Robert G. Byram
Senior Vice President
Generation and Chief Nuclear Officer
Tel. 610.774.7502 Fax 610.774.5019
E-mail: rgbyram@papl.com

PP&L, Inc.
Two North Ninth Street
Allentown, PA 18101-1179
Tel. 610.774.5151
http://www.papl.com/

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U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Mail Station P1-137
Washington, D. C. 20555

SUSQUEHANNA STEAM ELECTRIC STATION
CLOSURE OF NEED FOR NSAG (ISEG) - RELATED
CHANGES TO THE TECHNICAL SPECIFICATIONS
(REFERENCE REPLY TO NOV 50-387/388-97-04-02)
PLA-4809

Docket Nos. 50-387
and 50-388

Reference: PLA-4666, G. T. Jones to USNRC, "Reply to Notice of Violation 50-387/388-97-04-01 through 05," dated September 4, 1997.

The purpose of this letter is to resolve commitments made in response to a Notice of Violation (NOV) issued as part of NRC Inspection Report 50-387/97-04, 50-388/97-04, dated August 5, 1997. In response to Violation 2, Item 3.a of that response stated the following:

"PP&L is developing a revision to the Technical Specifications to clarify the staffing requirements for NSAG (ISES). At a minimum, the revision will ensure the current ISES organization is clearly reflected, and will also provide for future flexibility while continuing to support the basis of the Technical Specification requirements. This change is currently planned to be submitted by November 21, 1997."

Under "Resolution of NSAG (ISES) Activities with Current Licensing Basis Requirements", the response also stated:

"PP&L believes that clarification of the current licensing basis requirements is appropriate based on the NRC findings. Therefore, in support of development of the new ISES charter discussed above, PP&L plans to document a reconciliation of the original ISES functions described in the SER against the revised ones described above. Current licensing basis changes resulting from this review will be processed in accordance with regulatory requirements."

PP&L has determined that the necessary FSAR/QA Plan changes require prior review and approval by the NRC pursuant to 10CFR50.54(a). Accordingly, the following information is enclosed:

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- proposed FSAR QA program description changes with respect to the subject requirements
- the reason for the changes
- the basis for concluding that the revised program incorporating the change continues to satisfy the criteria of 10CFR50 Appendix B and the FSAR QA program description.

Upon receipt of NRC review and approval of these changes (or the passage of 60 days as allowed by 50.54), they will be incorporated into the FSAR in accordance with 10CFR50.71.

PP&L's Improved Technical Specifications (ITS) submittal currently under review by NRC proposed relocation of these requirements to licensee-controlled documents. Based on PP&L's understanding that the NRC review and approval of our submittal will be accomplished by our currently planned implementation date of June 30, 1998, PP&L plans to utilize the proposed amendment on ITS to provide the appropriate revisions to the Technical Specifications, rather than submitting an interim change. Should the ITS schedule become impacted such that reconsideration of the need for a current Technical Specification change is warranted, PP&L will; in a timely manner, review the need to change this commitment with the NRC.

If you have any questions about this plan, please contact Mr. J. M. Kenny at (610) 774-7535.

Sincerely,

R. G. Byram

Attachments

copy: NRC Region I
Mr. K. M. Jenison, NRC Sr. Resident Inspector - SSES
Mr. C. Poslusny, Jr., NRC Sr. Project Manager - OWFN

PP&L EVALUATION OF CHANGES TO FSAR QA PROGRAM DESCRIPTION: INDEPENDENT SAFETY ENGINEERING GROUP (ISEG)

Proposed Changes: See proposed new FSAR Subsection 17.2.1, attached.

