reactor that is operating there shall also be a licensed senior reactor operator in the control room at all times.
- (d) For each control room from which a reactor is operating there shall be an additional licensed operator* to provide relief for the control room operator and to perform duties outside the control room that need to be performed by a licensed operator.

* Any person performing dual functions requires a license for both units.

- (e) For each reactor containing fuel there shall be an additional person (unlicensed operator), above the requirements of a) through d) above, plus an additional person (unlicensed operator) for each control room from which a reactor is operating.
 - (f) Shift crew assignments for all core alterations after initial fuel loading shall include a Licensed Senior Reactor Operator or a Senior Reactor Operator Limited to Fuel Handling to directly supervise the core alterations. This person shall not be assigned any other concurrent operational duties.
 - (g) Provisions shall be made to assure that the Shift Supervisor is substantially relieved of routine administrative duties.
 - (h) Shift staffing should be sufficient to assure that: scheduled work periods do not exceed 12 hours straight; at least a 12 hour break is provided between work periods; no more than 72 hours of work is scheduled in any 7 day period; no more than 14 consecutive days are scheduled without having 2 consecutive days off.
- (2) On-Shift Technical Requirements
- Each shift crew for an operating nuclear reactor shall, in addition to or in conjunction with the requirements

of (1) above, collectively have the following technical qualifications:

(a) Reactor Physics and Control

Equivalent Course Work: One-semester, college-level reactor physics.

Experience: Simulator experience including reactivity transients (see Transient Analysis).

(b) Nuclear Fuel

Equivalent Course Work: Utility Training course in physical and chemical properties of fuel.

Experience: None recommended.

(c) Thermal Hydraulics

Equivalent Course Work: One-semester, college-level heat transfer and fluid flow.

Experience: One year in design/operation of pressurized hydraulic systems.

(d) Transient Analysis

Equivalent Course Work: Two-week structured simulator course, including reactivity transients and variety of accident sequences.

Experience: Simulator experience (see above).

(e) Instrumentation and Control

Equivalent Course Work: Associate's degree in electronics.

Experience: Two years in design/operation of a variety of reactor instrumentation, including thermal hydraulics, reactivity, radiation monitors, and process computer.

(f) Mechanical and Structural Engineering

Equivalent Course Work: One-semester, college-level engineering course in mechanics of materials.

Experience: One year in applied mechanical or structural engineering.

(g) Radiation Control and Health Physics

Equivalent Course Work: Utility training course in radiation control and health physics, including radiation work permits.

Experience: One year of experience in implementing radiation control procedures.

(h) Electric Power

Equivalent Course Work: One-semester, college-level electric power engineering course or utility training course in electrical power and auxiliaries for the specific plant.

Experience: One year of design/operation of electric power systems.

(i) Chemistry

Equivalent Course Work: One year college-level chemistry plus utility training in reactor chemistry, including boron control.

Experience: None recommended.

(j) Plant Operation and Maintenance

Equivalent Course Work: See Transient Analysis

Experience: Two years in operation/maintenance at nuclear power plant, at least one year of which is at specific plant to be operated.

e. Technician-Maintenance Resources

(1) Management shall assign technicians, repairmen, and inspectors to each plant staff to perform activities relative to:

- (a) Mechanical, electric, and instrument and controls maintenance and repairs;
- (b) Chemistry and radiochemistry sampling and analysis;
- (c) Radiation protection measurements, and controls and functions;
- (d) Inspection, review, and audit of quality assurance; and,
- (e) Radwaste functions.

- (2) The number of persons assigned to perform these activities shall be adequate to complete the work needed to meet respective programmatic requirements.

- (3) Qualification requirements for technicians and maintenance repairmen are described in Section 4.5 of ANSI/ANS 3.1.

- (4) Qualification requirements for inspectors are described in N45.2.6*

3. Training

Each member of the plant staff shall be trained and retrained in job specific subjects and in general plant procedures and activities such as radiation protection, fire protection, and security procedures. Section 5 of ANSI/ANS 3.1** describes the training and retraining program for plant staff personnel.

4. Qualifications of Plant Staff Personnel

Regulatory Guide 1.8, "Personnel Selection and Training", sets forth the staff position on plant personnel qualifications and

*American National Standard Qualifications of Inspection, Examination, and Testing Personnel for the Construction Phase of Nuclear Power Plants.

** Selection and Training of Nuclear Power Plant Personnel.

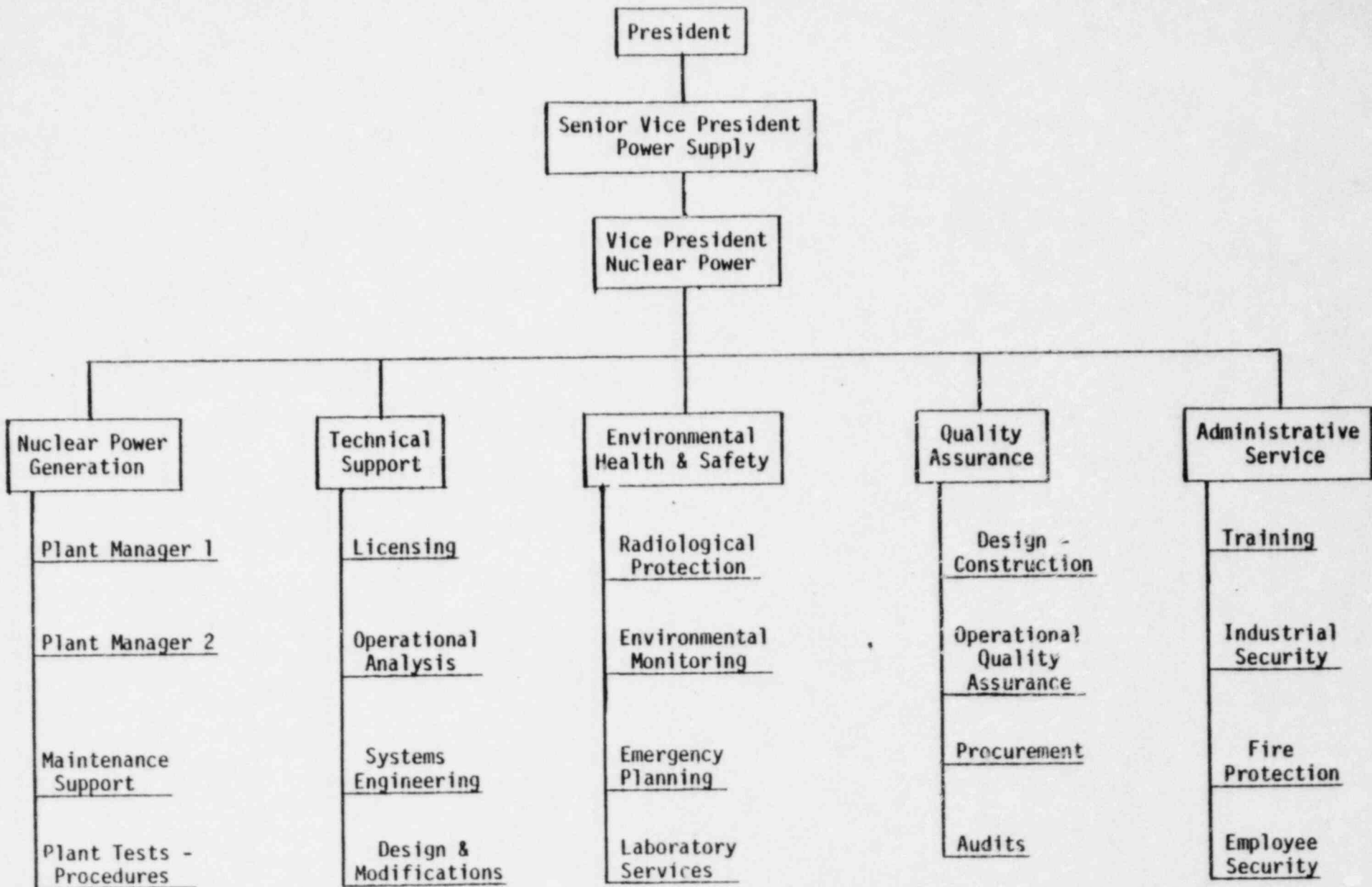
indicates that the criteria for selection (qualifications) contained in ANSI/ANS 3.1 are generally acceptable, except as noted in the regulatory position section of the guide.