Reason for Changes:

As a result of NRC Integrated Inspection 50-387/97-04 & 50-388/97-04 dated August 5, 1997, PP&L was cited for a Violation (97-04-02) that stated in part:

> *SSES Technical Specifications (TS) 6.2.3 states that the Nuclear Safety Assessment Group (NSAG) shall be composed of at least five dedicated, full-time engineers with at least three located on site, each with a bachelor's degree in engineering or related science.*
>
> *a. Contrary to the above, on June 20, 1997, the NSAG was not composed of five dedicated, full-time engineers, in that, two of the engineers were not dedicated, full-time to NSAG activities.*

PP&L added two engineers to ISES to attain compliance. As a corrective action to avoid further violations, PP&L's response to the violation stated (page 4 of PLA-4666, 09/04/97) the following:

> *PP&L is developing a revision to the Technical Specification to clarify the staffing requirements for NSAG (ISES). At a minimum, the revision will ensure the current ISES organization is clearly reflected, and will also provide for future flexibility while continuing to support the basis of the Technical Specification requirements. This change is currently planned to be submitted by November 21, 1997.*

Under "Resolution of NSAG (ISES) Activities with Current Licensing Basis Requirements", the response also stated:

> *PP&L believes that clarification of the current licensing basis requirements is appropriate based on the NRC findings. Therefore, in support of development of the new ISES charter discussed above, PP&L plans to document a reconciliation of the original ISES functions described in the SER against the revised ones described above. Current licensing basis changes resulting from this review will be processed in accordance with regulatory requirements.*

PP&L has determined that the necessary FSAR/QA Plan changes require prior review and approval by the NRC pursuant to 10CFR50.54(a). Upon receipt of NRC review and approval of these changes (or the passage of 60 days as allowed by 50.54), they will be incorporated into the FSAR in accordance with 10CFR50.71.

PP&L's Improved Technical Specifications (ITS) submittal currently under review by NRC proposed relocation of these requirements to licensee-controlled documents. Based on PP&L's understanding that the NRC review and approval of our submittal will be accomplished by our currently planned implementation date of June 30, 1998, PP&L plans to utilize the proposed amendment on ITS to provide the appropriate revisions to the Technical Specifications, rather than submitting an interim change. Should the ITS schedule become impacted such that reconsideration of the need for a current Technical Specification change is warranted, PP&L will, in a timely manner, review the need to change this commitment with the NRC.

Basis For Concluding That The Revised Program Incorporating The Change Continues To Satisfy The Criteria Of 10CFR50 Appendix B And The FSAR QA Program Description.

NRC Administrative Letter 95-06, Relocation of Technical Specifications Administrative Controls Related to Quality Assurance, December 12, 1995, states that the ISEG requirements present in Technical Specifications may be relocated to the quality assurance (QA) program. The proposed ITS change currently under NRC review will revise the current Technical Specifications to relocate these requirements upon approval by NRC. PP&L is proposing changes to FSAR Sections 17.2.1, "Independent Safety Engineering Group," and 18.1.7.3, "Statement of Response, (TMI Action Plan Item I.B.1.2."). The latter will be annotated that the response has been relocated to Section 17.2. A copy of the proposed Section 17.2.1 is attached. This document would then be the controlling requirement for the ISEG, and it would be controlled in accordance with 10 CFR 50.54(a).

The attached proposed Section 17.2.1 of the FSAR contains the principal elements that are in Section 6.2.3 of the current Technical Specifications, with one exception. The exception is that PP&L desires to have the flexibility to use the provisions of Section 4.1 of ANS/ANSI-3.1-1981 to document equivalent qualifications for ISEG engineers. PP&L is committed to this NRC recognized standard. Therefore, application of its provisions are not considered to represent a significant reduction in the margin of safety. In addition, the attached proposed change to the FSAR is based upon the requirements for an ISEG as stated in NUREG-0737, November 1980, Clarification of TMI Action Plan Requirements (Task Action Plan I.B.1.2). Specifically:

- ISEG will maintain cognizance of nuclear industry safety issues and use this information to enhance Susquehanna SES nuclear safety and (or) plant performance.

- Except as described above, ISEG composition and the qualification of members is unchanged.

- ISEG will maintain surveillance of plant operations and maintenance activities to provide independent confirmation that these activities are performed correctly and safely.

- ISEG will make recommendations to the Senior Corporate Nuclear Officer for improving nuclear operations. These recommendations may be in the areas of procedures, equipment modifications, maintenance activities, operations activities, or any other appropriate area for improving nuclear safety and (or) plant performance.