B. Offsite

Corporate management of the utility-owner of a nuclear power plant shall be sufficiently involved in the operational phase activities, including plant modifications, to assure a continual understanding of plant conditions and safety considerations. Corporate management shall establish safety standards for the operation and maintenance of the nuclear power plant. To these ends each utility-owner shall establish an organization, parts of which shall be located onsite, to: perform independent reviews and audits of plant activities; provide technical support to the plant staff for maintenance, modifications, operational problems, and operational analysis; and aid in the establishment of programmatic requirements for plant activities.

1. Organization

The licensee shall establish an integrated organizational arrangement to provide for the overall management of nuclear power plant operations. This organization shall provide for clear management control and effective lines of authority and communication between the organizational units involved in the management, technical support, and operation of the nuclear unit. Figure 2 shows a typical array of management responsibilities



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UTILITY ORGANIZATION

Figure 2

and functions arranged to provide integrated control over activities important to the safe operation of the nuclear power plant. The groupings do not necessarily imply a best organizational structure, but are intended to suggest a division of responsibilities that would minimize any conflict with the application of resources applied to other non-nuclear plants and functions of the utility.

The key characteristics of this typical organization arrangement are:

- Integration of all necessary functional responsibilities under a single responsible head.
- The assignment of responsibility for the safe operation of the nuclear power plant(s) to an upper level executive position.

2. Resources

a. Management Resources

The management official in overall charge of nuclear power shall have a bachelors degree in science or an engineering degree in a field associated with power production and ten years of broad experience associated with power plant design and operation. At least 5 years shall be nuclear power plant experience.

Persons with demonstrated management capability shall be provided in the areas of operational management, engineering management and supporting services management. The manager of each specific functional area shall have a bachelors degree generally associated with that of his function and eight years of responsible experience. Three years of this experience shall be specifically related to the type of function he will perform. Suitable depth shall be provided to meet the requirements of Part III (Accident Conditions).

The management official in overall charge of nuclear power (e.g., Vice President Nuclear Power, Figure 1) shall be actively involved in nuclear plant operational activities. Functions which should be performed by this official include:

- . The establishment and approval of the qualification requirements for all plant staff positions.
- . The establishment and approval of qualification requirements for all offsite staff management positions that support safety related activities at the plant.
- . The review of qualifications and certification of the qualifications of personnel assigned to plant staff positions in the categories of managers, lead professional-technical personnel and shift supervisors.

- The establishment and supervision of functional units providing review of operational activities independent of the plant staff.
 - Concurrence with nuclear plant programmatic requirements established for the industrial security plan, quality assurance plan, fire protection program and plant staff training program.
 - Periodic assessment of plant staff training and quality assurance programs.
 - Review of NRC nuclear power plant inspection reports.
 - Review of deficiencies and violations of plant procedures and Technical Specifications requirements, and concurrence with corrective action taken to preclude recurrence.
 - Active overall management of safety review groups that perform independent reviews of important matters affecting safety.
- b. Onsite Safety Review Group
- Utility management shall establish a group, independent of the plant staff, but assigned onsite, to perform independent reviews of plant operational activities.

(1) Composition of Review Group

Personnel performing reviews and evaluations shall collectively have expertise and competence to review the areas of:

- nuclear power plant operations;
- nuclear engineering, including core physics and thermal-hydraulics;
- chemistry and radiochemistry;
- plant instrument and controls engineering;
- radiological safety;
- mechanical and electrical engineering including a.c. and d.c. systems, and systems analysis;
- quality assurance; and,
- metallurgy.

It would be expected that the nucleus of this group would be comprised of no less than 3 persons. In areas where special expertise is required, additional persons would be added on an ad hoc basis. It is suggested that the Shift Technical Advisors could be assigned to this group, with the staffing level set so as to allow periods of duty with the review group as a break from STA shift duties.

(2) Functions of Review Group

The functions of the review group shall include the following:

- Evaluation for technical adequacy and clarity of all procedures important to the safe operation of the facility.
- Evaluation of plant operations from a safety perspective.
- Evaluation of the effectiveness of the quality assurance program.
- Evaluation of the operating experience of the plant and plants of similar design.
- Overall assessment of the plant staff performance regarding their conformance to requirements related to safety.
- Review of changes to the facility as described in the Safety Analysis Report, changes in procedures as described in the Safety Analysis Report, and tests and experiments not described in the Safety Analysis Report which are completed without prior NRC approval under the provisions of 10 CFR 50.59(a)(1).
- Review of changes in the facility, and proposed tests and experiments, any of which involve a change in the technical specifications or an unreviewed safety questions as defined in 10 CFR 50.59(c).
- Review of changes in the technical specifications and license amendments relating to nuclear safety prior to implementation, except in those cases where the change is identical to a previously reviewed proposed change.

- Review of violations, deviations and reportable events, which require reporting to the NRC in writing, such as:
 - a) Violations of applicable codes, regulations, orders, technical specifications, license requirements or internal procedures or instructions which have safety significance.
 - b) Significant operating abnormalities or deviations from normal or expected performance of plant structures, systems, or components affecting safety.
 - c) Reportable events, which require notification to the NRC in writing within 24 hours, as defined in the plant technical specifications.
- Evaluation of personnel changes in key management positions and evaluation of changes in plant organizational structure.
- Any other matter involving safe operation of the nuclear power plant that an independent reviewer deems appropriate for consideration.
- Assessment of plant safety programs.

(3) Qualifications

Persons performing these independent reviews and evaluations shall meet the qualification requirements described in Section 4.7 of ANS 3.1-1980.