The proposed change to the FSAR contains two additional requirements that are not contained in the current Technical Specifications. Specifically:

- ISEG will provide systematic and independent assessment of plant activities and advise the Senior Corporate Nuclear Officer on the overall effectiveness and safety of the company's nuclear operation.

- ISEG will perform independent reviews of plant activities including operations, maintenance, outages, plant incidents and other activities that may impact nuclear safety.

In summary, the proposed QA program changes, with one exception, ensure that the current provisions of the Technical Specifications and NRC's stated position regarding NUREG-0737, Item I.B.1.2, are met or exceeded. The one exception taken reflects a position endorsed by an NRC-recognized ANSI Standard to which PP&L has committed. Therefore, the revised program incorporating the change continues to satisfy the criteria of 10CFR50 Appendix B and the FSAR QA Program description.

Attached References

- Current and Revised FSAR Section 17.2.1
- Current and Revised FSAR Section 18.1.7.3
- SSES Units 1 & 2 current Technical Specifications, Section 6.2.3
- Section 4.1 of ANS/ANSI-3.1-1981

D. Surveillance Services

1. Schedule, scope, and perform QA Surveillances of plant activities.

2. Perform document reviews as required or requested.

3. Provide support for the Plant Reliability Enhancement Program.

4. Perform, when requested, NAS verification of corrective actions and commitments described in Licensee Event Reports and other correspondence to the NRC.

5. Provide NAS Surveillance Observation Training/Retraining.

E. Independent Safety Evaluation Services

Independently evaluating PP&L's nuclear activities with particular emphasis on the effectiveness and quality of the Company's nuclear operations and related safety/environmental programs. This responsibility includes performing the on-site Independent Safety Engineering Group functions mandated by NUREG-0737.

F. Operating Experience Services

Administration of the Department's Condition Report and Operating Experience Program. This includes development and maintenance of trending, tracking and reporting activities associated with the program, and maintenance of program procedures.

17.2.1.6 Manager - Nuclear Information Services

The Manager-Nuclear Information Services is responsible for the ongoing planning, development, and maintenance of information services including hardware and software. The Manager-NIS is also responsible for providing procedural guidance on the implementation of the Software Quality Assurance Program.

17.2.1.7 Manager - Nuclear Department Support

The Manager-Nuclear Department Support is responsible for developing and implementing a records management/document

Simulator examinations will be included as part of the licensing examinations.

18.1.6.2 Interpretation

None required.

18.1.6.3 Statement of Response

The reactor operator and senior reactor operator training program has been upgraded to include the subject material described in this requirement. Refer to Subsection 18.1.4.3 for the response to requirement I.A.2.1, "Immediate Upgrading of Reactor Operator and Senior Reactor Operator Training and Qualifications." Candidates will be prepared and certified in accordance with Nuclear Department Instruction NDI-QA-4.2.1. The Susquehanna SES simulator is available for the simulator portion of exams. Application packages include a release which permits the NRC to inform PP&L management of exam results.

18.1.7 EVALUATION OF ORGANIZATION AND MANAGEMENT (I.B.1.2)

18.1.7.1 Statement of Requirement

Each applicant for an operating license shall establish an onsite independent safety engineering group (ISEG) to perform independent reviews of plant operations.

The principal function of the ISEG is to examine plant operating characteristics, NRC issuances, Licensing Information Service advisories, and other appropriate sources of plant design and operating experience information that may indicate areas for improving plant safety. The ISEG is to perform independent review and audits of plant activities including maintenance, modifications, operational problems, and operational analysis, and aid in the establishment of programmatic requirements for plant activities. Where useful improvements can be achieved, it is expected that this group will develop and present detailed recommendations to corporate management for such things as revised procedures or equipment modifications.

Another function of the ISEG is to maintain surveillance of plant operations and maintenance activities to provide independent verification that these activities are performed correctly and that human errors are reduced as far as practicable. The ISEG will then be in a position to advise utility management on the overall quality and safety of

operations. The ISEG need not perform detailed audits of plant operations and shall not be responsible for sign-off functions such that it becomes involved in the operating organization.

The new ISEG shall not replace the plant operations review committee (PORC) and the utility's independent review and audit group as specified by current staff guidelines (Standard Review Plan, Regulatory Guide 1.33, Standard Technical Specifications). Rather, it is an additional independent group of a minimum of five dedicated, full-time engineers, located onsite, but reporting offsite to a corporate official who holds a high-level, technically oriented position that is not in the management chain for power production. The ISEG will increase the available technical expertise located onsite and will provide continuing, systematic, and independent assessment of plant activities. Integrating the shift technical advisors (STAs) into the ISEG in some way would be desirable in that it could enhance the group's contact with and knowledge of day-to-day plant operations and provide additional expertise. However, the STA on shift is necessarily a member of the operating staff and cannot be independent of it.

It is expected that the ISEG may interface with the quality assurance (QA) organization, but preferably should not be an integral part of the QA organization.

The functions of the ISEG require daily contact with the operating personnel and continued access to plant facilities and records. The ISEG review functions can, therefore, best be carried out by a group physically located onsite. However, for utilities with multiple sites, it may be possible to perform portions of the independent safety assessment function in a centralized location for all the utility's plants. In such cases, an onsite group still is required, but it may be slightly smaller than would be the case if it were performing the entire independent safety assessment function. Such cases will be reviewed on a case-by-case basis.

This requirement shall be implemented prior to issuance of an operating license.

Refer to Subsection 18.2.6 for the response to additional requirements contained in NUREG 0694.

18.1.7.2 Interpretation

None required.

18.1.7.3 Statement of Response

The functions of the ISEG were originally performed by the Nuclear Safety Assessment Group (NSAG). PP&L's commitment to the NSAG was addressed in a letter from N. W. Curtis to B. J. Youngblood on December 8, 1980 (PLA-585) and was further addressed in Nuclear Department Instruction NDI-1.1.2.

Since December 1980 significant changes have occurred within the Nuclear Department, including organizational names, structures, and reporting channels. In addition, the procedures program has been totally revised. Currently, the ISEG function is performed by Independent Safety Evaluation Services (ISES). This name change occurred in February 1995 when the previous NSAG was assigned to the newly created Nuclear Assessment Services (NAS). The functions of the NSAG were retained by ISES. These are specified in Nuclear Department Procedure NDAP-QA-0100, Conduct of Nuclear Assessment Services. Nuclear Department Procedures have replaced the Nuclear Department Instructions, including NDI-1.1.2. The independence of the ISES organization was maintained, since the Manager-Independent Safety Evaluation Services reports to the Manager-Nuclear Assessment Services, who is not in the direct management chain for nuclear power production. The Manager-NAS reports directly to the Senior Vice President-Nuclear, and has the responsibility and the authority to identify deviations from quality and safety requirements to any appropriate Nuclear Department management level.

The ISES shall be composed of at least five dedicated, full-time engineers with at least three located on site. Each member of ISES shall have a bachelor's degree in engineering or related science, and at least two years professional level experience, at least one year of which experience shall be in the nuclear field, or the equivalent. ISES is currently organized with the Manager-ISES plus one nuclear Safety Engineer at the General Office in Allentown and the Site Supervisor-ISES plus two Nuclear Safety Engineers on site.

The ISES shall function to examine Susquehanna SES operating characteristics, NRC issuances, industry advisories, Licensee Event Reports, and other sources of plant design and operating experience information, including plants of similar design, which may indicate areas for improving plant safety. The ISES shall be responsible for maintaining surveillance of unit activities to provide independent verification that these activities are performed correctly and that human errors are reduced as much as practical. The ISES shall make detailed recommendations for revised procedures, equipment modifications, maintenance activities, operations activities,

or other means of improving SSES nuclear safety to the Senior Vice President-Nuclear.