(4) Reports

The Onsite Safety Review Group shall prepare written summaries of reviews and evaluations performed as noted in (2) above. These summaries shall include the results of, and recommendations resulting from such reviews and evaluations. Monthly reports containing a summary of work completed and recommendations made shall be prepared and distributed to corporate management with information copies to plant management.

c. Senior Management Oversight Group

Each utility-owner shall establish a senior level oversight group that provides a means for corporate management to be involved in nuclear power plant safety considerations, and to assure that safety considerations are effectively applied to plant operational activities.

The senior management oversight group should be composed of 3 to 4 persons at the Vice President level such as the vice president for power production, vice president for engineering and vice president for planning and research. The group should meet monthly to perform, as a minimum, the following functions:

- Provide oversight to activities performed by the Onsite Safety Review Group and other review groups.
- Review corrective actions and recommendations of the Onsite Safety Review Group and other review groups.

- Assure, as appropriate, that corrective actions and recommendations of the Onsite Safety Review Group and other review groups are effectively implemented.

d. Offsite Technical Staff Resources

In addition to the activities performed by the technical group on the plant staff, there are many other technical activities necessary to support the operation of a nuclear power plant. These activities are normally located offsite. Provisions for this offsite technical support to the plant staff, as a minimum, shall be as follows:

- (1) Support shall be provided to perform the following functions:
 - Review of operating abnormalities;
 - Review of plant system problems and performance;
 - Review and correction of equipment malfunction;
 - Perform plant design changes and modifications, or oversee such activities in detail in the event outside contractors are utilized;
 - Support major maintenance efforts;
 - Evaluate and provide response to NRC bulletins and orders;
 - Establish and monitor contracted work;
 - Establish training, security, and emergency plans.

(2)

Technical capability shall be provided in the areas of:

- Nuclear, mechanical, structural, electrical, thermal-hydraulic and fluid systems,
- metallurgical and materials, and instrumentation and controls engineering;
- Plant chemistry;
- Health physics;
- Fueling and refueling operations support;
- Maintenance support;
- Technical and engineering management; and,
- Operational management.

(3) Staffing level shall be such that there is at least one person to provide support to the plant staff in each of the above areas. Assignments shall be of a full-time nature to assure current knowledge of the nuclear unit's design and operation. (Note also the requirements of accident conditions).

(4) Qualifications of persons in the technical areas described above shall include a Bachelor's Degree in Engineering or the Physical Sciences and three years of professional experience in the field for which they are providing technical support.

(5) Qualifications of persons filling management positions in technical support positions shall include an

- appropriate Bachelor's Degree and 6 years of experience in power plant operation and/or design.

e. Training

Training shall be provided to those personnel not reporting to the plant manager but who provide technical support to the plant staff. This training should be aimed to aid these person in performing their routine job functions and to assure that these persons are prepared to provide support to the plant staff in an emergency. Training programs for technical support personnel shall train persons in the following areas:

- Information on LERs applicable to their facility;
- Current knowledge of federal regulations and changes thereto applicable to their facility;
- Current status of plant design changes and modifications;
- Information on applicable codes and standards;
- Advances in the state of the art in their respective areas of expertise;
- Their functions within an emergency response organization; and
- Health physics procedures in the event they need to function at the plant site.

f. Outside Contractual Assistance

The licensee shall provide the personnel necessary to satisfy the requirements for the Onsite Group and the Offsite Technical Staff Resources described previously.

However, expertise for areas of speciality and non-routine efforts may be obtained through contractual arrangement. For these cases the licensee shall:

- Identify the company with which the contract has been signed;
 - Describe the support to be provided by the contract;
 - Identify the duration of the contract; and,
 - Specify the means by which all or portion of the contract will be activated. (phone call, other.)
3. Applicable Codes and Standards

ANSI/ANS 3.2 "Administrative Controls and Quality Assurance for the Operational Phase of Nuclear Power Plants", as endorsed by Regulatory Guide 1.33, provides additional requirements for management control.

III. CRITERIA FOR ACCIDENT CONDITIONS

This section addresses the management and technical resources required for accident mitigation and recovery activities. These activities are divided into three time periods: short term, from accident initiation until approximately one hour; near-term from approximately one hour after the accident until approximately 16 hours; and long-term, from approximately 16 hours after the accident until the Recovery Manager and the Director of NRR determine that plant conditions no longer pose a significant threat to public health and safety.

For the purpose of these criteria, emergency action levels are as defined in NUREG-0610, "Draft Emergency Action Guidelines for Nuclear Power Plants". NUREG-0610 was issued for interim use and comment in September 1979, and is incorporated as Appendix 1 to NUREG-0654/FEMA-REP-1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants", issued for interim use and comment in February 1980.

NUREG-0610 establishes four classes of Emergency Action Levels:

Notification of Unusual Event

Alert

Site Emergency

General Emergency

The responsibility for determining the status of the nuclear plant in regard to emergency action levels shall be assigned to the Shift Supervisor who shall have the authority and responsibility to immediately and unilaterally initiate any emergency actions. A clear

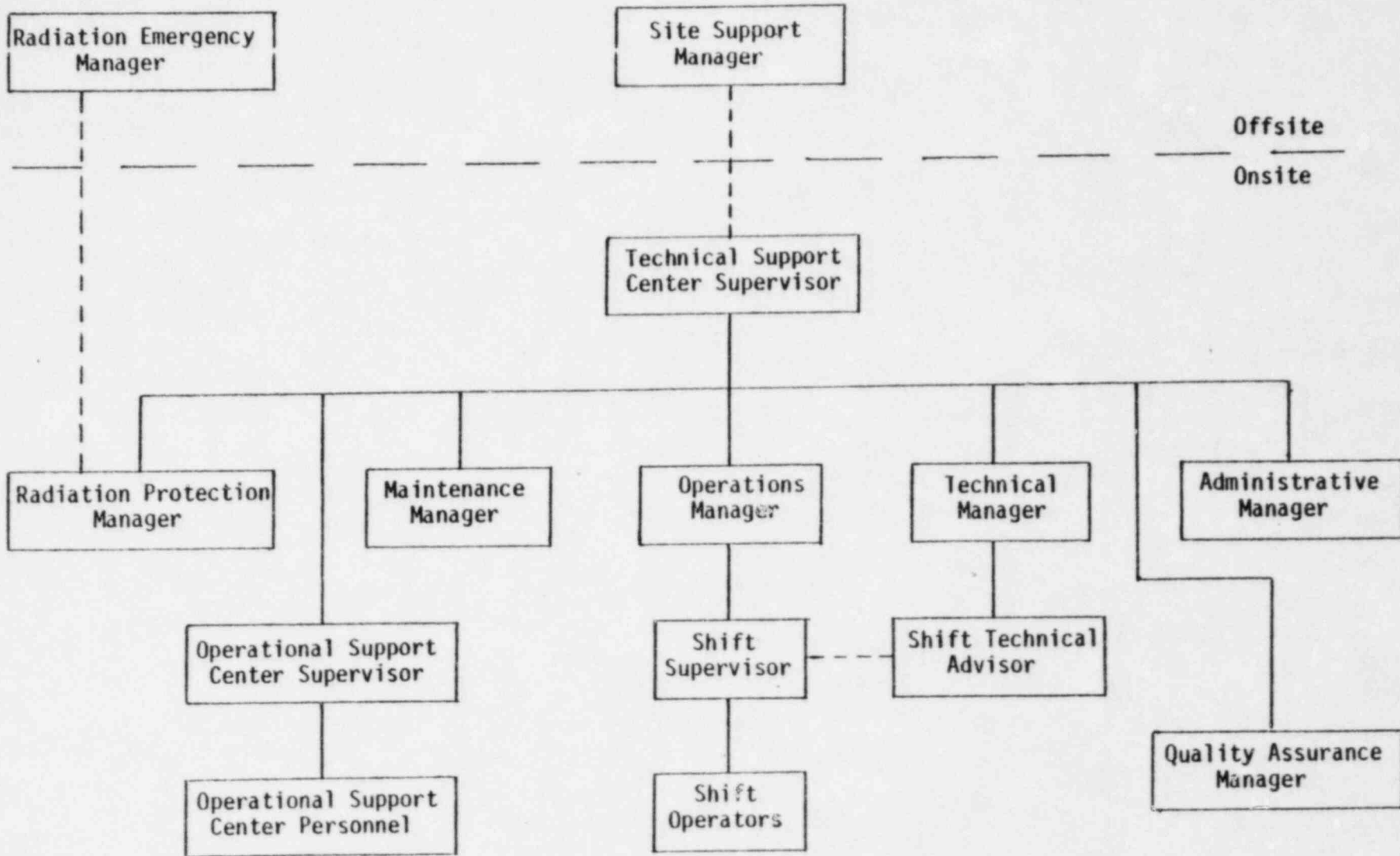
line of succession to the Shift Supervisor shall be established as well as the specific conditions under which higher level utility officials may assume this emergency coordination function.

Upon declaration of an emergency action level of "Notification of Unusual Event", the Shift Supervisor shall cause the onsite personnel to be notified and shall begin notification of offsite resources as deemed necessary to assist in the response effort. Upon declaration of the "Alert" emergency action level, an accident is presumed to have occurred or to be in progress, and the response actions as detailed in these criteria shall be initiated.

A. Onsite Resources and Activities

The utility-owner shall provide for an onsite post-accident organization to cope with an accident situation. This post-accident organization shall use the existing onsite organizational structure to the greatest extent practical to take advantage of established lines of communication and responsibility. The organization shall provide management personnel assigned responsibility for specific functions. The onsite accident recovery organization, headed by the Plant Manager (Technical Support Center Supervisor), shall control all site operations necessary to establish safe plant conditions.

Although the plant staff organization can reflect variations in company policy and procedures as established in Section II.A of these criteria, a representative organization is shown in Figure 3.



_____ COMMAND
 - - - - - COMMUNICATIONS

POST-ACCIDENT ONSITE ORGANIZATION

Figure 3

The onsite organization shall include the following resources in the areas indicated:

1. Control Room Resources

- a. Short Term - During this period, it is assumed that only the minimum required shift personnel will be available. Therefore, the Shift Supervisor will be in charge of all mitigation and recovery efforts. The shift staff shall consist of the personnel identified in Section II.A.2.d of these criteria.
- b. Near Term - Sufficient personnel shall be available in the Operational Support Center within eight hours of the determination that an accident condition exists to ensure that the on-shift personnel can all be relieved by properly qualified individuals.
- c. Long Term - Sufficient personnel shall be available within 16 hours of the determination that an accident condition exists to ensure that shift staffing can be maintained without exceeding applicable criteria on limitations of working hours for an extended period of time (at least one week).

2. Technical Support Center (TSC)

An onsite Technical Support Center (TSC) shall be established under the supervision of the Plant Manager or his designated alternate to direct the post-accident recovery operations of the plant. The TSC shall be separate from, but in very close proximity to, the control room and it shall be habitable to

the same degree as the control room for postulated accident conditions. The TSC shall have the capability to display and transmit plant status to those individuals who are knowledgeable of and responsible for engineering and management support of reactor operations in the event of an accident, and those persons who are responsible for the management of the accident. Upon activation, this facility will provide the main communication link between the plant, the Operational Support Center, the Nuclear Regulatory Commission, and the licensee's near-site Emergency Operations Facility. A complete set of as-built drawings and other records, as described in ANSI N45.2.9-1974, shall be properly stored and filed at the site and accessible to the technical support center under emergency conditions. These documents shall include general arrangement drawings, P&IDs, piping system isometrics, electrical schematics, and photographs of components installed without layout specifications (e.g., field-run piping and instrument tubing). Sufficient personnel shall be available to staff the Technical Support Center within the time frames indicated below. These personnel may be from the plant or site staffs, the utility offsite organization, or through contract arrangements with other organizations. These personnel or their equivalent replacements shall be available continuously for the duration of the accident condition.

- a. Short Term - No requirements.
- b. Near Term - Sufficient personnel shall be available to ensure that the Technical Support Center (TCS) can be fully

manned in less than one hour following the determination that an accident condition exists. This shall consist of:

- (1) Technical Support Center Supervisor - The Plant Manager or his designated alternate shall be the TSC Supervisor and shall manage the onsite recovery efforts and the onsite recovery organization. He shall communicate directly with the Site Support Manager in the near-site Emergency Operations Facility and shall be given full authority to direct the onsite recovery efforts without consulting offsite personnel when the situation warrants such action. The TSC Supervisor and his alternate(s) shall have the qualifications specified in ANSI/ANS 3.1, Section 4.2.1 and shall undergo specialized training* that provides background engineering information regarding the design of the NSSS and balance of plant purchased by the utility.
- (2) Radiation Protection Manager - The Site Radiation Protection Manager, as specified in Regulatory Guide 8.8, shall direct the onsite radiation protection procedures as specified by the emergency procedures or as directed by the TSC Supervisor. He shall also be in direct contact with the offsite Radiological Emergency

*Specific training requirements for TSC supervisory personnel will be determined by the Operator Licensing Branch of the NRC.

Manager to provide information necessary for initiating and implementing the plant emergency plan. He shall keep the TSC Supervisor fully informed of the status of emergency plan implementation and onsite radiation protection procedures. The Radiation Protection Manager and his alternate(s) shall have the qualifications specified in ANSI/ANS 3.1, Section 4.4.4 and shall undergo specialized training that provides background engineering information regarding the design of the NSSS and balance of plant purchased by the utility.

- (3) Technical Manager - the Plant Technical Manager shall advise the TSC Supervisor on proposed system modifications, alternate uses of systems in the event of loss of function, and plant characteristics and behavior. The TSC Technical Manager and his alternate(s) shall have the qualifications specified in ANSI/ANS 3.1, Section 4.2.4 and shall undergo specialized training that provides background engineering information regarding the design of the NSSS and balance of plant purchased by the utility.
- (4) Operations Manager - The Plant Operations Manager shall be in charge of the operations and manipulation of the reactor plant. He shall advise the TSC Supervisor on the operation of the plant in the accident recovery ,

and facilitate communications between the TSC Supervisor and the Control Room Supervisor. The TSC Operations Manager and his alternate(s) shall have the qualifications specified in ANSI/ANS 3.1, Section 4.2.2 and shall undergo specialized training that provides background engineering information regarding the design of the NSSS and balance of plant purchased by the utility.