The ISES shall perform the following specific activities:

- Conduct nuclear safety assessments of Nuclear Department activities, including investigations of operational incidents, and prepare project reports.
- Evaluate for technical adequacy and clarity those procedures important to the safe operation of SSES.
- Evaluate plant performance regarding conformance to safety/environmental regulations.
- Review violations, deviations, and reportable events at SSES that require reporting to the NRC in writing.

18.1.8 SHORT-TERM ACCIDENT AND PROCEDURE REVIEW (I.C.1)

18.1.8.1 Statement of Requirement

Reanalysis of small break LOCAs, transients, accidents, and inadequate core cooling and preparation of guidelines for development of emergency procedures should be completed and submitted to the NRC for review by January 1, 1981. The NRC staff will review the analyses and guidelines and determine their acceptability by July 1, 1981, and will issue guidance to licensees on preparing emergency procedures from the guidelines. Following NRC approval of the guidelines, licensees and applicants for operating licenses issued prior to January 1, 1982, should revise and implement their emergency procedures at the first refueling outage after January 1, 1982. Applicants for operating licenses issued after January 1, 1982 should implement the procedures prior to operation. This schedule supersedes the implementation schedule included in NUREG-0578, Recommendation 2.1.9 for item I.C.1(a)3, Reanalysis of Transients and Accidents. For those licensees and/or owners groups that will have difficulty in attaining the January 1, 1981 due date for submittal of guidelines, a comprehensive program plan, proposed schedule, and a detailed justification for all delays and problems shall be submitted in lieu of the guidelines.

18.1.8.2 Interpretation

The BWR Owners' Group guidelines may be utilized to develop emergency procedures for accidents and transients.

17.2.1.X Independent Safety Engineering Group

The Independent Safety Engineering Group (ISEG) is responsible for independently evaluating PP&L's nuclear activities, with particular emphasis on assessing the nuclear safety aspects of Susquehanna SES operation. The Manager-ISEG reports directly to and advises the Senior Corporate Nuclear Officer.

The ISEG shall be composed of at least five dedicated, full-time members with at least three located onsite. Each member shall have a bachelor's degree in engineering or related science, or documented equivalent qualifications per Section 4.1 of ANS/ANSI-3.1-1981. In addition, each member shall have at least two years professional level experience in his field, at least one year of which experience shall be in the nuclear field.

The Independent Safety Engineering Group shall:

- Provide systematic and independent assessment of plant activities and advise the Senior Corporate Nuclear Officer on the overall effectiveness and safety of the company's nuclear operation.
- Perform independent reviews of plant activities including operations, maintenance, outages, plant incidents and other activities that may impact nuclear safety.
- Maintain surveillance of plant operations and maintenance activities to provide independent confirmation that these activities are performed correctly and safely.
- Make recommendations to the Senior Corporate Nuclear Officer for improving nuclear operations. These recommendations may be in the areas of procedures, equipment modifications, maintenance activities, operations activities, or any other appropriate area for improving nuclear safety and (or) plant performance.
- Maintain cognizance of industry nuclear safety related issues and their applicability to Susquehanna SES. Utilize this information as appropriate to indicate areas for enhancing nuclear safety and (or) plant performance and as a basis for assessing plant performance.

The above activities satisfy the requirements for Independent Safety Engineering Group functions mandated by NUREG-0737.

18.1.7.3 Statement of Response

The functions of the Independent Safety Engineering Group (ISEG), which satisfy this requirement, are now contained in FSAR Section 17.2.1.X, Independent Safety Engineering Group.

6.2.3 NUCLEAR SAFETY ASSESSMENT GROUP (NSAG)

FUNCTION

6.2.3.1 The NSAG shall function to examine unit operating characteristics, NRC issuances, industry advisories, Licensee Event Reports, and other sources of plant design and operating experience information, including plants of similar design, which may indicate areas for improving plant safety.

COMPOSITION

6.2.3.2 The NSAG shall be composed of at least five dedicated, full-time engineers with at least three located onsite, each with a bachelor's degree in engineering or related science and at least two years professional level experience in his field, at least one year of which experience shall be in the nuclear field.