(5) Maintenance Manager - The Plant Maintenance Manager shall advise the TSC Supervisor on proposed modification or alterations to plant systems and on specifics of plant systems and equipment, and shall direct the maintenance, modifications, or alterations of plant systems as specified by the TSC Supervisor. The TSC Maintenance Manager and his designated alternate(s) shall have the qualifications specified in ANSI/ANS 3.1, Section 4.2.3 and shall undergo specialized training that provides background engineering information regarding the design of the NSSS and balance of plant purchased by the utility.

(6) Quality Assurance Manager - The Plant Quality Assurance Manager shall ensure that all operations and modifications conducted during the recovery effort comply with the plant quality assurance program. The TSC Quality Assurance Manager and his alternate(s)

shall have the qualification specified in ANSI/ANSI 3.1, Section 4.4.5.

- (7) Administrative Manager - the Administrative Manager shall provide, as necessary, communication facilities for the recovery operations, logistic support for the onsite support organization, scheduling of activities, procurement of equipment and supplies, and communication with individuals and organizations to establish the onsite support staff following an accident. The Administrative Manager shall have as a minimum two years of experience in procurement including at least one year of supervisory experience. Additionally, the incumbent for this position shall be thoroughly familiar with the utility-owner's procurement procedures.
- (8) Qualifications and Experience - The Technical Support Center personnel shall collectively have the knowledge and experience as specified in Table 1. Although knowledge and experience can be possessed collectively, this does not imply that any specific requirement can be subdivided (i.e., one year of experience is not equivalent to two individuals with six months experience each). The personnel considered in determining that this expertise exists may include the managers listed in (1) through (7) above, augmented by additional personnel as necessary.

Table 1

QUALIFICATIONS AND EXPERIENCE - TECHNICAL SUPPORT CENTER STAFF

<u>Area of Expertise</u>	<u>Academic Qualifications</u>	<u>Experi- ence Total</u>	<u>Experience Nuclear Power</u>
Reactor Engineering	B. S. in Engineering or Science	5 yrs.	1 yr. in operations (including 6 mos., onsite) 6 mos. in reactor transient analysis
Thermal Hydraulics	B. S. in Engineering or Science	5 yrs.	1 yr. in operations (including 6 mos. onsite) 6 mos. in hydraulic transient analysis
Mechanical Engineering	B. S. in Engineering or Science	5 yrs.	1 yr. in operations (including 6 mos. onsite) 6 mos. in hydraulic transient analysis
Instrumentation and Control Engineering including Process Computer	B. S. in Engineering or Science, or the equivalent	5 yrs.	1 yr. in operations (including 6 mos. onsite)
Chemistry and Radiochemistry	B. S. in Engineering or Science or the equivalent	5 yrs.	1 yr. in operations (including 6 mos. onsite)
Radiation Protection	Associate's degree or the equivalent	3 yrs.	1 yr. in operations
Overall Plant Design & Engineering	B. S. in Science or Engineering	6 yrs.	4 yrs. with at least 2 years each in design and operations
Electrical Systems	B. S. in Science or Engineering	5 yrs.	1 yr. in operations

Within eight hours at least one full complement of personnel as designated above shall be available to relieve the TSC personnel.

- c. Long Term - There shall be sufficient personnel available within 16 hours to ensure that the Technical Support Center can be staffed on a 24-hour-a-day basis for an extended period of time (at least one week).

3. Operational Support Center (OSC)

An onsite Operational Support Center (OSC) shall be established. It shall be separate from the control room and the Technical Support Center and shall be the place to which the operations support personnel will report in an emergency situation. Communications with the control room, the Technical Support Center and the near-site Emergency Operations Facility shall be provided.

Sufficient personnel shall be available to staff the Operational Support Center within the time frames indicated below. These personnel may be from the plant or site staffs, the utility off-site organization, or through contract arrangements with the organizations. These personnel or their equivalent replacements shall be available continuously for the duration of the accident condition.

- a. Short Term - No requirements.
- b. Near Term - The following personnel shall be available in the Operational Support Center within one hour of the determination that an accident condition exists.

- (1) Operational Support Center Supervisor - The function of the OSC Supervisor is to coordinate the support activities for the technical support center and control room operators. He shall report directly to the Technical Support Center Supervisor. The OSC Supervisor shall have the qualifications specified in ANSI/ANS 3.1, Section 4.3.2.
 - (2) Technicians - At least one person in each of the following areas of expertise: instrumentation and control, plant chemistry, electrical systems and mechanical systems. These personnel shall have the qualifications specified in ANSI/ANS 3.1, Section 4.5.
 - (3) Operating Personnel - At least one full shift complement of licensed and non-licensed operators as specified in the Technical Specifications, in addition to the shift complement already on site.
 - (4) Health Physics - At least three two-man monitoring teams with the qualifications specified in ANSI/ANS 3.1, Section 4.5.2.
 - (5) Security Force - Sufficient personnel to man one additional shift.
- c. Long Term - There shall be sufficient personnel available within 16 hours to ensure that the operational support center can be staffed on a 24-hour-a-day basis for an extended period of time (at least one week).

4. Procedures - Emergency and accident procedures shall include:
 - a. A clearly established chain of command which identifies the individuals and their alternates, their responsibilities and authority, and lines of communication during all phases of the accident and recovery operations.
 - b. Detailed instructions for contacting the plant personnel necessary to meet the requirements of 1, 2 and 3 above, and for contacting the applicable offsite personnel to implement offsite response plans.
 - c. Detailed instructions for transfer of responsibility between the Shift Supervisor and the Operations Manager and the Technical Support Center Supervisor when they arrive at the TSC. This should include information to be exchanged, and authority and responsibilities to be transferred.
 - d. A description of communication lines and responsibilities. This shall clearly indicate that communications with the site shall be limited to the greatest extent practical to the link between the Technical Support Center (TSC) and the Site Support Manager at the near-site Emergency Operations Facility. Additional separate communication links shall be established between the Radiological Emergency Manager and the Technical Support Center (TSC) Radiation Protection Manager to facilitate implementation of area radiation protection emergency plans. A separate communication link shall also be established between the Technical Support Center (TSC) Supervisor and the

Operational Support Center (OSC) Supervisor. Offsite communications with the control room should be limited to those authorized by the TSC Supervisor.

- e. Control room access shall be limited to on-shift operators and personnel requested by the Shift Supervisor. Access to the control room shall be as designated by the Operations Manager or the TSC Supervisor.
 - f. Procedures shall be developed to specify how the available personnel will be used and to what locations they will report. Lines of authority shall be clearly established.
 - g. Procedures shall clearly specify that only the Operations Manager has the authority to direct the action of the Shift Supervisor.
 - h. Procedures shall clearly establish how special training (i.e., walk through, proposed system alterations, radiological protection, etc.) for activities required by the accident will be conducted. They shall clearly establish the responsibility of the Training Manager to design and direct the necessary training with the assistance of OSC personnel.
5. Training - Implementation of the emergency procedures shall be required training for all onsite personnel in their initial and requalification training. Additionally, drills or exercises shall be held at least every six months for each shift to ensure that all the personnel required during the first eight hours of the accident can be available at the site

within the required times. The drills or exercises shall also test communication links and verify the availability of a complete set of as-built drawings and other records, as described in ANSI N45.2.9-1974 and the operability of instruments in the TSC.

B. Offsite Resources and Activities

The utility-owner shall have available the necessary management and technical resources to support the onsite staff in event of an accident. These resources may be provided from the utility-owner's staff or through contractual arrangements with other organizations.

1. Emergency Operations Facility (Near-Site)

The utility-owner shall establish an Emergency Operations Facility at a convenient location near the nuclear plant site. This facility will be operated by the licensee for continued evaluation and coordination of all licensee activities related to an emergency having or potentially having environmental consequences. In addition, the major Federal, State and local response agencies may manage their activities from this location. The Emergency Operations Center (EOC) will provide information needed by Federal, State and local authorities for implementation of off-site emergency plans in addition to a centralized meeting location for key representatives from the agencies. The Public Information Manager and the Site Support Manager shall operate from this facility. Overall offsite support should also operate from this facility unless the utility-owner can demonstrate that the function can be handled better from another location.

2. Organization

The utility-owner shall describe its organization for accident mitigation and recovery. The key characteristics of an acceptable organizational arrangement for the offsite recovery staff are shown in Figure 4. The utility-owner's organization need not be identical to that shown in Figure 4, but the organization shall provide management personnel assigned responsibility for each of the functions discussed herein and have available the required number of appropriately qualified personnel to accomplish the stated tasks. The offsite accident recovery organization, headed by the Recovery Manager, shall control all activities necessary to establish safe plant conditions and to limit the exposure to the public.

3. Management Resources

Each of the managers and directors shown on Figure 4 shall have the necessary authority, technical ability, and management experience to perform their functions as described below.

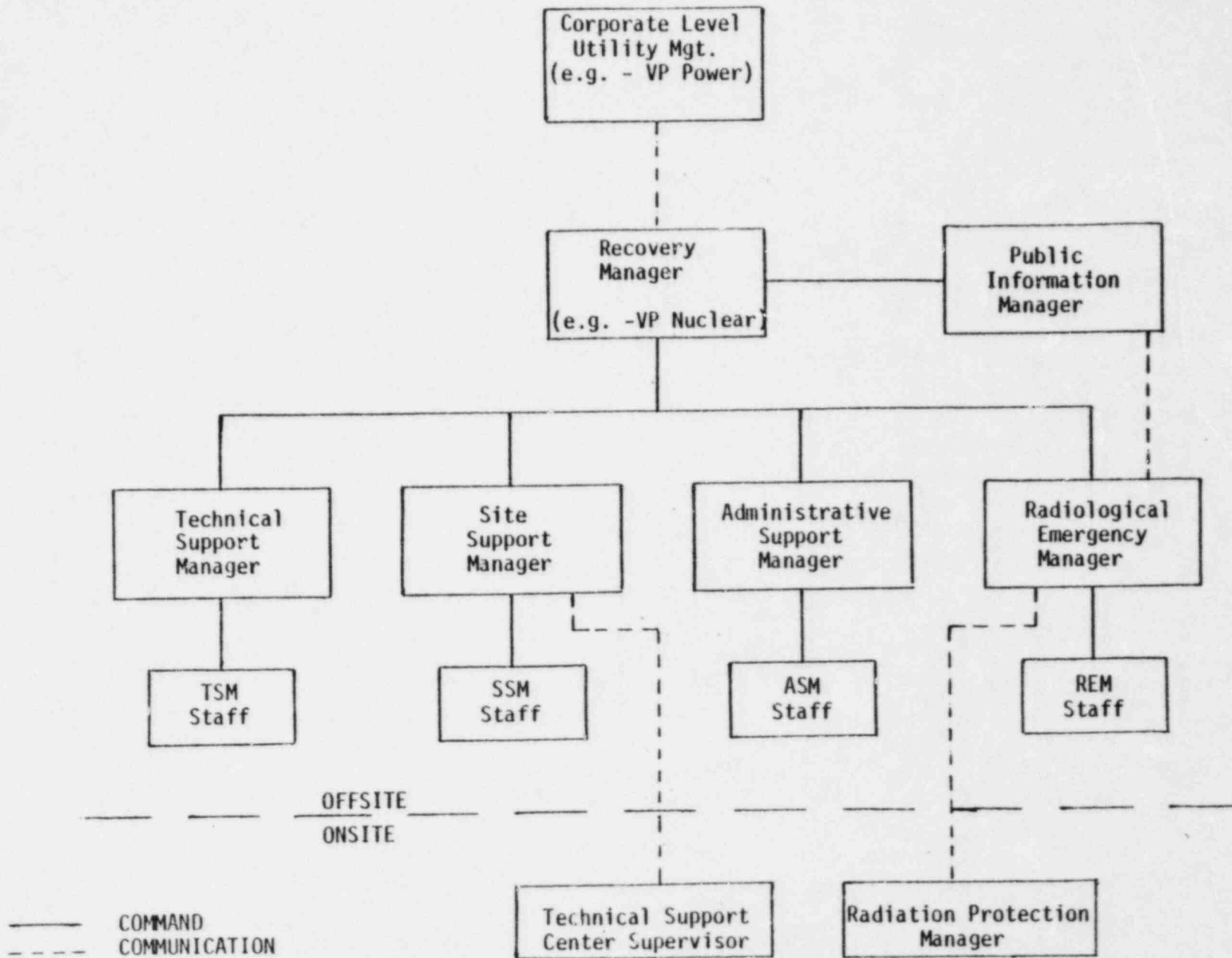
- a. Recovery Manager - The Recovery Manager shall manage the overall recovery operations of the plant. He is a corporate management level employee of the utility-owner responsible for nuclear generation (e.g., vice president nuclear power, Figure 2). He shall have full authority to make key decisions regarding accident mitigation or plant recovery without consultation with

higher management. The Recovery Manager or his alternate shall be available to take charge of the recovery efforts within 2 hours following the time the plant Shift Supervisor determines that an accident situation exists. The Recovery Manager or his alternate shall be on call at all times during the recovery period. The Recovery Manager shall have the qualifications specified in Section II.B.2.a.

The incumbent for this position shall undergo specialized training* that provides background engineering information regarding the design of the NSSS and balance of plant purchased by the utility.

- b. Technical Support Manager - The Technical Support Manager (TSM) shall manage the offsite technical resources as necessary to support the plant staff, the Site Support Manager, and the Radiological Emergency Manager during the recovery effort. The TSM shall be available within 2 hours from the time it is determined that accident conditions exist. The TSM or his alternate shall be available on a continuous basis during the recovery period until it is determined by the Recovery Manager that this is no longer necessary. The Technical Support Manager shall have, as a minimum, a bachelor's degree in

* Specific training requirements for offsite supervisory personnel supporting the recovery effort will be determined by the Operator Licensing Branch of the NRC.