RESPONSIBILITIES

6.2.3.3 The NSAG shall be responsible for maintaining surveillance of unit activities to provide independent verification* that these activities are performed correctly and that human errors are reduced as much as practical.

AUTHORITY

6.2.3.4 The NSAG shall make detailed recommendations for revised procedures, equipment modifications, maintenance activities, operations activities, or other means of improving unit safety to the Senior Vice President-Nuclear.

6.2.4 SHIFT TECHNICAL ADVISOR

6.2.4.1 The Shift Technical Advisor shall provide technical support to the Shift Supervisor in the areas of thermal hydraulics, reactor engineering, and plant analysis with regard to the safe operation of the unit.

6.3 UNIT STAFF QUALIFICATIONS

6.3.1 Each member of the unit staff shall meet or exceed the minimum qualifications of ANSI N18.1-1971 for comparable positions and the supplemental requirements specified in Section A and C of Enclosure 1 of the March 28, 1980, NRC letter to all licensees, except for the Supervisor-Health Physics who shall meet or exceed the qualifications of Regulatory Guide 1.8, September 1975, and the shift Technical Advisor who shall meet or exceed the qualifications referred to in Section 2.2.1.b of Enclosure 1 of the October 30, 1979 NRC letter to all operating nuclear power plants.

6.4 TRAINING

6.4.1 A retraining and replacement training program for the unit staff shall be maintained under the direction of the Manager - Nuclear Training, and shall meet or exceed the requirements and recommendations of Section 5.5 of ANSI N18.1-1971 except that the licensed operator initial training and requalification programs shall meet or exceed the requirements of 10 CFR 55 and utilize the guidance contained in Regulatory Guide 1.8 Rev. 2.

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* Not responsible for sign-off function.

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operational support. The functional levels of the onsite operating organization are broken down as follows: Managers, Supervisors, Professional-Technical, Operators, Technicians, and Maintenance Personnel.

3.2.1 **Managers.** Individuals at the functional level of manager are those who are assigned broad responsibilities for direction of major aspects of a nuclear power plant. This functional level generally includes the plant manager (plant superintendent, or other title), his line assistants, if any, and the principal members of the operating organization reporting directly to the plant manager who have overall responsibility for plant operation, maintenance, personnel training or technical service activities.

3.2.2 **Supervisors.** Supervisors are persons principally responsible for directing the actions of operators, technicians, or maintenance personnel. Those positions usually designated as intermediate and first line supervisors are included in this category.

3.2.3 **Professional-Technical.** Professional-technical personnel are responsible for supervising and performing certain technical services in support of plant operations. Examples are those responsible for reactor engineering, instrumentation and control, radiation protection, training, chemistry and quality assurance.

As discussed in 3.3, other technical services beyond those provided by professional-technical personnel who are a part of the station organization are provided by Technical Support Personnel.

3.2.4 **Operators-Technicians-Maintenance Personnel.** Operators, technicians, and maintenance personnel are persons principally involved in the manipulation of plant controls, monitoring of instrumentation, radiation surveys, plant chemistry, or the operations of equipment; and persons principally involved in the calibration, repair, maintenance, or performance of other craft and technician activities in the plant. Examples are reactor operator, electrician, mechanic, electronics technician, or laboratory technician. Individuals in training or apprentice positions are not considered technicians or maintenance personnel for purposes of defining qualifications in Section 4, Qualifications, but are permitted to perform work in the job classification for which qualification has been demonstrated. These individuals may perform work without the direction and observation of qualified individuals if they have previously demonstrated their ability to perform these specific tasks.

Individuals in training or apprentice positions who do not meet the qualification requirements may perform work under the direction and observation of a qualified individual.

3.3 **Technical Support Personnel.** Technical support personnel provide additional services beyond those provided by the operating organization professional-technical personnel. Additionally, they may also review and audit operations of the nuclear power plant. Such services may be performed by owner organization personnel or by individuals or organizations providing consulting or contract services.