OFFSITE RECOVERY ORGANIZATION

Figure 4

engineering or the physical sciences and ten years of experience, including at least four years of management experience and three years of nuclear experience. The incumbent for this position shall undergo specialized training that provides background engineering information regarding the design of the NSSS and balance of plant purchased by the utility.

- c. Site Support Manager - The Site Support Manager (SSM) shall coordinate activities of the offsite organization to support site activities. All communication from the offsite recovery team to the onsite Technical Support Center except for the Radiological Emergency Manager shall be approved by the Site Support Manager and the Technical Support Center Supervisor, who in turn directs the activities of the onsite operating staff managers assigned functional responsibility for radiation protection, maintenance, operations, and quality assurance. The SSM shall be available within 2 hours from the time it is determined that accident conditions exist. The SSM or his alternate shall be available on a continuous basis throughout the recovery period. The Site Support Manager shall have, as a minimum, a bachelor's degree in engineering or the physical sciences and ten years of experience, including at least four years of management

experience and five years of nuclear experience. The incumbent for this position shall undergo specialized training that provides background engineering information regarding the design of the NSSS and balance of plant purchased by the utility.

- d. Administrative Support Manager - The Administrative Support Manager (ASM) shall provide, as necessary, communication facilities for the recovery operations, logistic support for the offsite support organization, scheduling of activities, procurement of equipment and supplies, and communication with individuals and organizations to establish the offsite recovery staff following an accident. This individual shall initiate establishment of the offsite recovery staff within one hour from the time he is notified that accident conditions exist. The ASM or his alternate shall be available on a continuous basis throughout the recovery period. The Administrative Support Manager shall have, as a minimum, four years experience in procurement, including at least two years of supervisory experience, and appropriate training. Additionally, the incumbent for this position shall be thoroughly familiar with the utility-owner's procurement procedures.

- e. Radiological Emergency Manager - The Radiological Emergency Manager (REM) shall be responsible for implementing the plant emergency plan. He shall have the authority to represent the utility and to request state and local governments to initiate their responsibilities under the emergency plan. It will be necessary for him to communicate closely with the onsite Radiation Protection Manager and the Operations Manager to assure that he is kept fully knowledgeable of the plant status. The REM shall be available within 2 hours from the time it is determined that accident conditions exist. This position shall be staffed by the REM or his alternate on a continuous basis until the Recovery Manager determines that this is no longer necessary. The Radiological Emergency Manager shall have the qualifications and training equal to those specified for the Radiation Protection Supervisor in ANSI/ANS 3.1, Section 4.4.4.
- f. Public Information Manager - The Public Information Manager (PIM) is the official company spokesman for the accident recovery. In conjunction with his counterpart from the NRC, he shall make, or be present for, all statements to the press. He shall coordinate his information with public information spokesmen from local, state, and federal agencies, the Recovery Manager, and the Radiological Emergency Manager. He shall be responsible also for keeping the utility-owner employees

(including the onsite staff and offsite recovery team) informed of the status of the recovery effort. The PIM or his alternate shall be available on a continuous basis throughout the recovery period. The Public Information Manager shall have at least two years experience in public/press relations and at least six months training in nuclear plant systems and radiation technology. One year of nuclear plant experience may be substituted for the six months training.

4. Offsite Recovery Staff Resources

Sufficient numbers of appropriately qualified personnel shall be available to staff the offsite recovery team. The requirements for each manager's staff are discussed below. Each manager's staff should be functioning within four hours after the accident and should be established on a shift basis within 16 hours until the Recovery Manager determines that this level of support is no longer needed. The utility-owner shall state where the offsite recovery staff will be located in the event of an accident. The use of this location shall be assumed when procedures are written for providing logistic and communication support.

- a. Technical Support Manager's Staff - The Technical Support Manager shall have available a staff with the expertise and qualifications listed in Table 2. In addition, this staff shall include representatives from the NSS supplier, architect/engineer, and constructor of the plant. These representatives will act as liaison officers between

their company and the licensee and may perform other technical tasks if time permits. Staffing plans shall demonstrate that at least one individual meeting the acceptance criteria in each area of expertise of Table 2 and one liaison representative for each of the stated organizations are available for this staff on a shift basis (i.e., a minimum of 45 persons). The Technical Support Manager shall have the authority to organize his staff as necessary to respond to a given accident and to reorganize as the needs of the accident situation dictate. Typical functions of this staff are writing emergency and contingency procedures, providing design and analysis information to the onsite Technical Support Center, and coordinating tasks with other organizations. Personnel from this staff may also be assigned to the onsite Technical Support Center as necessary.

- b. Site Support Manager's Staff - The Site Support Manager shall have available a staff with the expertise and qualifications listed in Table 3. The function of this staff is to support plant recovery operation by providing liaison between the site Technical Support Center and the remainder of the offsite recovery team. This important function is intended to limit the number of organizations and individuals communicating with the site directly, thereby allowing site personnel to devote maximum effort to cope with the accident. It may be

Table 2

OFFSITE TECHNICAL RESOURCES - TECHNICAL SUPPORT MANAGER'S STAFF

(Acceptance Criteria)

<u>Area of Expertise</u>	<u>Training</u>	<u>Experience</u>	
		<u>Total</u>	<u>Nuclear Power Plant</u>
Transient Analysis and System Interactions	B.S. in Engineering or related Sciences, Simulator training	10 years	5 years
Nuclear Engineering and Fuel Management	B.S. in Nuclear Engineering	10 years	5 years
Core Physics, Design and Control Theory	B.S. in Engineering or related Sciences	10 years including at least 3 years design	5 years
Electrical Power System	B.S. in E.E.	5 years, design and operation	3 years
Process Computers	B.S. in Computer Sciences	5 years operation	3 years
Instrumentation and Control Systems	B.S. in E.E.	6 years, including at least 2 years design	4 years
Refueling Operations	B.S. in Engineering, SRO or SRO limited to fuel handling	5 years	5 years
Engineering Mechanics of Power Plant Systems and Components	B.S. in M.E.	6 years, including at least 2 years design	3 years
Thermal-Hydraulics	B.S. in M.E.	5 years	2 years
Plant Structural and Containment Design	B.S. in M.E. or C.E.	5 years	4 years
Metallurgy (Materials) Q.A.	B.S. in Materials or B.S. in Engineering	5 years	2 years

Table 3

OFFSITE TECHNICAL RESOURCES - SITE SUPPORT MANAGER'S STAFF
(Acceptance Criteria)

<u>Area of Expertise</u>	<u>Training</u>	<u>Experience</u>	
		<u>Total</u>	<u>Nuclear Power Plant</u>
Fire Protection	1 year specific training in Fire Fighting Sciences	5 years	2 years
Chemical Engineering	B.S. in C.E.	5 years	2 years
Radiochemistry	B.S. in Chemistry plus 1 year of Radiochemistry	5 years	3 years
Radioactive Waste Management	B.S. in C.E., 1 year of specialized training	5 years	4 years
Decontamination of Equipment	1 year specialized training	10 years*	2 years
Radiation Control and Health Physics	B.S. in appropriate Sciences, 1 year of specialized training	4 years	4 years
Plant Operations	Holds or has held SRO on plant by same vendor	7 years	5 years
Plant Maintenance	B.S. in Engineering	10 years	5 years

* Up to 8 years experience may be in nuclear facilities other than power plants

necessary for the Site Support Manager to provide personnel from his staff to work onsite in their areas of expertise. Staffing plans shall demonstrate that at least one individual meeting the acceptance criteria for each area of expertise in Table 3 is available for this staff on a shift basis (i.e., a minimum of 24 persons).

- c. Administrative Support Manager's Staff - The Administrative Support Manager shall have available a staff of sufficient size to accomplish the following functions: establish necessary communications for the offsite recovery staff; notify offsite recovery staff members to assemble; provide housing, food, office equipment, etc., for the offsite recovery staff; make necessary contractual arrangements for the recovery effort; procure equipment, supplies, and additional personnel needed to support the recovery effort (both onsite and offsite); and provide additional manpower for scheduling activities deemed appropriate by the Recovery Manager. The staff members shall be trained in the use of the procedures to be used to accomplish these functions. The staff shall begin to accomplish the functions listed above within two hours after notification of the Administrative Support Manager that accident conditions exist.

- d. Radiological Emergency Manager's Staff - The Radiological Emergency Manager shall have available at least 20 individuals per shift (including individuals from the plant staff who will be assigned to assist with environmental monitoring). The equipment necessary to perform environmental monitoring (e.g. instruments, protective clothing) shall be available at the Emergency Operations Facility within 4 hours after notification of an accident. This staff shall be responsible for environmental monitoring and coordinating the emergency plan with state, local, and federal agencies. It will be necessary for them to communicate with the Operational Support Center Radiation Protection Staff in order to coordinate their actions with plant activities (e.g., planned releases of radioactive liquids). The members of this staff shall meet the qualification requirements for health physics technicians specified in ANSI/ANS 3.1, Section 4.5.2.
- e. Public Information Manager's Staff - The Public Information Manager shall have available several individuals to assist him in preparing and disseminating public information. The Public Information Manager or his alternate shall be prepared to provide news releases within four hours after notification of an accident. These staff individuals shall have experience in preparing and disseminating public information and be familiar with nuclear power plants and radiation terms and effects.

5. Outside Contractual Assistance

The utility-owner shall describe the necessary contractual arrangements that have been made to ensure that required personnel and logistics necessary to support the offsite recovery staff will be available when needed. These include such things as shelter, food, work areas, office equipment, transportation, and supplies. The utility-owner shall describe its financial capability to retain this contractual assistance.

6. Training and Requalification

A training program shall be prepared to train the offsite recovery staff managers to perform their roles in the event of an accident. This training shall include other members of the offsite accident recovery team who are employees of the utility-owner and the contacts for other companies that will be responsible for mobilizing their support personnel.

7. Procedures Required

- a. Activation of Accident Recovery Team - The utility-owner shall describe the procedures to be used to establish the offsite recovery team beginning with determination by the plant staff that an accident has occurred or is in progress. The procedures shall describe how staff members (including contractual assistance) will be notified and how logistics arrangements will be made to assemble and support the offsite recovery staff.

- b. Operation of Accident Recovery Team - The utility-owner shall describe the procedures to be used to effectively use its human resources. These procedures shall describe how work assignments will be controlled within the offsite recovery staff, how purchasing and procurement will be effected under the accident recovery management, how information will flow from the plant to the offsite organization, and generally how the different groups of the accident recovery team will interact among themselves and with the plant.
- c. Use of Physical Resources - The utility-owner shall describe the procedures to be used to effectively use its physical resources. These procedures shall describe how work space will be acquired for use of the offsite recovery team, how equipment and supplies will be handled, how communications will be established, and how special equipment (e.g., environmental radiation monitoring instruments) can be made available. The procedures will also describe how up-to-date design documents (e.g., plant drawings, equipment specs.) can be made available to the offsite recovery team.

IV. Criteria for Design and Construction

Each utility-owner of a planned nuclear power plant shall be involved in its design and construction activities to assure full understanding of the facility safety considerations. This involvement shall also provide a means for carrying over this understanding to the operations phase of the facility. This section describes the minimum involvement of the utility-owner of a planned nuclear power plant based on minimum utility involvement in the design and construction of the facility, i.e., the utility contracts A-E and consultant services as needed, and construction management. The utility-owner shall establish an organizational unit reporting to upper management to oversee and coordinate design and construction activities.

A. Responsibilities

The responsibilities of the utility-owner should, as a minimum, include:

1. Review and approval of site and plant design features.
2. Review and approval of the SAR.
3. Management and coordination of licensing activities.
4. Review and approval of design criteria of the NSSS vendor, architect-engineer, and principal contractors.
5. Review and audit of principal contractor activities.
6. Development and implementation of the quality assurance program.
7. Review and approval of procurement activities.

B. Management Resources

The utility-owner applicant shall include within its organization an upper management position assigned full-time responsibility to manage the responsibilities described in A. above. The incumbent for this position shall be knowledgeable in reactor plant design. He shall hold a degree in a scientific or engineering field, and have 15 years of power plant experience of which at least 5 years shall be nuclear. He shall have specific knowledge, by training or experience, of the planned NSSS, and balance of plant.

C. Technical Resources

Each utility-owner applicant shall establish within its organization a technical staff responsible to the upper management identified in B. above, to implement the responsibilities identified in A. above.

1. The technical staff shall consist of personnel holding degrees in a scientific or engineering field and having at least three years of power plant experience.
2. Personnel shall be included on the technical staff with expertise in the following fields: nuclear engineering, reactor analysis and design, mechanical engineering, electrical engineering, structural engineering, instrumentation and control, thermal/hydraulics, nuclear power plant operation, and radiation protection.

3. It is estimated that the minimum staff needed to implement the responsibilities of A. above is no less than 12 full-time technical persons.
4. Technical staff personnel shall receive appropriate training to assure familiarity with the NSSS and balance of plant design comprising the purchased nuclear plant.

D. Operational Considerations

Each utility-owner of a planned nuclear power plant shall include provisions for carrying over into the operational phase the safety considerations and design basis of the facility. Means to be considered for accomplishing this function should be as follows:

1. Early hiring of the plant technical staff and their incorporation into the technical group described in C. above.
2. Transfer of people from those groups involved in the design and construction into those groups that will provide technical support for the operation of the plant.
3. Participation of those personnel from C. above in establishing and conducting training programs for plant staff personnel and those providing support for the operation of the plant (Section II.B).
4. Participation of those personnel from C. above in the development and review of plant operating, maintenance and surveillance procedures.

~~FME~~

~~Don Howard Kamp.~~

File IE
Inspection

Please note the date and this is a draft.
It is however NRR "thoughts" and guidance
for management organization inspections at
NTOL facilities.

EJB