4. Qualifications

4.1 **General.** Nuclear power plant personnel shall have a combination of education, training, experience, health, and skills commensurate with their functional level of responsibility which provides reasonable assurance that their decisions and actions during normal and abnormal conditions will be such that the plant is operated in a safe and efficient manner. The medical requirements for licensed personnel are specified in American National Standard for Medical Certification and Monitoring of Personnel Requiring Operator Licenses for Nuclear Power Plants, N546-1976 (ANS-3.4). [4] Staff personnel and applicants for licensing prior to initial fuel loading at a new facility may not be able to meet nuclear power plant experience requirements. Special allowances for acceptance of personnel based on the additional training they will receive prior to fuel load may be permitted in these cases if the minimum experience at an operating nuclear power plant is satisfied.

Individuals who do not possess the formal educational requirements specified in this section shall not be automatically eliminated where other factors provide sufficient demonstration of their abilities. These other factors shall be evaluated on a case-by-case basis and approved and documented by the plant manager. The positive factors listed as follows may be considered in making the evaluation of an acceptable alternative to the educational requirements.

a. High school diploma or GED.

b. Academic and related technical training.

c. Qualified as an NRC senior operator at the assigned plant.

d. Four years of additional experience in his area of responsibility.

e. Four years of supervisory or management experience.

f. Demonstrated ability to communicate clearly (orally and in writing).

g. Certification of academic ability and knowledge by corporate management.

h. Successful completion of the Engineer-In-Training examination.

i. Professional Engineer License.

j. Associate Degree in Engineering or related science.

4.2 Managers

4.2.1 Plant Manager

a. Education: Bachelor Degree in Engineering or related science.

b. Experience: At the time of commencement of preoperational testing or appointment to the position, whichever is later, the plant manager shall have six years of power plant experience of which three years shall be nuclear power plant experience. During the three years, the individual shall have participated in the management activities of an operating nuclear power plant during the following periods.

(1) Two months operation above 20 percent power.

(2) Routine refueling outage (one to two months).

(3) Initial plant startup testing or post refueling outage startup testing.

The plant manager shall have a minimum of four years of supervisory or management experience.

c. Training: Hold an NRC senior operator license, or have held a license for a similar unit (LWR, LMFBR, HTGR), or have been certified at the plant or at an appropriate simulator (5.5.1.6) in accordance with 5.2.1.3. Also as required by 5.3.1 and 5.4.

d. The initial plant manager shall be assigned to the site six months prior to the start of the preoperational testing program.

4.2.2 Operations Manager

a. Education: Bachelor Degree in Engineering or related science.

b. Experience: At the time of commencement of preoperational testing or appointment to the position, whichever is later, the operations manager shall have four years of power plant experience of which three years shall be nuclear power plant experience. During the three years, the individual shall have participated in the operations or technical section activities of an operating nuclear power plant during the following periods.

(1) Two month operation above 20 percent power.

(2) Routine refueling outage (one to two months).

(3) Initial plant startup testing or post refueling outage startup testing.

c. Training: Obtain and hold senior operator license (5.2) and as required by 5.3.1, 5.4, and 5.5.

d. The initial operations manager shall be assigned to the site six months prior to the start of preoperational testing.

4.2.3 Maintenance Manager

a. Education: Bachelor Degree in Engineering or related science. Shall have nondestructive testing familiarity, craft knowledge, and an understanding of electrical, pressure vessel, and piping codes and standards.

b. Experience: At the time of commencement of preoperational testing or appointment to the position, whichever is later, the operations manager shall have four years of power plant experience of which two years shall be nuclear power plant experience. During the two years, the individual shall have participated in the maintenance section activities of an operating nuclear power plant during the following periods.

(1) One month operation above 20 percent power.

(2) Routine refueling outage (one to two months).

c. Training: As required by 5.3.1 and 5.4.

d. The initial maintenance manager shall be assigned to the site six months prior to the start of preoperational testing.

4.2.4 Technical Manager

a. Education: Bachelor Degree in Engineering or related science.

b. Experience: At the time of commencement of preoperational testing or appointment to the position, whichever is later, the technical manager shall have four years experience in responsible positions related to power generation of which three years shall be nuclear power plant experience. During the three years, the in-